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Children's Evaluations of Different Lies by In-group and In-group Members: The Role of Theory of Mind and Executive Function

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Abstract: The purpose of this study was to investigate the influence of lie type and liar's membership attributes on children's evaluation of lies, and to examine the roles of theory of mind and executive function. 89 children aged 5-7 from a kindergarten and a primary school in Jingzhou City, Hubei Province were selected for the experiment (M = 5.94 years old, SD = 0.86, including 43 boys and 46 girls), and each child was asked to listen to four Stories about the protagonist lying, and children were asked to evaluate the protagonist's behavior, after which the children's theory of mind and executive function were measured using the false belief task and the software NIH Toolboxs. It was found that children rated white lies higher than malicious lies, and children rated members within the group higher than members outside the group. Regression analysis found that the development of theory of mind after controlling for children's gender and age negatively predicted children's evaluation of malicious lies in the group, and executive function positively predicted children's evaluation of white lies. To sum up, executive function, theory of mind, lie types, and membership attributes may all affect children's assessment of lies.

Keywords: White lies; Malicious lies; Membership differences; Psychological theory; Executive function.

1. Introduction

Lying is an act in which individuals consciously speak false words in the form of words. Common types of lies include malicious lies and white lies. Children first learn malicious lies that allow them to avoid punishment, which often benefit children themselves and harm the interests of others. With the development of the theory of child psychology, children acquire another form of lies, —— white lies, which are usually prosocial in nature and used to protect others. Children's understanding and evaluation of lies is an important part of the study of children's moral development. Piaget's related research on the evaluation of children's lies found that with the growth of age, the liar's lying intention can affect children's evaluation of lies. Compared with Piaget's conclusions, studies have shown that younger children have used liars' intent to lie as one of the reference elements for lie evaluation [1,2].

Children's evaluation of lies is not only based on the intention of the liar, but also the identity of the liar affects children's evaluation. When the liar is close to children, children's evaluation is significantly higher than that of other children [3]. Previous studies have discussed the influence of lie type or member attribute on the evaluation of children, compared with the combination of two independent variables. It can be learned from previous literature that children's evaluation of antisocial behavior in group members is higher than that of outgroup members' prosocial behavior[12]. However, when these behaviors are non-physical contact lies, children's evaluation of members within and out of the group is unclear.

Other studies have found that the development of psychological theory and executive function has a positive predictive effect on the development of white lies in children [4]. Studies have found that with the development of children's psychological theory, children consider social problems, so they will give better evaluation to members within the group, and with the growth of age, the attributes of members have a greater impact on children's moral evaluation of [3]. Past research on the evaluation of lies showed that their intentions and motives significantly influence children's understanding and evaluation of their lies.

Children aged 4 years old can generally identify others' lies [5]. In order to ensure that children can understand the lies in the experiment, this paper selects children aged 5-7 years for testing. This study examines the effects of psychological theory and executive function in children aged 5-7 years on moral evaluation.

1.1. Children's evaluation of different lie types

Lying motives can be divided into antisocial intent lies and prosocial intent lies [6], which are very common to children in their social process. Anti-social malicious lies are generally intended to help children escape responsibility and to benefit themselves by hurting others. (For example, children who break the teacher's cup but are afraid of the teacher's punishment to tell the teacher were broken by other children), children aged 2 to 3 can already tell such lies, and can understand the moral meaning of malicious lies [7]. Because of the antisocial nature of this type of lie, from a very young age, the teacher emphasized in the moral education of children should not tell this kind of malicious lie, so most children are not willing to tell this kind of malicious lies [8].

Another type of lies is pro-social lies, is those who are told the intention is to help others not to hurt another person's white lies (for example, in front of two toys, see the children like the first, in order to let him get his beloved toys, I can say I don't like the first toy / children lost loved ones, said to him your most dear people went to heaven, a very beautiful place), so is essentially pro-social, but this kind of lies still have deceptive lies. Philosophers and theologians have long debated whether prosocial lies should be morally recognized, often spoken in daily practice (DePaulo & Kashy, 1998), and in previous experiments, such white lies are regarded by

children as the "least serious lie" [2].

