






# Do 3–4-Year-Old Preschoolers Know that the Fictional Characters in Television Programs Are not Real?

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**Abstract.** It is of great significance for children's development to correctly distinguish between reality and fantasy. The purpose of this study was to investigate whether 3–4-year-old children can distinguish between reality and fantasy and whether they can distinguish between different fictional worlds as adults do, and to further analyze their understanding of fictional characters acted by real people based on previous studies. In the study, 36 pairs of combinations were created by pairing three real people, four fictional characters, and two fictional characters acted by real people. Both young children and adults were asked to rate how easily these characters could meet on a scale of 1 to 3. The results revealed that 3–4-year-olds could distinguish between different fictional worlds like adults but were less able to distinguish between reality and fantasy than adults. In addition, 3–4-year-olds and adults had different understandings of fictional characters acted by real people. Children interpreted these characters as fictional characters rather than real people, while adults interpreted these characters as real people rather than fictional characters.

**Keywords:** Fantasy/reality distinction · Fantasy/fantasy distinction · Non-metric multidimensional scaling

## 1 Introduction

The rapid advancement of technology has led to the widespread popularity of television in households, becoming a significant component of children's leisure time [1]. A recent study conducted by Common Sense Media in 2020 assessed electronic media usage among children aged 0–8 years in the United States and found that children aged 2–4 spent an average of 2.5 h per day using electronic media, while children aged 5–8 spent 3.05 h per day. Furthermore, the study revealed that children aged 0–8 years spent 73% of their total screen time viewing television and video content each day [2]. Other researchers have investigated television viewing habits among Chinese children, discovering that television was the most utilized form of media by young children aged 3–6 years, accounting for 35.1% of media use time [3]. Li et al. [4] found that a staggering 93.39% of children aged 3–6 years watched television every day, with an average viewing time of 90.88 min.

Cartoons are deeply loved by children among various television programs. Children spend a lot of time watching cartoons every day and gain knowledge about the world from them [5]. A study conducted by Yu [6] revealed that over 50% of children watched cartoons for about 0.5–1 h per day. Cartoons are featured with their abundance of fictional content, including entities and events that are not possible in the physical world or contravene physical laws [7]. This includes talking animals and characters with superpowers. Conversely, real entities and events refer to things or occurrences that exist in everyday life and align with the laws of reality [8], such as cleaning the classroom.

The presence of fictional content in cartoons presents a duality of benefits and challenges. On the one hand, it has been demonstrated to stimulate children's imagination and creativity [9, 10]. A study by Subbotsky et al. [10] found that preschool children who watched movies with fictional content performed significantly better on creativity tests compared to those who had not seen these movies. On the other hand, researchers have shown that some cartoons can lead to a decrease in children's executive function [7, 11], as the fictional content may interfere with their ability to properly execute tasks [12]. Additionally, as children are prone to imitating what they see, failure to distinguish between reality and fantasy can result in dangerous imitation of fantastical events [13]. It is thus of utmost importance for children's development to be able to distinguish between reality and fantasy.

Over the past few years, the field of psychology has witnessed a proliferation of studies examining children's differentiation between reality and fantasy [8, 14, 15]. Despite these efforts, there remains much contention among scholars regarding the ability of young children to distinguish between these two domains. Some researchers have doubted young children's ability to distinguish between reality and fantasy. They argued that children often had a strong belief in the existence of fictional characters [16, 17]. For example, Prentice et al. [16] found that most children under the age of 6 believed in the existence of Santa Claus, the Tooth Fairy, and the Easter Bunny. In addition, young children may accept the possibility of impossible events if they are presented with them [18–20]. However, a significant body of research has demonstrated that the ability to distinguish between reality and fantasy develops in early childhood. By the age of 3, children can already distinguish between pretend and real actions [21], imagination and reality [22], and toys and the objects they represent [23]. For instance, Wellman and Estes [24] reported that 3-year-olds can distinguish between real entities and mental imagery, comprehending that real entities can be touched while mental imagery cannot. By five years of age, children are able to accurately distinguish between real and fantastical entities [25, 26], as well as real and fantastical events [27, 28].

