Who Cares If I Stand on My Head When I Pray? Ritual Inflexibility and Mental-State Understanding in Preschoolers

*Nicholas J. Shaman, Anondah R. Saide, Kirsten A. Lesage and Rebekah A. Richert**

Abstract

During the preschool years, children understand prayer as a form of communication and are sensitive to the physical behaviours of prayer. Theorists have suggested a connection between the ability to reason about others' mental states and the inflexible nature of religious rituals. Thus, the current study examined this connection in preschool children's understanding of prayer. Child-parent dyads ($N = 182$) from multiple religious backgrounds were interviewed about their views on how people pray. Children additionally were tested for their understanding of others' knowledge, specifically their understanding that God and humans may have limited knowledge. Analyses indicated that children who believed that prayer could not incorporate unconventional actions had parents who also advocated this view, indicating children's views on prayer reflect the messages they receive about prayer from their parents. Additionally, controlling for age and parents' views on prayer, children's belief that prayer requires specific actions was significantly related to their understanding of the limitations of human knowledge, but not to their understanding of the limitations of God's knowledge. These findings indicate that children view the functions of prayer actions as communicating to other humans, but not necessarily to God, the intentions to be praying.

Keywords

agent concepts – preschool children – prayer – ritual actions – theory-of-mind

* *Author Note:* Nicholas J. Shaman, Anondah R. Saide, Kirsten A. Lesage and Rebekah A. Richert, University of California, Riverside, CA, USA. We thank Insia Hirawala for her assistance with this project and the parents and children who participated in this research. The research in this paper was conducted with the support of a grant from the Social Science Research Council's New Directions in the Study of Prayer initiative to the first and fourth authors, a grant from The John Templeton Foundation to the fourth author, a Research and Travel grant from the UCR Academic Senate to the fourth author, and a UCR Chancellor's Research Fellowship to Insia Hirawala. Correspondence concerning this article should be addressed to Nicholas Shaman, Department of Psychology, 900 University Ave., Riverside, CA, 92521. Telephone: (951) 827–7001. Email: nsham003@ucr.edu.

 | DOI 10.1163/9789004322035_009

With nearly two-thirds of parents in the United States engaging in religious behaviours with their children (Pew Forum, 2008), those raised in religious homes are likely to be exposed to prayer from very early ages. Most practitioners of prayer generally see prayer as a religious activity in which the practitioner communicates with a supernatural being (Spilka & Ladd, 2013). Even young children understand prayer as a form of communication (Long, Elkind, & Spilka, 1967); additionally, young children are particularly sensitive to the physical behaviours of prayer (Woolley & Phelps, 2001). The specific behaviours of religious activities are often conceptualized as the means through which communication with a supernatural being occurs (McCauley & Lawson, 2002). However, it is unclear how children's sensitivity to the physical behaviours of prayer is related to their understanding of prayer as a form of communication.

The present study examined the relationship between children's understanding of others' mental states and their view of the physical behaviours of prayer. Children's communication with others is facilitated by their developing ability to reason about other's mental states (Milligan, Astington, & Dack, 2007); thus, children's understanding of others' knowledge (e.g., whether humans and/or God can have false-beliefs) was assessed. Additionally, an aspect of children's sensitivity to the physical behaviours of prayer is flexibility (Richert, 2006); thus, children's view of whether people can pray when using unconventional behaviours (i.e., pray while standing on one's head) was assessed. Two sets of research findings and theoretical approaches are relevant to the relationship between flexibility and mental-state understanding.

First, the significance of the physical and mental behaviours of prayer shifts during the preschool years. Long and colleagues (1967) found that 5-year-old children conceptualized prayer as simple associations between the words and actions of prayer and other religious terminology, 7-year-old children conceptualized prayer as a concrete action, and 9-year-old children conceptualized prayer as a private conversation with God. Additionally, Woolley and Phelps (2001) asked young children about the mechanisms that cause prayer to work. Three- and 4-year-old children emphasized the physical aspects of prayer (e.g., closing one's eyes), and 5- and 6-year-old children began to understand prayer's mentalistic nature (e.g., thinking about and knowing about God). These studies indicate children initially view prayer as a set of physical behaviours and then incorporate mental behaviours, such as thinking and communicating, into their concept of prayer.