Children often show an aversion to malicious lies of an antisocial nature, and give them poor evaluations. Most children give relatively good reviews of white lies that are essentially prosocial ones, but some children still think that even white lies are lies and give lower evaluations. Lying to benefit others or avoid embarrassment is considered less reprehensible than lying to avoid personal harm or generate personal benefit [9,10]. If the purpose of deliberately lying is to harm rather than help others, teenagers and young people think less of lies.

It can be seen in many literature that children's evaluation of lies is influenced by their motivation for lying, and there are significantly different evaluations for malicious lies with antisocial nature and white lies with prosocial nature. Children's evaluation of white lies is significantly higher than that of malicious lies. Moreover, this result was also verified in cross-cultural studies. Chinese and Canadian children have equally negative evaluations of lies about antisocial behavior, which are lower than children's evaluations of lies about prosocial behavior. The difference is that Chinese children are more positively about lies about prosocial behavior than Canadian children [11]. In the Dominic study, antisocial behavior was more strongly [12] than prosocial behavior, while prosocial behavior was more neutral, for example, prosocial behavior shared half of its resources rather than all its resources. So the behavior of the protagonist in the white lie in this study should be more prosocial to avoid children assigning his behavior to neutral behavior.

1.2. Children's evaluation of lying to the inner and outer group members

In addition to the motivation of the liar, there are also many factors that affect children's evaluation of lies. Children will also show differences in moral evaluation in peer relationships. In previous studies, children were still more likely to give better evaluation of within-group members showing aggressive behavior and out-group members showing prosocial behavior.

Children's evaluation will be affected by different types of moral behavior, domestic research children to friends and friends of different lies evaluation data show that in the context of malicious lies, children for the evaluation of friends higher than the friends, but in the context of white lies, children for friends and friends have no significant difference in [13]. However, it is unclear how children include group attributes and lie types in their moral evaluation of others. Whether children still show their preference for group members when they are not friends, but distant members of the school.

In conclusion, this paper will explore children's evaluation of members within the group and members outside the group under different lie conditions.

1.3. Psychological theory, executive function and children's moral evaluation

The development of psychological theory and executive function has a certain degree of influence on children's lying behavior. Studies have shown that training in children's executive functions and theories of psychology can enable the earlier emergence of lying behavior [14]. In the study of children's psychological theory and lying behavior, it is found that 4 and 5 is a critical period for the development of children's false belief, and children who have higher scores in the false belief task can lie more strategically, which shows that the development of children's psychological theory promotes children's lying behavior [5,15]. In the study of cognitive flexibility on lying behavior, it was found that people with higher cognitive flexibility are more good at lying [16].

Lying can be divided into lies with antisocial intention and lies [16] with prosocial intention. In the longitudinal study of the causality of child psychology and executive function and child lying behavior, it is found that the development of lies with different motives in children will be affected by different cognitive factors. The development of pro-social lies in children is influenced by executive function, while the development of antisocial lies is more influenced by both psychological theory and executive function [17].

Psychological theory and executive function affect the development of lies with different motives, and theory of psychology also affects children's evaluation of lies with different motives. Children with higher theory of psychology scores had lower [18] ratings of lies, but in their study, lying motivation was not differentiated. Du Xin's research makes up for this defect, and the results show that the development of psychological theory can positively predict children's evaluation of white lies [4], and children's evaluation of malicious lies is significantly related to [19] with children's age and the ability of language communication. The knowledge flexibility task score can significantly positively predict the incidence of lying behavior in young children, [16], but the impact of executive function on children's moral evaluation remains unclear.

Children's moral evaluation is influenced by many factors such as social and cognitive [20]. Children may give a better evaluation to members of the group because of their social concerns. And with the development of children's psychological theory and executive function, the attributes of members have a greater impact on children's moral evaluation [3]. This paper will explore how the children's psychological theory and executive function will affect the moral evaluation of children under the conditions of different members.

