Characteristics of Animals in Picture Books of the Fantastic There and Back Again Stories

Kanae Hara, Naoko Koda[*]

Graduate School of Agriculture, Tokyo University of Agriculture and Technology, Tokyo, Japan

Email address:

koda@cc.tuat.ac.jp (Naoko Koda)

[*]Corresponding author

Abstract: This study quantitatively examines the characteristics of depictions of animals in 189 picture books of fantastic there and back again stories in which humans are the protagonists, and explores the interactions between humans and animals. While many animals are involved in protagonists' movement to other worlds, far more animals are uninvolved. The animals are often portrayed as having unclear age and sex. Various species have been identified, and cats are the most popular animals that assist the protagonists' movement and they may or may not opt to participate in their movement; meanwhile, crows tend to trigger the movement. Animals that are uninvolved in the protagonists' movement are characterized by their location depending on whether they are domestic animals, which tend to be shown in the world before the protagonists' movement; feral animals tend to be seen in the world after the protagonists' movement. Many animals in picture books give children a sense of security while reading from the standpoint of biophilia and promoting understanding of the story. The vagueness of animals' age, sex, and appearance can expand the imaginations of child readers. Cats, in particular, can attract humans from the inside to the outside of their living sphere with their fantastical nature associated with their ecology and history of relationships with humans as companion animals. Crows are described as having the ability to cross the real world and other realms due to their history of being worshiped by humans and their ability to fly. Fantastic there and back again stories in picture books provide opportunities for children to form perceptions of animals. Further, depictions of animals in picture books may expand children's cognition when they understand the world and form their own perspectives.

Keywords: Child Development, Fantasy, There and Back Again Stories, Human-Animal Interactions, Picture Books

1. Introduction

Picture books provide children indirect contact with animals. Moreover, they convey biological knowledge and nurture attitudes and behavior toward animals [1, 2]. For example, 4-year-olds can apply biological knowledge learned from picture books to real animals [3]. The influence of media is more significant for children who have less direct contact with animals. For example, children in urban areas who lack direct experiences with animals are more influenced by media, including picture books, in their knowledge and images of animals [1, 4]. Thus, picture books are an important medium deeply involved in the formation of human–animal interactions.

Many picture books depict both real and imaginary animals. Anthropomorphic animals frequently appear in picture books, and children are familiar with fantasy [5]. It has been argued that fantasy animals in picture books have negative effects on children's learning of biological knowledge [4, 6]. Anthropomorphic animals are shown in habitats that are distorted from reality [7]. Additionally, realistic stories with human characters are more effective than those with anthropomorphic animal characters in increasing altruistic behavior and promoting prosocial behavior in 4- to 6-year-olds [8]. Children's ability to obtain information from picture books and apply it to the real world is affected by the similarities between information and reality [9, 10]. Hence, fantasy picture books may interfere with children's learning [6]. However, fantasy stories are popular and attractive for children and provide effective learning opportunities by guiding imaginative thinking [2]. Fiction

can provide children with experiences that cannot be directly seen or touched in reality [11]. Fiction has many different stories. Many fictitious picture books for infants and primary school students are categorized as low fantasy works that add supernatural elements to the real world [12]. There and back again stories have an easy structure for children, who are constantly active in going back and forth with their developing brains and emotions [13]. There and back again stories are related to the concept of the secure base in attachment theory.

Children rely on their caregivers, who are attachment figures and form the child's secure base. When children are in crisis during their exploration, they return to their attachment figures, who by resupplying security and safety allow the children to resume their exploration. In this way, children can expand their activity range in terms of space and time in their development [14]. The secure base is deeply tied to maintaining psychological health throughout life. As such, experiences of going back and forth through both exploration in reality and simulated experiences through fiction provide children with valuable opportunities to promote their healthy development. However, research that deals with there and back again stories is limited to the work or structural theory of representative works. To the authors' knowledge, no quantitative research has examined the overall characteristics of there and back again stories. In addition, animals are beneficial to child development [15], but their status in there and back again stories is still unclear.

2. Purpose of This Study

This study quantitatively analyzes portrayals of picture books of fantastic there and back again stories in which animals appear. Specifically, the study clarifies the characteristics of animal depictions where the main characters, who are human, move between the real world and the imaginary world, and human-animal interactions are discussed.

3. Methods

This study defines fantastic there and back again stories as follows: (1) a story in which characters go to, and return from, another realm that does not exist in the real world; (2) a story that takes place in an imaginary realm (even if another place exists in the real world), the way of reaching it and the experiences the characters have there are paranormal, and the space is physically and psychologically isolated from the real world; and (3) a story that readers cannot reproduce in the real world. Moreover, this study traces the movement of the protagonist who goes to another realm and returns to the original world along with the flow of the there and back again story.