Second, a defining feature of religious rituals is that they are inflexible (Humphrey & Laidaw, 1994). This inflexibility results from an understanding of religious behaviours as a form of communication with a supernatural agent (McCauley & Lawson, 2002). Both adults and children understand that ritual behaviours must be performed in a specific way or the ritual will not work

(Barrett, 2002; Richert, 2006). Adults view only religious behaviours as inflexible, however, young children also view non-religious behaviours as inflexible (Tregay, Gilmour, & Charman, 2009). Thus it is unclear if children conceptualize religious behaviours as inflexible because they understand those behaviours to be a form of communication with a supernatural being, or because they simply view all behaviours as inflexible. To complicate matters further, children's understanding of behaviours as communicating symbolic intentions such as pretence develops over the preschool years (Richert & Lillard, 2004). Thus, children may conceptualize religious behaviours as inflexible because those behaviours are a form of communicating their intentions to other people rather than facilitating their communication with a supernatural agent (e.g., God).

Given that children's view of flexibility regarding prayer may be due to viewing prayer as facilitating communication with a supernatural being or communicating intentions to other people, the present study tested two hypotheses. Each hypothesis concerned the relation between children's developing mental-state understanding and the flexibility children attributed to prayer behaviours.

The first hypothesis was that as children attribute more limited knowledge to God they will view prayer behaviours as less flexible. This hypothesis is supported by research examining adults' views on ritual flexibility and research examining what children think God knows. Barrett (2002) found that if adults thought that the supernatural agent to whom a ritual was directed was omniscient, then the behaviours of the ritual could be flexible. In contrast, if adults thought the supernatural agent was not omniscient, then the behaviours of the ritual could not be flexible. Barrett (2002) concluded that the purpose of a ritual's behaviours is to convey the mental state of the practitioner to the supernatural agent. When the supernatural agent is omniscient, there is no need to communicate with the supernatural agent, because the supernatural agent knows the practitioner's mental state. But when the supernatural agent needs to be communicated with to know the practitioner's mental state, the behaviours are more important.

Additionally, Lane, Wellman, and Evans (2010, 2012) found that children's concepts of God's knowledge may change from unlimited, to limited, and back to unlimited in a non-linear pattern over the preschool years. This pattern is in contrast to a more linear pattern in children's concepts of humans' knowledge which changes from unlimited to limited (Wellman, Cross, & Watson, 2001). Given that preschool-aged children do attribute limited knowledge to God at some point during development (as in Lane et al., 2010, 2012), then children will also view prayer behaviours as inflexible during the same point

in development. This pattern would imply that children view conventional prayer actions as communicating to God that a person intends to be praying.

For example, Richert (2006) found that 4- to 6-year-old children were less likely than 6- to 12-year-old children to claim a ritual that had been changed would still work. In other words, younger children had a more inflexible view of rituals than older children. Thus, around the same age as when children emphasize the mental component of prayer (Woolley & Phelps, 2001), children also change in their judgments of a religious behaviour's inflexibility. In the context of Barrett's (2002) findings, children's understanding of God's omniscience may support an increasingly flexible view of prayer actions.

There are reasons to question this hypothesis, however. First, in contrast to Lane and colleagues (2010, 2012), Barrett, Richert and Driesenga (2001) found children do not attribute limited knowledge to God during the preschool years. These findings have been replicated cross-culturally (Knight, Sousa, Barrett, & Atran, 2004) and by examining a variety of mental components, such as perceptual abilities (Barrett, Newman, & Richert, 2003; Richert & Barrett, 2005). From this perspective, if children remain stable in viewing God as having unlimited knowledge, children should remain stable in viewing prayer as flexible. If children's attribution of unlimited knowledge to God remains stable (as in Barrett et al., 2001) but children's view about the flexibility of prayer behaviours change (as in Richert, 2006), then views on God's knowledge and prayer flexibility may be unrelated.

Thus, the second hypothesis was as children attribute more limited knowledge to humans they will view prayer behaviours as less flexible. From this hypothesis, children may view the behaviours of prayer as critical for communicating with other people (but not God) the intentions to be praying. This hypothesis is supported by Barrett and Lawson's (2001) finding that adults were more likely to judge rituals as inflexible when changes were made to the person performing the ritual, rather than the behaviours. From this view, flexibility of prayer behaviours should be related to the mental states of the practitioners involved in the prayer and not the supernatural agent to whom the prayer is directed. Additionally, Richert and Lillard (2004) found that children come to understand that specific behaviours communicate the intention to behave symbolically.

In order to test these hypotheses, the present study also examined the influences of age and parent beliefs about prayer on children's prayer flexibility. Based on Richert (2006), children should be increasingly flexible about prayer behaviours as they get older. Children's views on prayer flexibility also should be related to their parents' views on prayer flexibility (Richert & Granqvist, 2013). Parents who are less flexible about prayer behaviours may be more likely

to structure their children's prayer activities in conventional ways, thereby making the behaviours themselves salient to children. To provide context in which children view prayer, the current study examined whether children view prayer as a social or solitary activity.