In addition to the real world, children are frequently exposed to a variety of fictional worlds, such as storybooks, dreams, cartoons, pretend play, etc. Therefore, it is important for them to be able to distinguish not only reality from fantasy but also different fictional worlds [29]. Adults have the ability to recognize the existence of multiple fictional worlds, beyond the binary distinction between reality and fantasy [30]. For example, it is well known that Snow White, Spider-Man, and Mickey Mouse are all fictional characters, but they each occupy a different fictional world. Will young children behave like adults? Goulding and Friedman [31] conducted three experiments in which children aged 4–7 were asked to judge whether improbable and impossible events could happen

in dreams, stories, and reality. The results indicated that children believed such events were most likely to occur in dreams, followed by stories, and finally in reality. This demonstrates that children hold subtle beliefs about every world [32, 33], and these different beliefs influence their judgments. For example, children may view dreams as farther away from reality than stories, leading them to believe that a greater number of events can occur in the more distant world [34]. Skolnick and Bloom [32] explored the beliefs of 4-year-old children and adults about fictional characters in media and their relationship with other characters in the same world (e.g., Batman and Robin) or different worlds (e.g., Batman and Spongebob). The results showed that 4-year-old children could distinguish different fictional worlds like adults, and pointed out that this was an unlearned default understanding. However, the binary judgment task used in the study (Experiment 1 required children to choose between “real” and “make-believe,” and Experiment 2 required them to choose between “yes” and “no”) makes it difficult to draw definite conclusions about the relationship between different fictional worlds [29]. Martarelli et al. [29] improved this by changing the binary judgment task into a progressive judgment task. The study selected 3 photos of real people and 12 photos of fictional characters and then asked children to rate how easily these characters could meet on a scale of 1 to 6. Non-metric multidimensional scaling (NMDS) was used to convert ratings of how easy it was for characters to meet into a spatial map representing the distance between them. The results indicated that children aged 3–4 could distinguish different fictional worlds like adults, but they couldn’t distinguish the real world from the fictional world.

Besides, there is a special kind of character in real life—the fictional characters acted by real people, such as Snow White acted by actors in Disneyland. These characters are special links between fictional characters and real life. How do young children understand their existence? Do they interpret them as fictional characters or real people? This is also one of the important issues in this study. Woolley et al. [35] found that 4-year-old children who were visited by Candy Witch acted by real people were more likely to believe in the existence of this novel entity. The enlightenment of this result is that if young children interact with a fictional character acted by real people in real life, children may believe in the existence of this fictional character more.

With the growing popularity of television in families, cartoons are becoming popular among children. This raises concerns about the potential impact of the fictional content contained within cartoons on children who may not be able to distinguish between reality and fantasy. Although previous studies have investigated the ability of young children to distinguish between reality and fantasy, the results have been inconsistent, warranting further investigation. In addition, substantial research on young children’s understanding of reality and fantasy was conducted in western countries, and this study adds a valuable cross-cultural perspective to the research by using Chinese children as the study population. This study refers to and extends the study by Martarelli et al. [29] to examine the ability of 3–4-year-old children to distinguish between reality and fantasy (reality/fantasy), as well as between different fictional worlds (fantasy/fantasy). Furthermore, the study also explores children’s understanding of fictional characters acted by real people in real life.

## 2 Methods

### 2.1 Participants

A total of 23 children aged 3–4 and 16 adults participated in this study. The children were recruited from kindergartens in Wuhan, Hubei Province, China, while the adults were undergraduate students also from the same location. However, one child and one adult were excluded from the study due to their data not meeting the experimental requirements. The final sample consisted of 22 young children ( $M = 44.13$  months,  $SD = 3.63$ , with 10 boys and 12 girls) and 15 adults ( $M = 21.6$  years,  $SD = 0.49$ , with 6 boys and 9 girls).

### 2.2 Materials and Procedures

The materials used in the experiment included four pictures of fictional characters (Sun Wukong and Zhu Bajie from the Chinese cartoon *Journey to the West*; Snow White and the dwarf from the animated films *Snow White and the Seven Dwarfs*), three pictures of real people (the participant, the participant's father, and mother) and two pictures of fictional characters acted by real people (Snow White and Zhu Bajie) (see Appendix 1). The consistency of the characters' expressive actions and emotional attributes was taken into consideration during the selection of the pictures, as previous studies have shown that the emotions of characters can influence children's reality/fantasy judgments [27, 36–38].

