

Parental Demographics and Preschool Children's Theory of Mind

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ABSTRACT This research investigates the difference between theory of mind (ToM) and parental demographics of preschool children. One hundred and sixty six 3.6- to- 5.6 year old children were tested on three standard false belief tasks and a verbal ability test. A significant difference was found between mother's occupational status and ToM. However, hierarchical regression analysis showed that mother's occupational status was a significant predictor of children's ToM development after controlling for age and verbal ability.

I. INTRODUCTION

Children development of theory of mind (ToM) has been studied over the past 20 years (Flavell 1999). It is striking that the term *ToM* was first used in psychological literature by Premack and Woodruff (1978). When children's ToM develops, they become aware that human behavior is guided by mental states of belief, knowledge, memory and imagination that may conflict with overt reality (McAlister and Peterson 2007). Baron-Cohen et al. (1985) stated that ToM is the understanding that persons have mental states, such as thought, desires and beliefs that represent or misrepresent the phenomena of the world. ToM is also the ability to use these mental states to predict, explain and understand people's behavior. Empirically, a child's level of ToM understanding is usually measured using experimental tests of awareness of mental representation. The most widely used litmus tests for assessing ToM development are false belief tasks. In one of the classic ToM task (Baron-Cohen et al. 1985), a boy by the name Sally has a doll; Sally hides the marble in the basket and leaves the room. After that, another doll by the name Anne moves the marble from the basket to the box. Sally comes back and wants to play with the marble, then the child is asked some questions "where did Sally look for the marble?" Following this, a memory question is asked: *where is the marble really?* This study suggests that children know the true state of affairs. While they predict the behavior of protagonists

(humans, puppets or storybook figures), they also hold the false belief about them (McAlister and Peterson 2006).

Moreover, there is marked variation in the particular age at which children achieve success on false belief tasks. Some children master false belief understanding many months ahead of others. Some children succeed at 3 years of age and others not until 5 years of age (Jenkins and Astington 1996). Wellman et al. (2001) conducted a meta-analysis based on the performance of preschool children on false belief understanding. They found that a majority of 3 year olds performed at chance, or below, on false belief tasks whereas, by age 5, success was so widespread across all tasks variations. This lead Wellman et al. (2001) to suggest that understanding of belief and mind reveal genuine conceptual changes during the preschool years. So, what might account for these differences in ToM development? Some of the researchers have begun to address factors producing individual differences in ToM development. However, previous researchers, for instance, have found relationship between ToM and language (Jenkins and Astington 1996), older but not younger siblings and ToM development (Ruffman et al. 1998), number of sibling and ToM (Jenkins and Astington 1996; Peterson 2000), and also executive function (the higher order cognitive functions that underpin goal-directed behavior; e.g., working memory and inhibitory control) and ToM (Carlson and Moses 2001; Hughes et al. 1998).

Cross-sectional studies, which have examined the link between parental background and ToM, have been inconclusive. For instance, Cutting and Dunn (1999) found a positive link between maternal education and ToM. Hughes et al. (1999) found an association between socio-economical status (SES) and ToM, although this association was no longer significant when language ability were taken into account. In addition, McLoyd (1998) reported that families with low income are linked with lower child IQ and lower academic achievement, and this leads to lower ToM performance. Moreover, Murray et al. (1999) study on 125 same sex twins failed to find a significant relationship between false belief and social class.

The findings of studies on parental demographic background and ToM development are few and somewhat inconclusive. Studies have examined mother and father's educational levels as a separate variable (Cutting and Dunn 1999), however, in the present study, mother and father's educational levels have been considered as two different variables. The present study tries to clarify the link between parental demographic variables (mother's educational levels, father's educational levels, family income and mother's occupational status) and ToM development in different population (Iran). This research seeks to provide new insight on the parental demographic characteristics in children's ToM development. In addition, this paper investigates the pattern of ToM development among Iranian preschool children and whether family backgrounds influence ToM development among them. On the other hand, this paper investigates if there is any significant difference between family background and ToM development. To investigate this question, we compare the children's performance on ToM with family demographic characteristics. In addition, the second aim of the study is to determine the relationship between ToM and verbal ability in preschool children.