Method

The present study explored the relationship between children's concept of prayer flexibility and their attribution of knowledge to God and humans in preschool-aged children from four religious backgrounds (Protestant Christian, Roman Catholic, Muslim, and non-affiliated). Children answered questions about where prayer can be performed, about whether people can pray using unconventional behaviours, and about God's and their mothers' knowledge. Parents also answered questions about whether people can pray using unconventional behaviours.

Participants

Two hundred and forty-seven parent-child dyads participated in this study. The children were between the ages of 3 and 7 (M = 4.69, SD = .82). Families were recruited to participate as part of a larger longitudinal study on children's developing understanding of religion (see Richert, Shaman, Saide, & Lesage, 2016). The data presented here were drawn from the first wave of data collection in which children also were interviewed about their fantasy orientation, understanding of supernatural causality, understanding of God's properties, and executive functioning. Families were recruited through Craigslist postings, flyers posted on and around the university campus, and at local religious (e.g., churches) and public (e.g., city libraries) organizations. All families reported English as the primary language spoken in the home.

Three exclusion criteria were applied to the analysis reported below. Parent-child dyads were excluded from data analysis if the child was outside of the age range of 3.5- to 6.0-years-old (n = 27), the parents did not self-identify as Protestant Christian, Catholic, Muslim or religiously non-affiliated (n = 12), and/or the child or the parent did not complete the questions used in the analyses below (n = 34). After removing these dyads, the final sample of participants included 182 parent-child dyads. Children ranged in age from 3.50- to 5.98-years-old. The gender and age breakdown of the children in each religious group are found in Table 1. Parents ranged in age from 20- to 59-years-old (M = 33.64, SD = 6.63). The majority of parents (n = 176) provided information on their child's ethnic background; our sample of children fell into the following groups: White/

TABLE 1 *Age breakdown of the child participants*

	Total		Female		Male	
	N	*M* (*SD*)	*n*	*M* (*SD*)	*n*	*M* (*SD*)
Protestant	59	4.63 (.63)	34	4.54 (.61)	25	4.74 (.65)
Catholic	34	4.78 (.67)	20	4.88 (.69)	14	4.63 (.64)
Muslim	58	4.75 (.66)	31	4.76 (.60)	27	4.74 (.74)
Non-Affiliate	31	4.60 (.60)	20	4.57 (.61)	11	4.65 (.62)
Total	182	4.68 (.64)	105	4.67 (.63)	77	4.71 (.66)

Caucasian (n = 64), Hispanic/Latino (n = 38), Other (n = 29), Asian (n = 25), Black/African American (n = 14), and Native American (n = 2).

Instruments

Prayer Context. Children answered two questions about whether prayer could be performed alone or with others. Children responded on a 5-point scale ('no-really sure' [−2] to 'yes-really sure' [+2]); these responses comprised the 'pray-alone' and 'pray-with-others' variables.

Prayer Flexibility. Children and parents answered three questions about whether or not a person, or a doll in the case of the child interview, could perform the following behaviours while praying: the splits, shrugging shoulders, and standing on one's head. Parents and children responded on a 5-point scale ('no-really sure' [−2] to 'yes-really sure' [+2]). Positive scores indicated that the participant viewed prayer actions as flexible (i.e., prayer can be performed with unconventional behaviours); negative scores indicated the participant viewed prayer as inflexible (i.e., prayer cannot be performed with just any behaviours). Responses were averaged for an overall 'prayer flexibility' score (Parent: Cronbach's α = .96; Child: Cronbach's α = .80).

Agent Knowledge. Agent knowledge questions were derived from Wellman and Liu's (2004) scale of theory-of-mind tasks. Within each task, children were asked two knowledge questions each for God and their mother.

For the modified visual perspective-taking task (Richert & Barrett, 2005), the child stood approximately 10 feet away from a white piece of paper on an opposite wall. From the child's view, it looked like there was a small, yellow dot on the paper. In actuality, the dot was a small, yellow smiley face. First, the experimenter asked the child what the child thought was on the paper.

Then, before the child knew the dot was a smiley face, the experimenter asked the child whether or not God and her/his mother would know what was on the paper. Once the child responded, the child was prompted to walk up to the piece of paper and see what was on it. After the child knew the paper had a smiley face on it, children were then taken back to the original position against the wall (10 feet away). At this point, the experimenter asked the child again what God and her/his mother would think was on the paper. A response of 'a dot' or whatever the child initially thought was on the paper indicates the child attributes limited knowledge to that agent and was scored a 1. A response of 'a smiley face' indicates the child attributes unlimited knowledge to the agent and was scored a 0.