Data collection was conducted from 2020 to 2021 using Japanese picture books from a city library in Tokyo, Japan. Narrative picture books for 2- to 7-year-olds in which humans are the protagonists were surveyed. The reason is

that child readers may be more connected to human protagonists than animal protagonists, and it may be easier to apply the information obtained from picture books to the real world [8]. Among the 5,392 picture books checked, 4,009 were narrative picture books containing 272 there and back again stories. Of these, 217 picture books had human protagonists. Finally, 189 picture books with animal characters were extracted as the subjects of this study.

Table 1 shows the survey items on animal characters recorded for each picture book and each case. The definitions of behaviors by animal characters when the protagonists move to a different world are as follows: (1) *Help:* directly assisting the protagonist's movement. This involves not only physically moving the protagonist's body (e.g., a dragon takes the protagonist away to another world), but also arranging the situation or giving advice so that the protagonist can move (e.g., a mouse leads the protagonist to a mysterious place and verbally invites them to another world, or a fox invites the protagonist to a mysterious shop); (2) *Triggered:* indirectly assisting the protagonist's movement, but creating his/her route (e.g., a small bird escapes from the cage, and the protagonist travels to unrealistic countries in search of the bird); (3) *Semi-involved:* acting as a means of transportation by carrying the protagonist, rather than based on the animal's own intention (e.g., the protagonist rides a horse that the messenger took from the land of sweets, to which the protagonist is headed); and (4) *Accompany:* going to another realm and returning to the original world with the protagonist (e.g., the protagonist's cat goes to the dream world and returns with the protagonist).

The species (categories) of animals were recorded. If it was difficult to accurately identify the species based on biosensorics, due to the style of painting for children, commonly used names such as "birds" and "fish" were recorded instead.

The roles of characters in the picture books were defined as follows: protagonists are characters who play a main role in the story; supporting characters are designated in the text or engaged in dialogue; and background characters are not described in the text and have no dialogue, but only appear in the pictures [5]. The age and sex of characters were judged from the pictures, narration, and personal pronouns in the text.

This study defines three types of animal depictions in picture books based on the studies of McCrindle and Odendaal [16] and Hara and Koda [5]: (1) *real*: a state in which the animal has a realistic appearance; (2) *humanized*: a state in which the animal has a realistic appearance but speaks or thinks like a human; and (3) *anthropomorphic*: a state in which the animal stands upright and walks only on its hind legs. Some animals switch to a different type in the story [17]. In the cases, the original depiction of the animals (i.e., the appearance of the animals at their home base) was recorded because the reader's first impression of the animals would be predominant.

Regarding the locations where the animals appear, when the animal is shown in the world before the protagonist moves,

this was recorded as "pre-movement," and when the animal is portrayed in the world after the protagonist moves, this was recorded as "post-movement." When the animal was moving with the protagonist, the location was determined to be the animal's home base. When it was too difficult to establish the classification, two judges consulted with each other.

Table 1. Elements of animal characters and their classifications.

Element	Classification
Type of involvement in the protagonist's movement	Help/Trigger/Semi-involved/Accompany/Uninvolved/Other
Species	Free description
Role	Protagonist/Supporting character/Background character
Age group	Child/Adult/Senior/Unclear
Sex	Male/Female/Unclear
Depiction type	Real/Humanized/Anthropomorphic/Other
Location	Pre-movement/Post-movement/Other

4. Results

4.1. Animal Involvement in the Protagonist's Movement

Animals were categorized according to their type of involvement in the protagonist's movement, as outlined in Table 2. Many animals were involved in the protagonist's movement by helping or triggering it. However, many animals were uninvolved in the movement as well.

Table 3 shows the roles of animals in the protagonist's movement. Quite naturally, the majority of the animals involved in the protagonist's movement act as supporting characters, whereas uninvolved animals are background characters.

Table 2. Occurrence of animal involvement when protagonists moved to other worlds.

	Number of books	% (n=189)	Frequency
Help	56	29.6	79
Trigger	31	16.4	70
Semi-involved	8	4.2	10
Accompany	15	7.9	23
Uninvolved	165	87.3	899
Others	4	2.1	4

Table 3. Occurrence of involvement when the protagonist moves to another world by type of involvement and the animal's role (% in parentheses).

	Protagonist	Supporting character	Background character	Total
Help	0	72	7	79
	(0.0)	(91.1)	(8.9)	
Trigger	0	51	19	70
	(0.0)	(72.9)	(27.1)	
Semi-involved	0	8	2	10
	(0.0)	(80.0)	(20.0)	
Accompany	0	17	6	23
	(0.0)	(73.9)	(26.1)	
Uninvolved	0	270	629	899
	(0.0)	(30.0)	(70.0)	
Others[1]	4	0	0	4
	(100.0)	(0.0)	(0.0)	

[1] The protagonist transforms into an animal (mouse, duck, crane, and snake, respectively).