Children's development of ToM can be viewed from three theoretical perspectives. They are simulation theory (Harris 1992 cited by Flavell 1999), module theory (Leslie 1988 cited by Flavell 1999), and the third one is theory-theory (Gopnik and Meltzoff 1997 cited by Flavell 1999). Theory-theory postulates that that experience has a seminal role in ToM development. On the other hand, theory-theory posits that we acquire ToM from our experience. In the current study, the

theoretical framework of theory-theory (Gopnik and Meltzoff 1997, cited in Flavell 1999) was utilized.

II. METHODOLOGY

Participants

One hundred and seventy typically developing preschool children, with no hearing or psychotherapy medication problems according to the parent's reports from various kindergartens in an urban city of Sanandaj (Kurdistan) were selected using simple random sampling method. Five of the children did not cooperate with the experimenter and two of the respondents were single parent. For the sake of sampling homogeneity, these two cases were excluded from the study analysis. The sample consisted of 166 pre-school children with a mean age of 54.39 (S.D. = 5.877) and ages ranging from 43 to 66 months. Ninety-nine of them were boys and 67 were girls. The majority of the parents are middle class income earners, earning between USD250 to USD500 considered as middle class family. Almost half of the parents had university education.

Procedure

One hundred and seventy parents who had children aged from 43 to 66 months were invited for a meeting. The researchers explained the details of the study to the parents. Children, parental demographic background and parental consent questionnaires, were distributed to be filled out by the parents. Two different measures were administered namely, false belief tasks for assessing ToM development and McCarthy Scale of Children's Ability to tap verbal ability of preschool children. The children were asked to do both the tasks. After a lapse of fifteen days, the tests were repeated. The reliability of ToM tasks and McCarthy Scale of Children's Ability by using test-retest method was 7.41 and 8.92 respectively. The length of time between the first and the second test was 15 days.

The tests were administered individually in a quiet room free from visual and auditory distractions in each kindergarten. The tests, which lasted up to 25 minutes per child, took eleven weeks to complete. During the process of testing, parents were allowed to enter the testing room, and to be with their children. The researchers recorded the

child's responses. The tests were administered in a standard sequence designed from easiest to hardest, in order to increase the child's motivation. Between the tests and during the assessment sessions, ten-minute breaks were taken for the children who did not have patience to sit for a long period. Children were allowed to discontinue the testing processes at any time and this happened to five of the children. In cases where the test was not completely administered in one session, a second testing session was conducted within a week or two. At the end of testing session, all the children were given a small toy as a token of appreciation for participating in the study

MATERIALS

In this study four instruments were used.

False Belief Location Transfer Task (Sally and Anne)

The first instrument used for assessing ToM was from Baron-Cohen et al.(1985) is the "Sally and Anne task". The instrument was adopted by changing the name Sally and Anne to Ahmad and Fatima. Besides this, in the original instrument, a marble was used for the activity but in this study, the researchers replaced it with a ball.

The Task

A boy named Ahmad has a ball. He plays with the ball for a while and he gets tired. He puts the ball away in the box. He goes downstairs (disappears from view). While he has gone, his sister named Fatima takes the ball out of the box. Fatima plays with the ball for a while, and then she plays a trick on Ahmad. She puts the ball away in the basket and goes outside. Ahmad comes back. He wants to play with his ball again. The children were then asked the false belief question, "Where will Ahmad look for the ball?" followed by memory question "Where did he put the ball before he went downstairs?" and "Where is the ball really?" Each correct test question response earned 1 point. A maximum total of 2 points are scored for this task.

False Belief Task – Red / blue Box (Change of Location)

A second instrument that was used is the Red/

Blue Box. In this false belief task, the previous scenario about Ahmad and Fatima was repeated using a new location. In this task, one red box, one blue box, and a piece of chocolate and two dolls were used. One boy has a blue box and has some chocolate in it. He takes the chocolate from the blue box, eats some of it and put the rest in the same box. Then he goes downstairs. While he has gone, his sister takes the chocolate out from the blue box and then puts it in the red box. Then she goes outside. The boy comes back. He wants to eat some chocolate. The children were asked False Belief question "Where will the boy look for the chocolate first?" this was followed by the control or Memory questions, "Where did he put the chocolate before he goes downstairs? And where is the chocolate really now?" Each correct test question response earned 1 point. A maximum total of 2 points are scored for this task.