The other two tasks followed a similar template. For the ambiguous figures task (Barrett et al., 2003), the child was shown a picture that was partially occluded and therefore impossible to correctly identify. While looking at the occluded picture, the child was asked whether or not God or her/his mother would know what the picture was. The child then removed the occluder and saw that the picture was a horse. Once the occluder was placed back over the picture, the child was again asked what her/his mother and God would think the picture was. A response of 'horse' indicated unlimited knowledge and was scored a 0. A response indicating the agent would not know the picture was scored a 1.

For the appearance-reality task, the child was shown a piece of chalk that looked like a cupcake. Before the child knew the object was chalk, the child was asked what her/his mother and God would think the object was. The child was then invited to touch and hold the object, and learned that the item was chalk. Then, the child put the chalk back on the table and the experimenter asked the child what her/his mother or God would think it was. A response of 'chalk' indicated unlimited knowledge and was scored a 0. A response of 'cupcake' indicated limited knowledge and was scored a 1.

Children's six answers for each agent (two answers per task) were averaged for an agent knowledge score for God (Cronbach's $\alpha = 0.76$) and for their mother (Cronbach's $\alpha = 0.71$).

Demographic Information. Parents (or guardians) also provided demographic information about the child, including the child's birthday, ethnic background, age, and gender. Parents (or guardians) also reported their own age, ethnic background, and gender.

Procedure

Each child and his or her parent/guardian were interviewed in an on-campus laboratory or in the family's home. The sections of the child interview about prayer and agent knowledge were counterbalanced between participants.

The child interview took approximately 45 to 75 minutes. While a trained experimenter interviewed the child, the accompanying adult filled out a questionnaire in an adjacent area. Participants were compensated $20 per child, and each child also received a small toy worth approximately $1.

Results

The two main hypotheses were tested through two hierarchical regression analyses predicting children's prayer flexibility. One tested the influence of children's understanding of God's knowledge and one tested the influence of children's understanding of human knowledge. Additionally, each regression analysis examined the influence of children's age and parents' assessment of prayer flexibility. Prior to the regression analyses, bivariate correlational analyses were conducted between all variables. Finally, the context in which children view prayer was assessed through a paired-samples *t*-test.

Agent Knowledge, Prayer Flexibility, and Age

The means and standard deviations of all variables, as well as correlations among variables, can be found in Table 2. Independent-samples *t*-tests indicated no significant order effect or gender effect on children's responses. In general, children were relatively inflexible about payer actions, indicating moderate certainty that people cannot pray using unconventional prayer actions. In contrast, parents indicated moderate certainty that a person could pray using unconventional actions; and an independent-samples *t*-test indicated that parents did so significantly more often than children, $t(181) = 0.76$, $p < .001$, $\eta_p^2 = .34$. There was a significant negative correlation between children's age and their prayer flexibility, $r = -.33$, $p < .001$. Older children were less flexible than younger children. This is contrary to Richert's (2006) findings, in which 7- to 12-year-old children were more flexible than 4- to 6-year-old children. This discrepancy will be considered in the discussion.

In regards to agent knowledge, a paired-samples *t*-test confirmed there were significant mean differences between attributions of mother's and God's knowledge, $t(181) = 4.90$, $p < .001$, $\eta_p^2 = .12$. Children attributed more limited knowledge to their mothers than to God. There was a significant positive correlation between children's age and their assessment of their mother's knowledge (see Table 2). Consistent with past research (Wellman et al., 2001), older children attributed more limited knowledge to their mother than younger children. In contrast, there was no significant correlation between children's age and their assessment of God's knowledge (see Table 2).

TABLE 2 *Correlations, means, and standard deviations for religious concepts and age*

Measure	1	2	3	4	5	*M*	*SD*
1. Children's age	—					4.69	0.64
2. Children's prayer flexibility	−.33**	—				−0.72	1.26
3. Mother's knowledge	.32**	−.27**	—			0.45	0.33
4. God's knowledge	.07	−.05	.56**	—		0.34	0.34
5. Parents' prayer flexibility	−.07	.25**	.03	.13†	—	0.54	1.56

Note. †$p < .10$; *$p < .05$; **$p < .01$.

Predictors of Children's Prayer Flexibility

To test the influence of age, parents' view of prayer flexibility, and agent knowledge on children's prayer flexibility, we built two hierarchical regression analyses, one testing the influence of God's knowledge and the other testing the influence of mother's knowledge. In Step 1, we created a base model, in which children's age and parents' prayer flexibility were used as predictors. (Note: The base model is the same for each model tested in Step 2.) In Step 2, we tested two additional models, each of which added children's assessment of the relevant agent's knowledge (i.e., mother or God). The regression models can be found in Table 3.