Due to the COVID-19 epidemic, face-to-face contact with the participants was not possible, and the experiment was conducted online. The children were asked to evaluate the combination of characters in pairs, and 36 pairs of characters ( $n \times (n-1)/2$  pairs comparisons with  $n = 9$  stimuli) were presented with Microsoft PowerPoint software. The experiment was recorded with the consent of the kindergarten teachers during a video call with the children, which was facilitated by the screen-sharing function of Tencent Meeting.

Initially, the knowledge of four fictional characters was assessed among the children by the experimenter asking them to identify the characters. If the children were unable to accurately recognize the character, the experimenter provided the correct answer. Subsequently, both children and adults were asked to rate how easily these 36 pairs of characters could meet on a scale of 1 to 3, where 1 signified that the two characters had never met and would not meet in the future, 2 indicated that it was somewhat easy for them to meet, and 3 meant they were easy to meet and had met at least once. To assist children in making judgments, column charts were utilized to provide a better understanding of the relationship between degrees (see Appendix 2).

The experimental procedure was based on the study by Martarelli et al. [29], with a modification in the method used for children to rate the ease of meeting between characters. The rating range was narrowed from 1–6 to 1–3, and the smiley face scale was replaced by a more intuitive and vivid column chart. This alteration was made as it was found that it was challenging for 3–4-year-olds to differentiate between six different smiley faces during the prediction.

For adults, they filled out the online questionnaire prepared in advance by the experimenter and the content was also to rate how easily these 36 pairs of characters could meet on a scale of 1 to 3.

### 2.3 Data Analysis

The collected data were analyzed by one-way ANOVA, non-metric multidimensional scaling analysis, and repeated measures ANOVA using SPSS25.0.

## 3 Results

Firstly, in examining the distinction between adults and children in different fictional worlds, the analysis excluded fictional characters acted by real people. The results showed that the distinction was based on pairing other characters, including within-real worlds (reality/reality pairs, e.g., the participant and his or her father), within-fictional worlds (fantasy/fantasy pairs of characters from the same fictional world, e.g., Sun Wukong and Zhu Bajie), between-fictional worlds (fantasy/fantasy pairs of characters from different fictional worlds, e.g., Sun Wukong and Snow White), and between real-fantasy worlds (reality/fantasy pairs, e.g., the participant and Zhu Bajie). Children and adults had to rate how easily these 36 pairs of characters could meet on a scale of 1 to 3, with higher scores indicating a higher possibility of a meeting between characters. Descriptive statistics are shown in Appendix 3.

Referring to the study of Martarelli et al. [29], the distinction between adults and young children for reality/fantasy and fantasy/fantasy was calculated at the individual level through the following formula:

For the degree of reality/fantasy distinction (RFD):

$$(M_{RR} - M_{RF}) \times sd_{tot} \quad (1)$$

$M_{RR}$  is the mean of all reality/fantasy judgments,  $M_{RF}$  is the mean of all reality/fantasy judgments, and  $sd_{tot}$  is the standard deviation of all judgments.

For the degree of fantasy/fantasy distinction (FFD):

$$sd_{FF}/sd_{tot} \quad (2)$$

$sd_{FF}$  is the standard deviation of all fantasy/fantasy judgments.

Two one-way ANOVAs were conducted with age as the independent variable and RFD and FFD as the dependent variables. The results revealed that there was a significant difference between adults and children in the degree of reality/fantasy distinctions,  $F(1, 35) = 27.66, p < 0.001, \eta_p^2 = 0.44$ , but not in the degree of fantasy/fantasy distinctions,  $F(1, 35) = 0.12, p > 0.05, \eta_p^2 = 0.03$ , indicating that 3–4 years old are as capable as adults of distinguishing between different fictional worlds, but not good at distinguishing between reality and fantasy as adults can do.

Secondly, the mental representation of real and fictional worlds was analyzed using non-metric multidimensional scaling (NMDS). Ratings of how easy it was for characters to meet into a spatial map that represents the distance between them. For instance, if a

participant rated Snow White as 3 for ease of meeting with the dwarf, but 1 for ease of meeting with Zhu Bajie, the map would display that Snow White was relatively close to the dwarf, but relatively far from Zhu Bajie.