1.4. Questions are raised

In previous studies, it can be found that children have different evaluation of different types of lies. Most of the results of the literature prove that children will give a significantly lower evaluation [1,2,9,10] of malicious lies. The literature points out that the intention of liar influence children for white lies moral evaluation, when liar lies for altruism motive, children will give better evaluation, this may be due to the development of psychological theory and executive function of children can understand the intention of others white lies, so older children give the evaluation of white lies better [1]. And children's moral evaluation is not only determined by the level of cognitive development, social factors play a very important role. The identity of the liar, the ability to empath, the presence of authorities and other factors can affect children's moral evaluation of white lies [21]. When lies conflict with interest within the group, children will give a lower evaluation than telling the truth under the condition that the members in the group are lying, but with the growth of age, children's evaluation of the lies of the members within the group will gradually increase [22]. In Zang Yanhong's study, it can be found that children's evaluation of lies will become higher with the growth of age, but the types of lies are not subdivided in this study. Children's evaluation of lies

is gradually improved, which may be due to the change of the identity of the object of lying, or because children can gradually understand white lies. Therefore, this paper will discuss the differences in the evaluation of lies between members or members of the group. Children at 4 years old can already roughly identify other lies [5], so the subjects in this paper can test children aged 5-7 to ensure that children can understand the lies in the experiment.

There is a clear influence of children's cognitive factors on children's moral evaluation of [20,21]. Children with higher theory of mind scores were more positive about people telling the truth [18]. Previous articles have mostly discussed the role of children's executive function and psychological theory on children's lying behavior, and children's evaluation of lies is also influenced by psychological theory and executive function, but it is not clear about the impact of psychological theory and executive function on children's evaluation of different types of lies and members. In theory, this paper adds [20] to the theory of mind and executive function for children's evaluation of different lies and different members. In reality, white lies as prosocial motivated lies, in the process of education, educators should treat white lies correctly, and let children can correctly understand white lies, improve children's emotional understanding ability [23].

2. Method

2.1. Subjects

This experiment measured a total of 89 subjects(43 boys,46 girls,M=5.94 years old, SD=0.86), respectively,59 Jingzhou a kindergarten children and 30 Jingzhou a primary school children in grade one (35 five years old children, because of a five years old children executive function experiment data loss, so excluded, 24 six years old children, 30 seven years old children).

2.2. Design of experiments

2.2.1. Children's evaluation of lies

This experiment is 2 (member attributes: in the group members, out of the group members) x2 (lie type: malicious lies, white lies) in-subject design. The member attributes are divided into two levels: intra-group members and non-group members, respectively, the protagonists in the story are classmates of children's school and students of other schools. The types of lies are divided into two levels: white lies and malicious lies. White lie represents the protagonist lying as prosocial behavior in the story, while malicious lie means that the protagonist lying in the story is anti-social behavior, which will cause harm to others. To design four short stories, each child listens to four stories and evaluates the behavior of the protagonist in the story.

In order to control the gender of the protagonist to have an impact on the moral evaluation of children, this experiment sets the gender of all the protagonists as girls, and the gender of the children in the malicious lies group as boys, with only the protagonist and the teacher in white lies.

Based on the experimental results of Zhang Tingyu and Zhang Yuqing [24] on whether adults can tell others' lies, adults usually tell whether the other person lies by using the different "clues" shown by the liar and the storyteller. In order for children to effectively judge lies, after each story, ask the children if the protagonist tells the truth. If the child cannot tell the lies about the protagonist in the experiment, repeat the story in the experiment at a slower speed to ensure that the child can understand the story.

After the subject can successfully identify the protagonist in lying, give the child a pattern of five colors from deep to light, which represents, you like, like, average, hate, very hate the protagonist of the story, respectively representing the score of 1 to 5 [2]. Let the child choose a pattern for the protagonist of the two stories to evaluate the love or dislike of the protagonist. After the child chooses the expression, record it on the prepared table.

2.2.2. Psychological theory test

The experiment measures the development of child theory of psychology using first and second level belief errors. The first-level belief error task is divided into two processing [25]: unexpected location and unexpected content. Secondary belief error experimental processing refer to the previous experimental treatment in the literature [26].