Age & Parent Prayer Flexibility. Model 1, which included age and parent views of prayer flexibility (entered hierarchically), was significant, R^2 = .16, $R^2_{adjusted}$ = .16, $F(2, 179) = 17.59$, $p < .001$. Controlling for parents' prayer flexibility, children's age was a significant predictor of their prayer flexibility, β = −.32. As indicated in the correlational analyses, older children were less flexible than younger children regarding how prayer could be performed. Controlling for children's age, parents' prayer flexibility was also a significant predictor of children's prayer flexibility, β = .23; children were more flexible if their parents were more flexible.

Agent Knowledge. Model 2 examined the influence of children's assessment of God's knowledge controlling for age and parents' prayer flexibility. God's knowledge did not significantly predict children's prayer flexibility, β = −.06, and Model 2 did not explain more variance than the base model, $\Delta R^2 < .01$.

Model 3 examined the influence of children's assessment of their mother's knowledge controlling for age and parents' prayer flexibility. Mother's knowledge significantly negatively predicted children's prayer flexibility, β = −.20. Children who attributed more limited knowledge to their mothers were less

TABLE 3 *Regression analyses predicting children's prayer flexibility*

				95% CI for *B*			
	B	*SE B*	β	Lower	Upper	*Adj. R²*	*ΔR²*
Model 1						.16**	
Child's age	−.63	.14	−.32**	−.89	−.36		
Parents' prayer flexibility	.19	.06	.23**	.08	.30		
Model 2						.15**	.003
Child's age	−.62	.14	−.31**	−.89	−.35		
Parents' prayer flexibility	.19	.06	.24**	.08	.31		
God's knowledge	−.22	.26	−.06	−.73	.30		
Model 3						.19**	.034*
Child's age	−.50	.14	−.25**	−.78	−.22		
Parents' prayer flexibility	.20	.06	.24**	.09	.30		
Mother's knowledge	−.76	.27	−.20*	−1.30	−.22		

Note. * $p < .05$; ** $p < .01$.

flexible about prayer actions. Model 3 explained significantly more variance than the base model, $\Delta R^2 = .03$. In summary, children's assessment of their mother's knowledge, but not God's knowledge, predicted their views about the flexibility of prayer actions above and beyond their age and parents' understanding of prayer.

Prayer Context

As children's views on mother's knowledge, but not God's knowledge, was predictive of their prayer flexibility, the final set of analyses examined whether children view prayer as a social behaviour performed with others or a solitary action that can be performed alone. The means and standard deviations of children's prayer-alone and prayer-with-others variables can be found in Table 4. A paired-samples *t*-test compared if children thought prayer could be performed alone or with others, and revealed a moderate significant effect. Children were significantly more likely to endorse the claim that prayer could be performed with others than that prayer could be performed alone, $t(181) = 5.48$, $p < .001$, $\eta_p^2 = .14$. Thus, children viewed prayer as more of a social behaviour than a solitary behaviour. There was no significant correlation between

TABLE 4 *Correlations, means, and standard deviations for prayer context*

	Prayer context	
	Alone	**With others**
***M* (*SD*)**	**0.16 (1.69)**	**1.06 (1.39)**
Correlation with:		
Children's age	.08	.14†
Children's prayer flexibility	.14†	.13†
Mother's knowledge	–.08	.09
God's knowledge	–.25**	–.02
Parents' prayer flexibility	.07	.04

Note. †$p < .10$; *$p < .05$; **$p < .01$.

these two variables, $r = -.02$, *NS*, indicating children's views of prayer as solitary or social behaviours were unrelated to one another. When the relationships between children's prayer context attributions and other variables were examined, only one significant correlation emerged. There was a moderate, negative correlation between children's assessment of God's knowledge and their agreement that prayer could be performed alone. In other words, children who were more certain that God has unlimited knowledge were more likely to believe that prayer can be performed alone.

Discussion

The present study examined how children's developing understanding of mental states (both human and supernatural) influences their beliefs about whether prayers have to be performed in a particular way. Children from a variety of religious and non-religious backgrounds were asked whether people could perform a prayer using unconventional behaviours (e.g., standing on one's head). Children also completed standard agent knowledge tasks (Wellman & Liu, 2004) for their mother and God. Parents additionally indicated their views about praying while using unconventional actions. Each of the findings are discussed below.