False Belief Task / Crayon Box /Sticker or Change of Content

A third instrument was the Crayon Box/Sticker. This task was modeled on the version used by Gopnik and Astington (1988). Children were shown a Crayon box that held stickers. The child was initially shown the closed box and were asked look at the box "what do you think is inside the box?" Then the box was opened to reveal inside the box, he found stickers not crayon. Then the box was closed again, and the child was asked again", now what do you think is inside the box?" then next false question were asked. The first false question concerned children's understanding that they themselves had previously held a false belief. Children were asked," what did you think is inside the box when you first saw it?" The second false belief question concerned children's understanding of another person's false belief. For this question, children were asked to name a best friend, and then were asked," Imagine your friend (friend's name) comes in and sees this box. "What will (friend's name) think is inside the box?" If children did not answer one or more of these questions, a forced choice question were asked, for example, "Will he think it is got crayons or will he think it is got stickers? When children passed two control questions, it was clear that they realized the story. Each correct test question response earned 1 point to a maximum total of 2 points for the task.

Scoring of the False Belief Tests

False belief answers will be correct only if memory check answer is also correct. Consequently, if a child gets any memory check question incorrect then score of zero will be given. If a child gets the memory check and false belief (FB) question correct then he will be given a score of two for each task. Children have to get false belief questions correct, along with the memory check to be given credit. Otherwise, they will score zero on the false belief task. Therefore, a score of two means they had passed both false belief task and memory check questions. A score of zero meant that either they had the memory check question incorrect, or one of the two false belief questions incorrect. A child's total score could range from zero to six.

McCarthy Scales of Children's Ability (MSCA)

A fourth instrument used in this study is the McCarthy Scales of Children's Ability (McCarthy 1972). This instrument was used to tab verbal ability of children and consists of five sub-scales. The child was asked to respond with one-word answers (pictorial memory as described below), phrases, and sentences to a variety of items. The tests in the verbal scale are described below:

1-Pictorial Memory: The child is shown a card, which has six colored pictures of familiar object. The examiner names the objects aloud during a 10-second exposure, after which the card is removed and the child tries to recall the objects. 1 point for each object correctly recalled.

2-Word Knowledge: Part 1, picture vocabulary, it requires the child to demonstrate his understanding of the spoken language of others by pointing to five objects and naming four additional objects, all pictures on card. Therefore, 1 point was given for each card that the child gave an acceptable response. Part 2, oral

vocabulary, consists of 10 words given in the usual manner. They are graded in difficulty, and range from concept, familiar words to abstract concept. Therefore, 2 points were given if the child describes the words in term of use. The child was given 1 point if he describes the word incompletely and zero was given if the child response was similar to 0-point sample.

3-Verbal Memory: This test is graded series of words and sentences to be repeated by the child. The first two items contain concrete concept likely to be within the child-understood vocabulary, the next two items contains two syllable words, which are more abstract in meaning, and the last two items are full sentences. Therefore, 1 point was given for each word, which was repeated by the child, and 1 point was deducted if the sequence of the words were changed.

4-Verbal Frequency: This test measures the child's ability to classify and think categorically. He has to think quickly of words falling into each of four categories (things to eat, animal to name...) and name as many words as he can in 20 seconds. 1 point was given for each acceptable response, up to maximum of nine for each item.

5-Apposite Analogies: The child provides the opposite of the key words in each of the nine statements spoken by the examiner. 1 point was given for each correct response and zero for incorrect response.

III. RESULTS

Table1 shows the frequency distribution of the family background. There is difference between the data of the present study and the previous ones (Pears and Moses 2003). The data of the present study are categorical data, on the other hand, the scale of measurement of the parental demographic variables are nominal and ordinal, but most data of the previous studies were continues (interval/ratio) data. Two of the

Table 1: Frequency distribution of family backgrounds

Variables family income	F	(%)	Variables father's educational level	F	(%)	Variables mother's educational level	F	(%)	Variables mother's occupat- ional status	F	(%)
Less than 249\$	8	(4.8)	No diploma	5	(3.0)	No diploma	7	(4.0)	Housewife	51	(32)
250-499\$	61	(36.7)	Diploma	63	(38.0)	Diploma	96	(57.8)	Employee	108	(68)
500-749\$	47	(28.3)	Bachelor	70	(42.0)	Bachelor	49	(29.5)	-	-	-
750-999\$	18	(11.0)	Master and PhD	26	(16.0)	Master and PhD	12	(7.0)	-	-	-
More than 1000\$	30	(18.0)	-	-	-	-	-	-	-	-	-

Note: Percentage is in parenthesis. Mother's O S= Mother's occupation status

families did not fill out the family income question and two of them did not answer father's educational level. Four of them did not complete the mother's educational level and lastly seven of them did not reply to the mother's occupational status questions. Table 2 shows the mean and standard deviations of composite score of ToM, verbal ability, age, false belief questions, and control questions. Children performance on control questions were also analyzed ("where is the ball now" and "where is the chocolate now"? "Where was the ball in the beginning"? "Where was the chocolate at the beginning"? One hundred and six (64%) of the control tasks were completed by the children.