The accident location task presents a story for children in the form of a comic strip. In the story, Xiao Ming has a piece of chocolate. He put it in the box (position A) and went out to play. Mother saw it and was afraid that the chocolate would melt, so she moved the chocolate to the refrigerator (position B). When Xiao Ming came home, he wanted to eat chocolate.1. Memory question: Where did Xiao Ming put the chocolate at first?2. Real question: Where is the chocolate right now?3. Wrong belief question: Where does Xiao Ming think the chocolate is now?4. Behavior prediction question: Where will Xiao Ming go to get the chocolate?

Accidental content tasks using preprepared pencil boxes and gum. Show the child a pencil box and ask the child, " Can you guess what is in the pencil box?"(Children answer stationery category). Let the subjects open the pencil box, which stored two gum, the subject surprised to say to the subjects: " Look! Is sugar."Then put the sugar in the pencil box and cover the lid.1. Appearance: What do you think is it before you open the pencil box?2. Reality question: Actually, what is in the pencil-box?3. Self-misbelief: What do you think is in it before you open the pencil-box?4. Others wrong belief: the head teacher has not opened the pencil box, she will think what is in the pencil box?

The secondary belief error task refers to the task [26] of "Little painting book" and "birthday Dog" by Zhang Wenxin et al. The task of "small painting book" describes the interaction between peers, Ning Ning has a small painting book, Ning Ning deliberately mistakenly told the small bright small painting book hidden in the bookcase, because they want to own exclusive. Then, without knowing it to Ning Ning, Xiao Liang saw her get the small painting book from the bookcase of the painting book. Ask children: 1. Ning Ning told Xiao Liang where the small painting and calligraphy is hidden?2. Where are the small paintings and calligraphy actually hidden?3. Secondary unknown task: the teacher asked Xiao Liang whether he knew the real place of the small painting book?4. Secondary belief: Where does Xiao Liang think that the small painting book is?

The "birthday puppy" task is to describe the interaction between mother and son, and Xiaozhi's mother is preparing a birthday gift for her. She deliberately mistakenly told small wisdom to give him a water gun to make a birthday gift, because her mother wanted to give small wisdom a surprise. When the mother is preparing, the small wisdom secretly in the window saw the mother yi himself prepared a gift is a toy car. Ask children: 1. Mother told the little wisdom, to the little wisdom prepared what gift?2. What kind of gift was you actually prepared?3. Secondary unknown: Grandma asked

her mother: " Does little wisdom know that you have prepared a toy car for him?"Will mom answer?4. Two wrong belief question: Grandma asked her mother: " Little wisdom will think he can receive a gift?"What would mom say?

Structurally, the test task includes two probe questions and two quiz questions, the first and second questions of each story, mainly examining whether children can understand and remember the content of the story. The quiz questions are the third and fourth questions of each story, each with eight points. The main test should give feedback and correction after the child answers the exploration question. If the child does not understand the story, then speak slowly again. The child will not give the child feedback after answering the test question.

2.2.3. Perform function tests

Using the NIH toolbox software to measure the development of child executive function. Executive function in children was measured with the program NIH Toolbox Flanker Inhitory Control and Attention Test Ages 3-7 v2.1. A 2-vector scoring method is used, which uses accuracy and reaction time where each "vector" has values between 0 and 5 and the calculated score combining each vector score values between 0 and 10.

2.3. Experimental result

2.3.1. The evaluation of different types of lies in internal and external groups

Table 1. Evaluation of children of different ages and gender M (SD)

age	Malicious lies				white lies			
	In group		Out group		In group		Out group	
	Female	Man	Female	Man	Female	Man	Female	Man
5	2.05（1.68）	2.23（1.70）	2.05（1.05）	1.46（1.23）	2.91（1.50）	2.77（1.92）	2.64（1.32）	1.54（1.13）
6	2.40（1.71）	1.29（0.61）	1.70（1.25）	1.21（0.43）	1.90（1.45）	2.14（1.46）	2.20（1.40）	2.07（1.27）
7	1.21（0.43）	1.69（1.08）	1.43（0.65）	1.38（0.62）	2.43（1.09）	2.06（1.12）	2.36（1.39）	2.00（1.10）