Agent Knowledge

To examine the influence of children's theories of God's mind and human minds, we tested two hypotheses about the relation between children's views on prayer flexibility and their developing understanding of humans' and God's knowledge. The first hypothesis predicted children's attribution of limited knowledge to God leads to decreased flexibility about prayer behaviours. This pattern would imply that children view conventional prayer behaviours as communicating to God that a person intends to be praying. However, in contrast to this hypothesis, children's views on prayer flexibility were unrelated to their views about God's knowledge.

This lack of a relationship is probably due to the fact that children generally attributed unlimited knowledge to God, regardless of age. Children's view of God as having unlimited knowledge implies God has access to the mental state of the prayer practitioner and the behaviours themselves are irrelevant for God's understanding. In other words, regardless of the behaviours in which the practitioner is engaged (e.g., standing on one's head), God will still know that one is engaged in prayer. This interpretation supported Barrett's (2002) finding indicating that people are more flexible in how a ritual must be performed if they believe that the related supernatural agent is omniscient. The findings of the present study suggest children have a similar understanding.

The second hypothesis predicted children's attribution of limited knowledge to their mother leads to decreased flexibility about prayer behaviours. This pattern would imply that children view conventional prayer behaviours as cues that communicate to others their intention to pray. This hypothesis was supported. Controlling for age and parents' prayer flexibility, children who attributed limited knowledge to their mother were more likely to claim prayer was inflexible. Considering these two findings together, the study suggests that children view prayer behaviours as important for communicating their intentions to pray to other humans, but not to God.

Given the relation between children's theories of human minds and their beliefs about prayer flexibility, we also assessed whether children view prayer as an activity done with others or alone. Children were more likely to claim that prayer could be performed with other people than alone. This suggests that preschoolers seem to view prayer as a social behaviour, and do not yet view prayer as a solitary form of communication with God. Interestingly, children's responses to whether prayer could be performed with others or alone were uncorrelated. This suggests that children's concepts of the solitary and social contexts of prayer are distinct, and not polar ends of the same dimension of prayer activity. Indeed, many children believed that prayer could be

performed both alone and with others, and future research should consider how children's views on prayer in these different contexts are similar to and different from each other.

The Effect of Age

Factors other than children's concepts of human knowledge were also related to children's views on prayer flexibility. Children's age remained a significant predictor of flexibility in every regression model, such that age and children's prayer flexibility were negatively related. When children were closer to 3.5-years-old, they were more flexible in how prayer could be performed, indicating people could pray while doing the splits or standing on their head. When children were closer to 6-years-old, they were less flexible in how prayer could be performed. This finding contradicts previous research documenting increases in flexibility about ritual performance with age. Specifically, Richert (2006) found that 7- to 12-year-old children had higher ritual flexibility than 5-year-old children.

One possible explanation for the difference in findings is that the development of ritual flexibility may be non-linear. In the Richert (2006) study, the less flexible 4- to 6-year-old children were aggregated into a single group; thus, the participants in the current study fell within the youngest age range in Richert's (2006) study. It is possible that children become increasingly inflexible over these years, with a peak in inflexibility around age 5 or 6 followed by a decrease in inflexibility (i.e., increase in flexibility) during middle childhood. Given that children's views on the human mind were related to flexibility in the current study and adults' ritual flexibility is related to whether they believe a supernatural agent has omniscience (Barrett, 2002), one possibility is that children's understanding of prayer shifts as they achieve a firm grasp on the limitations of human minds. This shift may occur from focusing on the mental states of the other people engaged in prayer with the child to the mental states of the agent to which the prayers are directed. This interpretation is supported by the finding that children who view praying alone as a possible context of prayer also are more likely to say that God has omniscience. Thus, children's shifting flexibility in regards to ritualized prayer actions may be related to children's experiences of praying alone, which likely become increasingly common over middle childhood and likely varies by religious tradition.

Another possible explanation is that children may conceptualize prayer as a different type of behaviour than other kinds of religious rituals. Richert (2006) specifically asked Christian children about a baptism, and theoretical work on religious rituals typically differentiate prayer from other religious behaviour in that each are conceptualized differently (McCauley & Lawson, 2002). Religious

behaviours and rituals are both conceptualized as having a practitioner and a behaviour, but only rituals also have an object/person upon which the behaviour is performed (e.g., a priest blesses water). As different conceptualizations may lead adults to view prayer as different from other kinds of religious rituals, future research should consider the extent to which children come to make this distinction, and the developmental and cultural mechanisms that lie behind it.