The NMDS was first conducted using the ALSCAL procedure in SPSS 25.0, resulting in average maps for adults and children, as shown in Appendix 4 and Appendix 5. Both average maps correctly divided the four fictional characters into two groups: the *Journey to the West* group (Sun Wukong and Zhu Bajie) and the *Snow White and the Seven Dwarfs* group (Snow White and the dwarf). This indicates that both adults and children perceive the existence of different fictional worlds and that characters within the same fictional world are judged as easier to meet. In addition, children were able to distinguish the real people group (the participant, the participant's father, and the participant's mother) from the fictional character group (the *Journey to the West* group and the *Snow White and the Seven Dwarfs*), suggesting that they could distinguish between the real and fictional worlds.

However, they have different understandings of fictional characters acted by real people. In the children's average map, these acted fictional characters were closer to the characters in their respective fictional worlds, indicating that the children interpreted the acted characters as fictional characters rather than real people. In contrast, in the adults' average map, the fictional characters acted by real people were closer to the real people. It indicates that the adults considered these characters as real people rather than fictional characters.

Subsequently, since the fit of the average maps model for young children generated by the process of ALSCAL was not satisfactory (stress = 0.45), we utilized the PROXSCAL procedure in SPSS 25.0 for further analysis. The PROXSCAL procedure introduces an optimal scale transformation into the multidimensional scaling analysis model, thereby enabling more precise results with sufficient sample size. Consequently, average maps with improved fits were generated for both adults and children, as shown in Appendix 6 and Appendix 7. These results reinforced the findings previously discussed.

Finally, in order to eliminate the potential impact of repeated measures on the results, the above results were validated through the use of a repeated measures analysis of variance (ANOVA). The results of Mauchly's test indicated that the data was in compliance with the assumption of sphericity ( $p = 0.617 > 0.05$ ), further reinforcing the conclusion that there were significant differences between the understanding of fictional characters acted by real people among young children and adults ( $F_{(1,35)} = 404.69, p < 0.01, \eta_p^2 = 0.92$ ).

## 4 Discussion

In the present study, we examined the ability of 3–4-year-old children and adults to distinguish reality/fantasy and fantasy/fantasy, and also explored their understanding of fictional characters acted by real people. We found that 3–4-year-olds were able to distinguish between different fictional worlds as well as adults, but were not as good as adults at distinguishing between reality and fantasy. Besides, 3–4-year-olds and adults had different understandings of fictional characters acted by real people. 3–4-year-olds interpreted these characters as fictional characters rather than real people, while adults interpreted these characters as real people rather than fictional characters.

First of all, the result is in line with previous studies by Martarelli et al. [29] and Skolnick et al. [32], which showed that children aged 3–4 can distinguish different fictional worlds. For instance, they believed that characters within the same world, such as Snow White and the dwarf, could interact with each other, but not with characters from different worlds, like Sun WuKong. This ability to distinguish between fictional worlds has been explained as a product of early childhood development and as an unlearned default option for children [29, 32]. When children encounter a fictional world, they tend to create unique attributes that distinguish it from other fictional worlds. This conclusion was supported by a subsequent study that investigated the behavior of 3- and 4-year-old children during pretend play. The results showed that, regardless of whether they presented two pretend games simultaneously or sequentially, children were unwilling to transfer objects between the two games, indicating their recognition of multiple pretend worlds and their spontaneous differentiation between different pretend worlds [33].

Secondly, the study revealed that the ability of 3–4-year-old children to distinguish between reality and fantasy was not as good as that of adults, consistent with the results of Martarelli et al. [29]. However, previous studies have shown that young children can already distinguish between reality and fantasy [28, 39]. This may be because in our experimental task, children must judge the physical possibility of events, and these skills seem to develop around the age of 4 [40]. This task was challenging for 3-year-old children.

The results of our study differ from those of Martarelli et al. [29], who found that young children perceive the real world as one of many and cannot yet distinguish it from the fictional world. However, in our study, children were found to be able to distinguish the real world from the fictional world. This discrepancy in results could be attributed to three factors. First, Martarelli et al. [29] presented children with 105 character evaluations, which could have resulted in fatigue and decreased accuracy in judging reality and fantasy for the 3–4-year-old participants. In contrast, our study required the evaluation of only 36 character pairs, which was relatively less taxing for the young children. Second, research has demonstrated that the familiarization with stimulus materials affects children's judgments of reality and fantasy [41–43]. The real people used in our study were the participant, the participant's father, and the mother, whereas the real people they used were the participant, the experimenter, and the participant's teacher. The greater familiarity of the characters in our study could have impacted the results of the experiment. Lastly, due to the limited comprehension of 3–4-year-old children, we altered the 6-point smiley face scale used in Martarelli et al. [29] to a 3-point column chart scale, which reduced the error in the results to some extent, but also precluded a more in-depth analysis of the differentiation capacity of the children.