Using repeated measures ANOVA results shown in Table 1, the main effect of lie type was significant, F (1,83) = 17.87, p <0.001, η p2=0.177, children had a lower evaluation of the protagonist who had a malicious lie in the story than the protagonist who told a white lie. The main effect of member type was significant, F (1,83) =5.43, p=0.022, η p2=0.061. When the protagonist in the story is a classmate of the school, children's evaluation of members within the group was significantly higher than that of members outside the group. The interaction effects of the four independent variables were not significant.

2.3.2. Theory of mind and executive function and the correlation analysis of children for different types of members

Table 2. Correlation matrix of theory of mind and executive functions and children's lies about different types of members

	In group Malicious lies	Out group Malicious lies	In group white lies	Out group white lies	Psychological theory
Out group Malicious lies	.426**				
In group white lies	.317**	.301**			
Out group white lies	.100	.298**	.525**		
Psychological theory	-.289**	-.229*	-.103	.001	
Executive function	-.053	-.067	.152	.243*	.182

*p< 0.05, **p< 0.01

Theory of mind and executive functions were correlated to the evaluation scores. As shown in Table 2, there was a significant negative correlation between intra-group malicious lies and theory of mind (r= -0.289, p <0.001), out-of-group malicious lies had a significant negative correlation with theory of mind (r= -0.229, p <0.05), and a significant positive correlation between out-of-group malicious white lies and executive function (r=0.243, p <0.05).

2.3.3. Theory of mind and executive function with children for different types of members

On the basis of the full correlation between the theory of psychology and the moral evaluation of different conditions of children (see Table 2), the prediction effect of psychological theory and executive function on the moral evaluation of children was further investigated through stratified regression analysis. Four hierarchical linear models (see Table 3) were established for different types of lies and different attributes. The input form of independent variables of each model is similar, and the input steps are divided into two layers: the first layer is demographic variables, including age and gender; the second layer includes the psychological theory in the malicious lie group and the executive function in the white lie group. The results show that the theory of psychology does not significantly predict children's evaluation of outside-group malicious lies, but can significantly explain 6.4% of the variation in children's evaluation of within-group members, F (3,85) =3.002, p=0.029. Executive function was a significant positive prediction of children's evaluation of lies, F (3,85) =2.788, p=0.033, an interpretation rate of 5.7%. There was a significant positive predictor of executive function on the evaluation of out-of-group members, F (3,85) =3.196, p=0.031.

Table 3. Theory of mind and executive function with children for different types of members

Task	step	predictive variable	R^2	R2 after adjustment	F	β
Evaluation of malicious groups within the group	first floor		0.043	0.021	1.942	
		gender				-0.26
		age				-0.202
	second floor	Psychological theory	0.096	0.064	3.002*	-0.246*
Evaluation of the outgroup malicious groups	first floor		0.086	0.065	4.065	
		gender				-2.13*
		age				-0.174
	second floor	Psychological theory	0.109	0.078	3.483	-0.163
Evaluation of goodwill group	first floor		0.039	0.017	1.765	
		gender				-0.057
		age				-0.182
	second floor	Executive function	0.090	0.057	2.788*	0.243*
Evaluation of the of group goodwill group	first floor		0.050	0.028	2.280	
		gender				-0.226
		age				-0.011
	second floor	Executive function	0.101	0.070	3.196	0.246*

*: $p< 0.05$, **: $p< 0.01$

3. Discuss

3.1. Children's evaluation of different types of members and different lies

This experiment is intended to explore children's evaluation of different members and different types of lies. Children have a lower evaluation of malicious lies and a significantly higher evaluation of white lies. This result is consistent with the previous literature [9,10]. Children between the ages of five and seven can recognize others' lies, and can understand the difference between white and malicious lies, making it more likely to accept white lies that have to be given for the sake of others. Children's evaluation of the hero of the story is also influenced by the members of the hero. For the members within the group, children are more willing to give good evaluation, while if the hero is a member outside the group, children are more inclined to give poor evaluation. Previous studies have shown that in the context of within-group groups performing antisocial behavior and out-of-group groups performing prosocial behavior, children give more trust to their members within the group [12,13]. The same is true of this experiment. Even if the lies of the members within the group are also harmful, the children's evaluation of the members within the group is relatively higher than that of the members outside the group.