Eighteen (11%) of the children passed only one control question and 32 (20%) passed two control questions. Only seven (4%) got zero to all control questions. Thirty-five (21%) of the children got zero to the false belief questions, and 35 (21%) of the children passed only one of the false belief questions and 37 (22%) passed two of the false belief questions, and finally, 56 (34%) of them passed all false belief tasks. However, 53 (32.5%) of the children passed false belief and control questions, only 3 (2%) of the children got zero to all false belief and control questions. Table 3 shows the frequency distribution of the children's ToM performance based on parental characteristics.

Dalke (1995) showed that 71% of the participants with mean age of 4-1 passed false belief task. In addition, thirteen (43%) of the 3 year olds correctly answered the false belief questions. Moreover, Astington and Jenkins (1996) tested 68 children between the ages of 3 to 5.6 years with four different false belief tasks. The findings showed that 37% of them passed all four tasks, 10% passing three, 16% passing two, 10% passing one, and 27% passing none of them. T-test showed that there is a significant difference between mother's occupational status and ToM $t = -2.23$, $p = .05$. The mean of employed mothers

Table 2: Mean and standard deviation of ToM*, verbal ability*, age, FB*, and CO*

Variables	Mean	SD
ToM	4.27	1.61
Verbal ability	59.88	12.928
Age in month	54.46	5.70
FB	1.70	1.155
CO	2.45	.855

ToM* = theory of mind; FB* = false belief question; CO* = control questions

Table 3: Frequency distribution of ToM performance based on parental demographics

Variables family income	P		0		Variable father's edu level		P		0		Variable mother's edu level		P		0		Variable mother's O S		P		0	
	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
Less than 249\$	2	(25%)	0		No Diploma		3	(50%)	0		No Diploma		4	(57%)	0		Housewife		8	(16%)	1	(2%)
250-499\$	16	(31%)	2	(3%)	Diploma		19	(27%)	2	(31%)	Diploma		26	(27%)	2	(2%)	Employee		43	(40%)	2	(2%)
500-749\$	14	(30%)	1	(5%)	Bachelor		22	(31%)	0		Bachelor		15	(30%)	1	(2%)	-		-		-	
750-999\$	2	(11%)	0		Master and PhD		7	(26%)	1	(4%)	Master and PhD		5	(50%)	0		-		-		-	
More than 1000\$	14	(47%)	0		-		-		-		-		-		-		-		-		-	

P = the children who got perfect score of ToM; 0 = the children who got zero score of ToM

($M=4.47$, $SD=1.62$) was higher than the mean of housewife mothers ($M=3.86$, $SD=1.52$). Generally, Turkey's test (at .05 significance level) showed no significance difference between mother's educational level and ToM, $F(3,155)=1.243$, $p=.296$. In addition, Turkey's test showed that no significant difference was found between father's educational level and ToM, $F(3,157)=.588$, $p=.624$. In addition, no significant difference was found between family income and ToM, $F(4,156)=1.919$, $p=.110$.

T-test was done to determine the significant difference between gender of the children and ToM. The result showed that no significant difference was revealed between ToM and gender, $t=-.429$, $p=.668$. Furthermore, Pearson Product Moment Correlation showed that a significant and positive relationship was found between ToM and verbal ability, $r(163)=.502$, $p<.05$. The question is raised whether the demographic variables would have distinctive contribution to children's ToM over and above age and verbal ability. A hierarchical regression analysis was conducted to answer to the question.

Before, conducting hierarchical regression analysis, mother's occupational statuses were all converted to dummy variables to have the qualification of regression analysis, and then added to the equation. Thus, ToM was entered as dependent variable, while age and verbal ability were entered as the first step in the equation, multiple $R=.541$, $F(2,153)=31.67$, $p<.05$. Therefore, age and verbal ability had 29.3% contribution in ToM development. In the second step, according to the previous literature (Pears and Moses 2003), all the demographic variables (Mother's occupational status) was entered in the regression, so, the addition of mother's occupational status produced a significant increment in R^2 , thus, multiple $R=.566$, $F(1,152)=6.262$, $p<.05$. Demographic variables had 2.8% contribution on ToM (see Table 4).