Finally, our findings revealed that there was a difference in the understanding of fictional characters acted by real people between 3–4-year-old children and adults. Children interpreted these characters as fictional characters, whereas adults interpreted them as real people. The result is consistent with the traditional view of cognitive development that young children are gullible and tend to believe in the existence of fictional characters [44–46]. As they grow older, children become increasingly rational, similar to adults. Moreover, previous research has shown that the emotional content embedded in stimulus material influences children's distinction between reality and fantasy. Children

are more likely to believe that events with neutral or positive emotions occur in reality, as opposed to events with negative emotions [27, 36–38]. The animated characters used in this study are popular among young children and elicit positive emotions, which may have led the children to perceive these fictional characters as real.







## 5 Limitations

The present study has several limitations that should be addressed in future research. First of all, in order to enhance the visibility and precision of differences in the average maps of children and adults, it would be beneficial to perform Procrustes transformations on the average maps obtained through the application of ALSCAL and PROSCAL. Secondly, the method used to assess the ease with which different characters could meet may have led to confusion among the participants, as they may have interpreted “meeting” as viewing characters on television or in storybooks, rather than in reality. Future research should consider how to avoid this situation. Finally, the ongoing COVID-19 pandemic necessitated conducting the survey online, which may have introduced additional variables such as inconsistent equipment and network stability, or the presence of a teacher, which may have influenced the results of the experiment. Future studies should seek to mitigate these sources of variability.



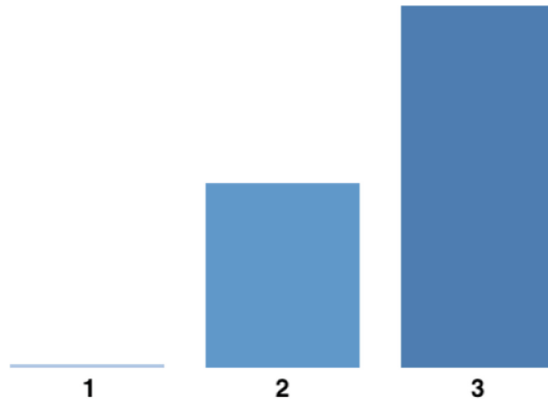
### Appendix 1

The experimental materials used in the study. (A) the real people: the participant, the participant’s father, and the participant’s mother; (B) the characters in *Journey to the West*: the fictional characters (Sun Wukong and Zhu Bajie) and the fictional character acted by real people (Zhu Bajie); (C) the characters in *Snow White and the Seven Dwarfs*: the fictional characters (Snow White and the dwarf) and the fictional character acted by real people (Snow White).

A		
Photograph of the participant	Photograph of the participant's father	Photograph of the participant's mother
B		
		
C		
		

## Appendix 2

The easiness scale of a pair of characters to meet



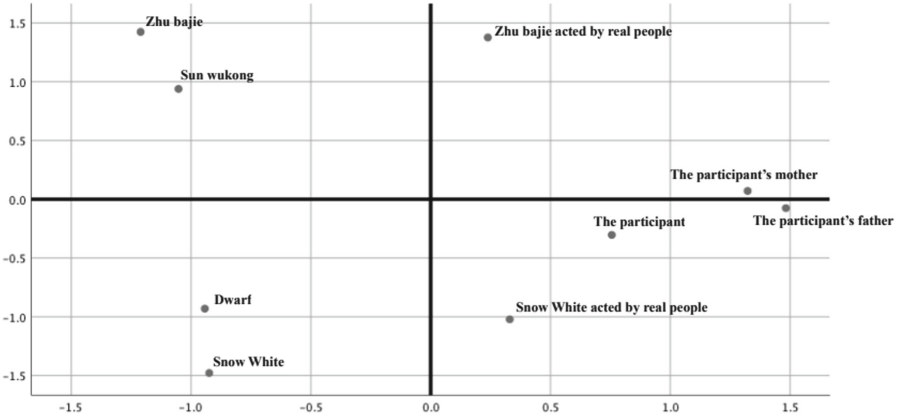
## Appendix 3

Means and standard deviations of adults and Children's ratings for the easiness of different characters could meet.