That is, with the growth of age, children tend to be strict in the evaluation of the protagonists of the story. Since all the protagonists in the story lie, the older children seem to be more sensitive to lying behavior, believing that both white lies and malicious lies are bad. The conditional differences in children's evaluation of lies can be attributed to the negative bias [20], where children selectively focus on negative information and have a better memory of negative information.

In the malicious lies of the members of the group, the children's evaluation of the protagonist gradually decreases with the growth of age. When the experiment is a malicious lie of members outside the group, the children's evaluation of the protagonist still gradually decreases with age. That is, when lies are malicious and harm the interests of others, children's tolerance to them gradually decreases with age.

When the experiment is a white lie of the members of the group, the evaluation of the five-year-old protagonist is higher than that of the seven-year-old child, and it is higher than that of the six-year-old child, showing a concave font change. When experimentally treated as white lies of out-of-group members, similar to the treatment within the group members, the evaluation showed concave font changes with age. Therefore, we speculate that children's evaluation of white lies may gradually increase after the age of seven. With the development of children's psychological theory and executive function, children's psychological development will gradually mature, which may show greater tolerance for white lies.

Children are more sensitive to lies. Most children think that good children should be honest, and neither malicious lies nor white lies should be better evaluated, which is consistent with the results of previous studies [27]. This experiment adopts a five-point scoring method, even if the protagonist is a white lie, the average evaluation of children on them is not more than 3 points. Future research should examine how negative bias and group biases are intertwined.

3.2. Effect of psychological theory on child evaluation

Psychological theory is divided into two parts, the results of the level of false belief, six children psychological theory results are better than five and four years old children, but the test results, the three ages of children did not show obvious differences with wen-xin zhang [26] et al., children's understanding of secondary psychological theory task to 1-2 years later.

Malicious lies within a group have a negative correlation with psychological theory, and psychological theory has a significant prediction effect on children's moral judgment of malicious lies within the group [28]. It means that with the improvement of the psychological theory, the children will give a lower evaluation to the story of the protagonist's malicious lies. To sum up, psychological theory will affect children's judgment of malicious lies, and children's evaluation of members in the group will gradually decrease with the development of psychological theory. This

differences with previous research results, in QuWei and Xu Shen [1] about the influence of children lies in the experiment, age only affect children for the evaluation of white lies, does not affect the evaluation of children for malicious lies, but can be seen in this paper, as the age and psychological theory gradually increased, children for malicious lies show lower evaluation. As shown in Table 2, in the case of malicious lies, the evaluation of children for the group is slower than members of the group, which is similar to previous experimental results of children for different members, due to social factors, with the growth of children age and psychological theory, children will choose to believe and support the members of the group [12,13]. It can be speculated that the development of children's psychological theory seems to have a negative predictive effect on the evaluation of malicious lies by only children. Conditional differences in children's evaluation of lies can be attributed to a negative bias [22]. The better the development of children's psychological theory is, the more attention should be paid to malicious lies, understanding the harm brought by malicious lies to others, and the evaluation of malicious lies gradually decreases. The present paper did not find the existence of psychological theory and the scoring of children in the case of white lies, which is similar to the results of Vaish et al. Some studies have found that children's psychological theory and moral evaluation are not a one-way effect, and there is a mutual influence and promotion relationship between the two [29]. Therefore, educators should pay attention to children's identification of different lies, and teach children to correctly view and evaluate different types of lies.