Parents' Prayer Flexibility

Regarding parental influences on children's views of prayer flexibility, although parents were generally more flexible about the prayer behaviours than children (supporting the non-linear developmental trajectory in flexibility outlined above), parents' and children's prayer flexibility were positively related after controlling for child age. When parents were inflexible about how prayer could be performed, they generally had children who were inflexible about how prayer could be performed. This positive relationship suggests potential mechanisms of socialization of children's learning about prayer.

For example, parents who viewed prayer behaviours as helping the practitioner think about God had children who were less likely to view prayer behaviours as critical for God to understand the content of a prayer (Richert et al., 2016). Given that parents were most likely to view prayer behaviours as facilitating contemplation of God, it is possible that parents are not emphasizing the behaviours as important for communication with God when engaging in prayer with their children. The current findings suggest that children interpret parents' inflexibility about prayer actions as facilitating the social context of prayer, but not communication with God directly. Thus, there is a need for research examining how social and cultural processes support children's internalization of their parents' concepts of religious behaviour.

Prayer as a Form of Communication

In summary, the primary finding of the present study was that children's prayer flexibility was related to their understanding of their mother's knowledge, but not God's knowledge. Given that past research has suggested a relationship between children's understanding of prayer and their understanding of ordinary communication (Woolley & Phelps, 2001), the present findings suggest two (non-mutually-exclusive) possibilities in how children conceptualize prayer during the preschool years.

First, children may view prayer as a form of communication that can exist between any pair of agents, not just between a human and God. If prayer was conceptualized as only happening with God, then what their mother could or

could not comprehend from the actions of prayer would be inconsequential. In a private conversation between the child and God, the mother's awareness that the child is praying does not matter. An implication of these findings is that children do think their mother's awareness is important; thus, it may be the case that children view prayer as a form of communication that can happen with the mother as well.

Second, preschoolers may view prayer as a group activity as opposed to a solitary exercise. This interpretation is supported by the relation between children's increasing attribution of limited knowledge to humans and increasing inflexibility about how prayers must be performed, as well as the view that prayer is more likely to be performed with other people than performed alone. However, in a private conversation with God, others' awareness that one is praying is not necessarily important. Thus, the present findings suggest preschoolers may view prayer as a group activity in which everyone must communicate to everyone else that they are engaged in prayer. Children may only later come to understand prayer as one-on-one communication with God, rather than as a three-way conversation between themselves, God, and whoever else is around. This potential developmental progression is important because religion, for the child, transforms from a series of shared experiences with the family and community to an internalized belief system that often includes a personal relationship with a deity. Given that parental views on prayer are related to children's views on prayer, future research should explore the role that differences in views on prayer in differing religious traditions plays in children's understanding of prayer.

Limitations and Future Directions

In addition to future research directions noted throughout the discussion, some limitations to the current study point to ways in which these findings could be extended in future studies. A key limitation to the present study was that it assessed children's view of prayer behaviours only through flexibility. Although the links between children's flexibility and their understanding that humans have limited knowledge suggest they view these actions as serving the function of communicating their prayer intentions to other people, future research should measure more explicitly how children view the actions of prayer as facilitating (or not) their communication with God. Other findings suggest that children think the actions of prayer serve a variety of functions, like helping God hear the prayer; however, children primarily view conventional prayer actions as helping the person who is praying to think about God (Richert et al., 2016). Future studies could measure whether children additionally view the actions of prayer as communicating with others.

A second limitation is that the present study did not directly assess how parents' concept of prayer was transmitted to children. Parents teach their children directly through testimony, but also indirectly, through the child observing how the parent acts and talks about prayer. Future research should explore the means by which parents' concepts are transmitted and how other socio-cultural factors influence children's understanding of prayer.

Conclusion

The pattern of findings in the present study suggests that across four religious backgrounds, preschool-aged children view prayer as a form of communication that needs to be performed in traditional ways. Children's attribution of inflexibility to prayer is predicted by their understanding of their mother's knowledge (but not God's knowledge), their age, and their parents' own attribution of inflexibility. As children come to understand that their mother's knowledge may be limited, children stressed the importance of performing prayer conventionally. Specifically, once children understand their mother would not know of their intention to pray if they are standing on their head, children increasingly indicate that prayers must be performed traditionally. On the other hand, children's understanding of God's knowledge is unrelated to views about flexibility in behaviours associated with prayer; because, children attribute infallible knowledge to God. The implication is that preschool children view the behaviours of prayer as a way to communicate to other people (rather than God) that one is engaged in prayer. In this sense, the set of immutable behaviours that constitute prayer are the only way to let other religious practitioners know that one is praying; except for God, because God is already in on the conversation.