	Within-real		Within-fictional		Between-fictional		Between-real-fictional	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
children	2.68	0.61	2.39	0.78	2.14	0.87	2.07	0.87
adults	2.91	0.35	2.30	0.90	1.17	0.41	1.08	0.32

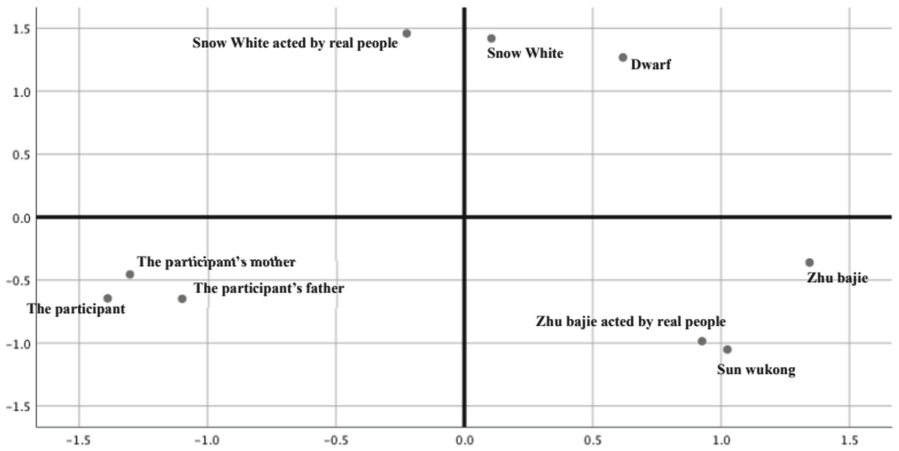
### Appendix 4

Adults' average map (stress = 0.08)



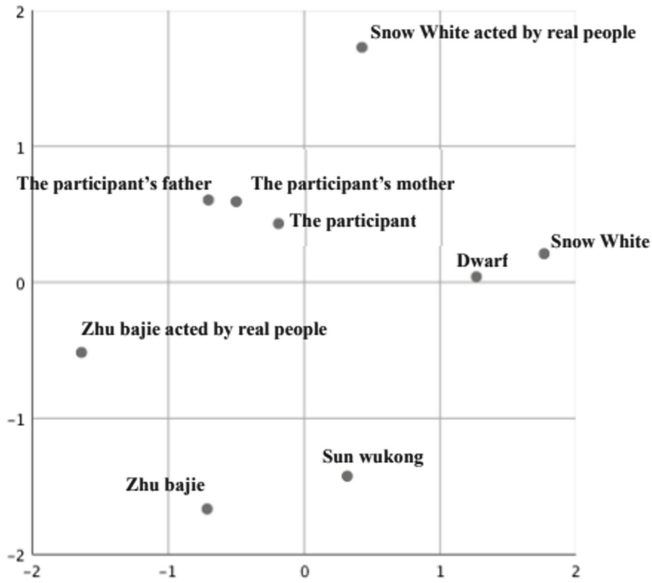
### Appendix 5

3-4-year-olds' average map (stress = 0.45)



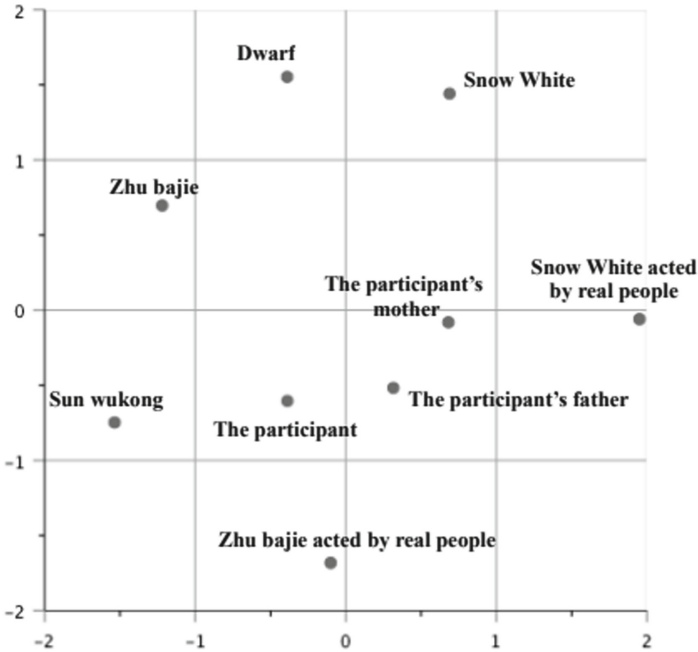
## Appendix 6

Adults' average map (stress = 0.01)