3.3. Impact of executive function on child evaluation

Executive function can positively predict children's evaluation of white lies, whether the member attributes are within or outside the group. With the improvement of children's executive function ability, children's evaluation scores for the white lies of the story protagonist gradually increase. Due to the growth of children's executive function, children's cognitive enhancement, so children for white lies, and willing to give the hero of white lies more positive evaluation [2,21], and younger children perform poorly, may not understand white lies is not bring harm to others, so due to the attribution of negative bias cause children these children will white lies also classified as malicious lies, and give negative evaluation [22].

According to Piaget's moral development stage, it can be inferred that younger children are in the moral stage of heteronomy. Children abide by the standards of adults and obey the rules of adults. Since the classroom emphasizes lying as a bad behavior in preschool education and family education, children will also make a low evaluation of white lies. However, with the development of executive functions, children's moral cognition also develops, and it can be slowly understood that rules can be suspected and changed, so it is believed that white lies can be accepted. Under the condition of white lies, the difference in children's evaluation of different members gradually decreases with age, and five-year-old children will have a more obvious intra-group preference, but the older they age, this intra-group preference will gradually decrease, which is different from the results of previous studies [13].

From the above discussion, it can be found that the development of children's psychological theory only affects the moral evaluation of children under the condition of malicious lies, and there is a negative correlation between the two, which is the difference in the results of previous articles [1]. Executive function has a positive predictive effect on children's evaluation of the white lies group, which is similar to most of the literature [2,21]. The theory of psychology and executive function have completely different effects on children's evaluation of different lies. However, this paper only finds that they have a certain predictive effect on the moral evaluation of children, but it is not clear why they produce different prediction results with different experimental levels. Future research could further discuss what cognitive abilities in psychological theory and executive function affect children's moral judgments and what they will work.

Due to the limitations of the children's age experiment, only measured four to six years old children, not considering the higher age children theory of psychology and the executive function of measurement, and research points out that although Chinese children psychological theory early, but relatively slow development, children the development of the secondary belief error critical period for 7 years [30], so the development of the executive function and the theory of psychology for children to the influence of different types of children with different types of lies will have what development trend is not conclusive. With age, the development of executive functions and psychological theories, whether children can show more recognition of white lies, and whether children are more strict about members of the group than outside remain to be examined.

3.4. Shortcomings and prospects

The experimental results of the small age range and the second level wrong belief show that there is no significant difference in the performance of the children of the three ages, which can expand the age range, measure the second level wrong belief of children over eight years of age, and obtain a more complete development of psychological theory.

Due to time problems and the epidemic, the operation time of the executive function experiment was short, three levels of testing should be measured, considering many reasons, and only inhibitory control and attention were measured. Due to the epidemic, the number of subjects recruited is not large enough, and the main effect of member attributes and age is not significant. If the subjects are increased, the main effect may be significant.

In this experiment, children from a kindergarten in a suburb and a primary school in a town were selected. It is not excluded that the children had lower scores in the test of psychological theory and executive function compared with children in economically developed areas due to family economic situation.

There are flaws in the story design of different members and different lies, and children are susceptible to the content of the story. For example, kindergarten children are not sensitive to the word "other kindergartens", and can not well identify the difference between the hero and themselves. In the design of the story content, there are children's subjective judgments. For example, some children think that they like the hero because the hero also likes to eat bananas, and ignore other variables of the hero. So it may be more effective to design the experiment as a video and to distinguish it by color.

The executive function and the theory of psychology in this study can only predict children's evaluation of lying about

others' lies. It is not clear what factors cause children to have different evaluation of others' different lies, and it is also worth more detailed exploration in later studies.

4. Conclusion

(1) Compared with malicious lies, children are more tolerant of white lies, and children's evaluation of others' lies will gradually decrease with age.

(2) Children's evaluation of the hero of the story is also based on the attributes of the hero members of the story. Children will show good evaluation of the members of the group, but as the age of the children increases, the score of the members who give malicious lies to the group will gradually decrease.

(3) Children's evaluation of malicious lies within the group is negatively correlated with the theory of psychology. The higher the theory of psychology, the children are more likely to give a lower evaluation to the protagonist who spread malicious lies within the group.

Executive function is positively correlated with white lies. Children with better executive functions will give more positive comments to those children who say white lies.

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