IV. DISCUSSION

The major goal of the study is to clarify the difference between ToM development and parental demographic variables. One of the strong points of the study is that the study considered demographic variables as separate variables (mother's educational level, father's educational level, family income, and mother's occupational status). Although, ANOVA showed no significant difference between ToM and mother's educational level, father's educational level and family income, hierarchical regression analysis revealed a significant contribution of parental demographic variables (mother's occupational status) on ToM over and above age and verbal ability. The findings of the study are consistent with Pears and Moses (2003). More specifically, as depicted in table 3, regression analysis showed that mother's occupational status had a significant contribution to ToM development, and it was supported by t-test that the children of employed mother had a better performance on ToM development compared to housewife mothers. One possible explanation might be the quality of relationship between mothers and their children and the amount of time that mothers may spend with their children. In addition, the employed mothers may talk more about the mental states and feelings with their children.

Thirty (19%) of the sample ($N=166$) are mothers with diploma but are only housewives and 59 (37%) of the mothers had diploma and are employed, and 10% (16) of the mothers have bachelor degree and are only housewives, and 33 (21%) of the mothers have bachelor degree and are employed. Anderson et al. (1996) found out that low maternal education is linked with low IQ and thus might indirectly affect ToM development, but in the present study, very few of the parents had no diploma (lower educational level). The majority of the mothers who hold

Table 4: Regression analysis for ToM and demographic variables

Step/Variables	Unstandardized B	Std. Error	Standardized Beta	R	R ²	R ² Inc	p
Step1							
Age*	.059	.020	.207	.541	.293	.293	.001*
Verbal ability*	.058	.009	.463				
Step 2							
Mother's occupation status*	.580	.232	.168	.566	.321	.028	.013*

* $p<.05$

diploma made a significant contribution on ToM development. Jenkins and Astington (1996) found out that maternal education is positively associated with ToM development. In contrast, Ruffman et al. (1999) did not find any link between ToM development and maternal education that is in line with the current study. The possible explanation might be that the mother who have diploma might have part time job and they may have more time to spend with their children. Jenkins and Astington (1996) indicated that it is the number of the siblings is important for ToM development, thus it will be fruitful for future research to conduct the study with considering number of siblings with parental backgrounds.

Results of the current study revealed a significant and moderate correlation between ToM and verbal ability and it is consistent with longitudinal study of Farrar and Maag's (2002) findings that showed that toddler's language ability at 2 years of age predicted ToM at 4 years of age. The present study is in line with Ruffman et al. (2003) findings that showed that general language ability at 3 years of age predicted belief at 3.6, 4, and 5.6 year of age. Generally, it is suggested that some minimal verbal ability level is necessary for ToM tasks success (Happe 1995). So the children with higher verbal ability have higher ToM development. On the other hand, Astington and Jenkins (1999) found that ToM is dependent on language and not the reverse. There are some possible explanation for the relationship between ToM and verbal ability (VA). In the standard tasks, children have to listen to a story and comprehend this input, process the experimenter's questions about it, and make some responses. So, children may understand the ToM tasks, but because of linguistic complexity of the tasks, they are to demonstrate their understanding in this situation. Thus, the children's linguistic immaturity results in task performance that masks their underlying competence. So, the children need certain levels of verbal ability (VA) across task to be able to pass false belief tasks. It will be useful for the parents and for the kindergartens managers to implement the methods to enhance the verbal ability of the preschool children that it affects on ToM development. The finding of the present study is supported by theory-theory. Theory-theory argues that experience plays a formative role in children's ToM development. On the other hand, theory-theory posits that we acquire ToM from our experience.

It is recommended for future studies investigate the amount of time that mothers spend with their children and how to spend time with children by both housewives and employed mothers. It is recommended that in future studies select the parental education so that all levels of education would be included, this is one of the limitations of the present study, because the samples for participants without diploma (lower educational level) were not enough. On the other hand, 3% of the mothers and 4% of the fathers had no diploma. The study did not consider number of siblings and ToM development in which some other studies (Ruffman et al. 1998) found positive relation between number of siblings and ToM. It would be fruitful for future research to study siblings and ToM for preschooler and schoolchildren. Future studies could also look at the parental discipline strategies as it may have an influence on ToM. In addition, the present results did not take into consideration the role of father's occupational status on children's ToM development as it might have a significant relationship to children's ToM.