## Appendix 7

3–4-year-olds' average map (stress = 0.05)



## References

1. Christakis, D.A., Ebel, B.E., Rivara, F.P., Zimmerman, F.J.: Television, video, and computer game usage in children under 11 years of age. *J. Pediatr.* **145**(5), 652–656 (2004)
2. Rideout, V., Robb, M.B.: *The common sense census: media use by kids age zero to eight*, San Francisco (2020)
3. Liu, G.Y., Li, J.X., Xie, S., Liu, X.F., Ma, S.S.: The effect of electronic devices on preschool children's social ability: the mediating role of family environment. *Chin. Spec. Educ.* **11**, 90–96 (2020)
4. Li, H., Zhou, Z.K., Wu, X.P.: 3–6 year old children's media use. *Shanghai Res. Educ.* **5**, 57–59 (2014)
5. Dong, S.M., Song, Y.J., Jiang Y.R., Sun, G.Q., Wang, Y., Jiang, F.: A multicenter study on the effect of television viewing behavior on sleep quality in children under 4 years of age in China. *Chin. J. Pediatr.* **53**(12), 907–912 (2015)
6. Yu, J.: Education value of cartoon for preschoolers. Master's thesis, Hunan Normal University (2016)
7. Lillard, A.S., Peterson, J.: The immediate impact of different types of television on young children's executive function. *Pediatrics* **128**, 644–649 (2011)
8. Woolley, J.D.: Thinking about fantasy: are children fundamentally different thinkers and believers from adults? *Child Dev.* **68**(6), 991–1011 (1997)

9. Tower, R.B., Singer, D.G., Singer, J.L., Biggs, A.: Differential effects of television programming on preschoolers' cognition, imagination, and social play. *Am. J. Orthopsychiatry* **49**(2), 265–281 (1979)
10. Subbotsky, E., Hysted, C., Jones, N.: Watching films with magical content facilitates creativity in children. *Percept. Mot. Skills* **111**(1), 261–277 (2010)
11. Li, H., Hsueh, Y., Yu, H., Kitzmann, K.M.: Viewing fantastical events in animated television shows: immediate effects on Chinese preschoolers' executive function. *Front. Psychol.* **11**, 583174 (2020)
12. Lillard, A.S., Drell, M., Richey, E., Boguszewski, K., Smith, E.: Further examination of the immediate impact of television on children's executive function. *Dev. Psychol.* **51**, 792–805 (2015)
13. Bandura, A.: *Social Learning Theory*. Prentice-Hall, Oxford (1) (1977)
14. Woolley, J.D., Ghossainy, M.E.: Revisiting the fantasy–reality distinction: children as naïve skeptics. *Child Dev.* **84**(5), 1496–1510 (2013)
15. Chen, X.Y., Wang, Y.F., Zhao, J.Y., Meng, Q.: The developmental characteristics and mechanism of children's distinction between fantasy and reality. *Adv. Psychol. Sci.* **07**, 1232–1237 (2019)
16. Prentice, N.M., Manosevitz, M., Hubbs, L.: Imaginary figures of early childhood: Santa Claus, Easter Bunny, and the Tooth Fairy. *Am. J. Orthopsychiatry* **48**, 618–628 (1978)
17. Principe, G.F., Smith, E.: Seeing things unseen: fantasy beliefs and false reports. *J. Cogn. Dev.* **9**, 89–111 (2008)
18. Chandler, M.J., Lalonde, C.E.: Surprising, magical, and miraculous turns of events: children's reactions to violations of their early theories of mind and matter. *Br. J. Dev. Psychol.* **12**, 83–95 (1994)
19. Rosengren, K.S., Hickling, A.K.: Seeing is believing: children's explanations of commonplace, magical and extraordinary transformations. *Child Dev.* **65**, 1605–1626 (1994)
20. Subbotsky, E.: Magical thinking in judgments of causation: can anomalous phenomena affect ontological causal beliefs in children and adults? *Br. J. Dev. Psychol.* **22**, 123–152 (2004)
21. Flavell, J.H., Flavell, E.R., Green, F.L.: Young children's knowledge about the apparent-real and pretend-real distinctions. *Dev. Psychol.* **23**, 816–822 (1987)
22. Woolley, J.D., Wellman, H.M.: Origin and truth: young children's understanding of imaginary mental representations. *Child Dev.* **64**, 1–17 (1993)
23. Woolley, J.D., Wellman, H.M.: Young children's understanding of realities, nonrealities, and appearances. *Child Dev.* **61**, 946–961 (1990)
24. Wellman, H.M., Estes, D.: Early understanding of mental entities: a reexamination of childhood realism. *Child Dev.* **57**, 910–923 (1986)
25. Sharon, T., Woolley, J.D.: Do monsters dream? Young children's understanding of the fantasy/reality distinction. *Br. J. Dev. Psychol.* **22**, 293–310 (2004)
26. Taylor, B.J., Howell, R.J.: The ability of three-, four-, and five-year-old children to distinguish fantasy from reality. *J. Genet. Psychol.* **121**, 315–318 (1973)
27. Samuels, A., Taylor, M.: Children's ability to distinguish fantasy events from real life events. *Br. J. Dev. Psychol.* **12**, 417–427 (1994)
28. Golomb, C., Galasso, L.: Make believe and reality: explorations of the imaginary realm. *Dev. Psychol.* **31**, 800–810 (1995)
29. Martarelli, C.S., Mast, F.W., Läge, D., Roebbers, C.M.: The distinction between real and fictional worlds: investigating individual differences in fantasy understanding. *Cogn. Dev.* **36**, 111–126 (2015)
30. Lewis, D.: Truth in fiction. *Am. Philos. Q.* **15**, 37–46 (1978)
31. Goulding, B.W., Friedman, O.: Children's beliefs about possibility differ across dreams, stories, and reality. *Child Dev.* **91**(6), 1843–1853 (2020)