References

Barrett, J.L. (2002). Smart gods, dumb gods, and the role of social cognition in structuring ritual intuitions. *Journal of Cognition and Culture*, *2*, 183–193. doi: 10.1163/1568537026022508o.

Barrett, J.L., & Lawson, E.T. (2001). Ritual intuitions: Cognitive contributions to judgments of ritual efficacy. *Journal of Cognition and Culture*, *1*, 183–201. doi: 10.1163/156853701316931407.

Barrett, J.L., Newman, R.M., & Richert, R.A. (2003). When seeing is not believing: Children's understanding of humans' and non-humans' use of background knowledge

in interpreting visual displays. *Journal of Cognition and Culture*, *3*, 91–108. doi: 10.1163/156853703321598590.

Barrett, J.L., Richert, R.A., & Driesenga, A. (2001). God's beliefs versus mother's: The development of nonhuman agent concepts. *Child Development*, *72*, 50–65. doi: 10.1111/1467-8624.00265.

Humphrey, C., & Laidaw, J. (1994). *The archetypal actions of ritual: A theory of ritual illustrated by the Jain rite of worship.* Oxford: Clarendon Press.

Knight, N., Sousa, P., Barrett, J.L., & Atran, S. (2004). Children's attributions of beliefs to humans and God: Cross-cultural evidence. *Cognitive Science*, *28*, 117–126. doi: 10.1207/s15516709cog2801_6.

Lane, J.D., Wellman, H.M., & Evans, E.M. (2010). Children's understanding of ordinary and extraordinary minds. *Child Development*, *81*, 1475–1489. doi: 10.1111/j.1467-8624.2010.01486.x.

Lane, J.D., Wellman, H.M., & Evans, E.M. (2012). Sociocultural input facilitates children's developing understanding of extraordinary minds. *Child Development*, *83*, 1007–1021. doi: 10.1111/j.1467-8624.2012.01741.x.

Long, D., Elkind, D., & Spilka, B. (1967). The child's conception of prayer. *Journal for the Scientific Study of Religion*, *6*, 101–109. doi: 10.2307/1384202.

McCauley, R.N., & Lawson, E.T. (2002). *Bringing ritual to mind: Psychological foundations of cultural forms*. Cambridge University Press.

Milligan, K., Astington, J.W., & Dack, L.A. (2007). Language and theory of mind: Meta-analysis of the relation between language ability and false-belief understanding. *Child Development*, *78*, 622–646. doi: 10.1111/j.1467-8624.2007.01018.x.

Pew Forum on Religion & Public Life. (2008). *U.S. Religious Landscape Survey*. Washington, DC. Retrieved from http://www.pewforum.org/2008/06/01/u-s-religious-landscape-survey-religious-beliefs-and-practices/.

Richert, R.A. (2006). The ability to distinguish ritual actions in children. *Method & Theory in the Study of Religion*, *18*, 144–165. doi: 10.1163/157006806777832850.

Richert, R.A., & Barrett, J.L. (2005). Do you see what I see? Young children's assumptions about God's perceptual abilities. *The International Journal for the Psychology of Religion*, *15*(4), 283–295. doi: 10.1207/s15327582ijpr1504_2.

Richert, R.A., & Granqvist, P. (2013). Religious and spiritual development in childhood. In R.F. Paloutzian & C.L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (2nd ed., p. 2013). New York, NY: Guilford Press.

Richert, R.A., & Lillard, A.S. (2004). Observers' proficiency at identifying pretense acts based on behavioral cues. *Cognitive Development*, *19*, 223–240. doi: 10.1016/j.cogdev.2004.01.001.

Richert, R.A., Shaman, N.J., Saide, A.R., & Lesage, K.A. (2016). Folding your hands helps God hear you: Prayer and anthropomorphism in parents and children. *Research in the Social Scientific Study of Religion, 27, ##–## pages.*

Spilka, B., & Ladd, K.L. (2013). *The psychology of prayer*. New York, NY: Guilford Press.

Tregay, J., Gilmour, J., & Charman, T. (2009). Childhood rituals and executive functions. *British Journal of Developmental Psychology, 27*, 283–296. doi: 10.1348/026151008x299737.

Wellman, H.M., Cross, D., & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development, 72*, 655–684. doi: 10.1111/1467-8624.00304.

Wellman, H.M., & Liu, D. (2004). Scaling of theory-of-mind tasks. *Child Development, 75*, 523–541. doi: 10.1111/j.1467-8624.2004.00691.x.

Woolley, J.D., & Phelps, K.E. (2001). The development of children's beliefs about prayer. *Journal of Cognition and Culture, 1*, 139–166. doi: 10.1163/156853701316931380.