V. CONCLUSION

Generally, demographic variables (mother occupational status) had a significant contribution on ToM development in pre-school children. According to the present study, it is concluded that spending more time with children is important for ToM development. Thus, a possible intervention to enhance ToM development may be to teach mothers how to spend time with their children.

REFERENCES

- Anderson HW, Sommerfelt K, Sonnander K, Ahlsten G 1996. Maternal child rearing attitudes, IQ, and socioeconomic status as related to cognitive ability of five years old children. *Psychological Reports*, 79: 3-12.
- Astington JW, Jenkins JM 1999. A longitudinal study of relation between language and theory of mind development. *Developmental Psychology*, 35: 1311-1320.
- Baron-Cohen S, Leslie AM, Firth 1985. Does the autistic child have a "theory of mind"? *Cognition*, 21: 37-46.
- Carlson SM, Moses LJ 2001. Individual differences in inhibitory control and children's theory of mind. *Child Development*, 72: 1032-1053.
- Cutting AL, Dunn J 1999. Theory of mind, emotion understanding, language, and family background:

- Individual differences and interrelation. *Child Development*, 70: 853-865.
- Dalke DE 1995. Experimenting young children's difficulty on the false belief task: Representational deficit or context-sensitive knowledge? *British Journal of Developmental Psychology*, 13: 209-222.
- Farrar MJ, Maag L 2002. Early language development and emergence of a theory of mind *First Language*, 22: 197-213.
- Flavell JH 1999. Cognitive development: Children's knowledge about the mind. *Annual Review of Psychology*, 50: 21-46.
- Gopnik A, Astington JW 1988. Children's understanding of representational changes and its relation to the understanding of false belief and appearance reality distinction. *Child Development*, 59: 26-37.
- Happe FGE 1995. The role of age and verbal ability in the theory of mind task performance of subjects with autism. *Child Development*, 66: 843-855.
- Hughes C, Deater-Deckard K, Cutting AL 1999. Speak roughly to your little boy? Sex differences in the relations between parenting and preschoolers' understanding of mind. *Social Development*, 8: 143-160.
- Hughes C, Dunn J, White A 1998. Trick or treat?: Uneven understanding of mind and emotion and executive dysfunction in 'hard-to-manage' preschoolers. *Journal of Child Psychology and Psychiatry*, 39: 981-994.
- Jenkins JM, Astington JW 1996. Cognitive factors and family structure associated with theory of mind development in young children. *Developmental Psychology*, 32: 70-78.
- McAlister A, Peterson C 2006. Mental playmates: Siblings, executive functioning and theory of mind. *British Journal of Developmental Psychology*, 24: 733-751.
- McAlister A, Peterson C 2007. A longitudinal study of child siblings and theory of mind development. *Cognitive Development*, 22: 258-270.
- McCarthy D 1972. *Manual for the McCarthy Scales of Children's Ability*: The Psychological Corporation Harcourt Brace Jovanovich, INC.
- McLoyd VC 1998. Socioeconomic disadvantage and child development. *American Psychologist*, 53: 185-204.
- Murray L, Woolgar M, Briers S, Hipwell A 1999. Children's social representations in doll's house play and theory of mind tasks, and their relation to family adversity and child disturbance. *Social Development*, 8: 179-190.
- Pears KC, Moses LJ 2003. Demographics, parenting, and theory of mind in preschool children. *Social Development*, 12: 1-20.
- Peterson CC 2000. Kindred spirits influences of siblings' perspectives on theory of mind. *Cognitive Development*, 15: 435-455.
- Premack D, Woodruff F 1978. Does chimpanzee have a theory of mind? *Behavioral and Brain Science*, 1: 515-526.
- Ruffman TJP, Naito M, Parkin L, Clement WA 1998. Older (but not younger) sibling's facilitate false belief understanding. *Developmental Psychology*, 34: 161-174.
- Ruffman T, Perner J, Parkin L 1999. How parenting style affects false belief understanding. *Social Development*, 8: 395-411.
- Ruffman T, Slade L, Rowlandson K, Rumsey C, Garnham A 2003. How language relates to belief, desire and emotion understanding. *Cognitive Development*, 18: 139-158.
- Wellman HM, Cross D, Watson J 2001. Meta-analysis of theory of mind development: The truth about false belief. *Child Development*, 72: 655-684.