32. Skolnick, D., Bloom, P.: What does Batman think about SpongeBob? Children's understanding of the fantasy/fantasy distinction. *Cognition* **101**(1), B9-18 (2006)
33. Skolnick Weisberg, D., Bloom, P.: Young children separate multiple pretend worlds. *Dev. Sci.* **12**(5), 699–705 (2009)
34. Weisberg, D.S., Goodstein, J.: What belongs in a fictional world? *J. Cogn. Cult.* **9**, 69–78 (2009)
35. Woolley, J.D., Boerger, E.A., Markman, A.B.: A visit from the Candy Witch: factors influencing young children's belief in a novel fantastical being. *Dev. Sci.* **7**, 456–468 (2004)
36. Carrick, N., Quas, J.A.: Effects of discrete emotions on young children's ability to discern fantasy and reality. *Dev. Psychol.* **42**(6), 1278–1288 (2006)
37. Li, Y.H., Wang, Y.F., Chen, X.Y., Li, S., Zhang, L.M.: Do children know that fantastic events in television programs are not real? *Cogn. Dev.* **58**, 101020 (2021)
38. Metlicar, S.: Happy dragon is real, frightening dragon is not: children's fantasy-reality distinction of emotional stimuli. *Stud. Psychol.* **56**(2), 155–167 (2014)
39. DiLalla, L.F., Watson, M.W.: Differentiation of fantasy and reality: preschoolers' reactions to interruptions in their play. *Dev. Psychol.* **24**(2), 286–291 (1988)
40. Skolnick Weisberg, D., Sobel, D.M.: Young children discriminate improbable from impossible events in fiction. *Cogn. Dev.* **27**(1), 90–98 (2012)
41. Vaden, V.C., Woolley, J.D.: Does god make it real? Children's belief in religious stories from the Judeo-Christian tradition. *Child Dev.* **82**, 1120–1135 (2011)
42. Woolley, J.D., van Reet, J.: Effects of context on judgments concerning the reality status of novel entities. *Child Dev.* **77**(6), 1778–1793 (2006)
43. Cook, C., Sobel, D.M.: Children's beliefs about the fantasy/reality status of hypothesized machines, **14**(1), 1–8 (2011)
44. Dawkins, R.: Putting away childish things. *Skeptical Inquirer*, January/February, pp. 31–36 (1995)
45. Gilbert, D.T.: How mental systems believe. *Am. Psychol.* **46**, 107–119 (1991)
46. Subbotsky, E.V.: *Foundations of the Mind: Children's Understanding of Reality*. Harvard University Press, Cambridge (1993)