Table 4. Occurrence of involvement when the protagonist moves to another world by type of involvement and the animal's age group (% in parentheses).

	Child	Adult	Senior	Unclear	Total
Help	13	21	3	42	79
	(16.5)	(26.6)	(3.8)	(53.2)	
Trigger	16	7	1	46	70
	(22.9)	(10.0)	(1.4)	(65.7)	
Semi-involved	0	2	0	8	10
	(0.0)	(20.0)	(0.0)	(80.0)	
Accompany	1	0	0	22	23
	(4.3)	(0.0)	(0.0)	(95.7)	
Uninvolved	59	102	6	732	899
	(6.6)	(11.3)	(0.7)	(81.4)	
Others	2	2	0	0	4
	(50.0)	(50.0)	(0.0)	(0.0)	

Table 5. Occurrence of involvement when the protagonist moves to another world by type of involvement and the animal's sex (% in parentheses).

	Male	Female	Unclear	Total
Help	32	9	38	79
	(40.5)	(11.4)	(48.1)	
Trigger	23	4	43	70
	(32.9)	(5.7)	(61.4)	
Semi-involved	2	0	8	10
	(20.0)	(0.0)	(80.0)	
Accompany	3	1	19	23
	(13.0)	(4.3)	(82.6)	
Uninvolved	67	53	779	899
	(7.5)	(5.9)	(86.7)	
Others	2	2	0	4
	(50.0)	(50.0)	(0.0)	

Table 4 shows the age groups of the respective animals in the protagonist's movement. In the most frequent cases, their age is unclear for all types of involvement.

Table 5 shows the sex of the animal in the protagonist's movement. In all types of involvement, sex is most often depicted unclearly, although the animals that help the protagonist's movement are more often male compared with the other types of involvement.

Table 6 outlines the depiction types of animals in the protagonist's movement. Among the animals that help the protagonist's movement, humanized animals are the most frequent. In other types of involvement, the animals are most often shown realistically.

Table 6. *Occurrence of involvement when the protagonist moves to another world by type of involvement and description of the type of animal (% in parentheses).*

	Real	Humanized	Anthropomorphic	Others	Total
Help	22	36	19	2	79
	(27.8)	(45.6)	(24.1)	(2.5)	
Trigger	30	26	12	2	70
	(42.9)	(37.1)	(17.1)	(2.9)	
Semi-involved	8	2	0	0	10
	(80.0)	(20.0)	(0.0)	(0.0)	
Accompany	18	2	3	0	23
	(78.3)	(8.7)	(13.0)	(0.0)	
Uninvolved	625	121	150	3	899
	(69.5)	(13.5)	(16.7)	(0.3)	
Others	2	1	1	0	4
	(50.0)	(25.0)	(25.0)	(0.0)	

Table 7 outlines the locations of animals depicted in the protagonist's movement. In total, more animals appear in the world after the movement than before it. The animals that trigger the protagonist's movement or accompany him/her are more often shown in the world before the movement than after it. In contrast, the animals that help the protagonist's movement, are semi-involved in the movement, or are uninvolved are portrayed more frequently in the world after the movement than before it. Thus, the frequency of animals' appearance changes according to the situation of the story.

Table 7. *Occurrence of involvement when the protagonist goes to another world by type of involvement and the animal's location (% in parentheses).*

	Pre-movement	Post-movement	Others	Total
Help	9	67	3	79
	(11.4)	(84.8)	(3.8)	
Trigger	45	24	1	70
	(64.3)	(34.3)	(1.4)	
Semi-involved	2	8	0	10
	(20.0)	(80.0)	(0.0)	
Accompany	22	0	1	23
	(95.7)	(0.0)	(4.3)	
Uninvolved	285	600	14	899
	(31.7)	(66.7)	(1.6)	
Others	1	3	0	4
	(25.0)	(75.0)	(0.0)	

4.2. Species

The animals' species were investigated in terms of type of involvement in the protagonist's movement. In 79 cases where the animals help the protagonist's movement, 10 involves cats, 6 involves foxes, and 5 involves mice in descending order. Various animals help the protagonist's movement; 43 species were identified. The animals trigger the movement of the protagonist in 70 cases. Crows account for the most frequent in 7 cases, followed by dogs and bears (5 cases each). Diverse animals (35 species in total) trigger the protagonist's movement. The overall number of occurrences is low (10 cases) for animals that are semi-involved in the protagonist's movement. Horses are the most common with 3 cases, followed by chickens with 2 cases. The animals accompany the protagonist's movement in 23 cases. Cats are the most common with 10 cases, followed by dogs with 5 cases. Among the 9 species confirmed to accompany the protagonists, 6 were mammals (cats, dogs, pigs, cows, sheep, and goats).

There are 899 cases where the animals are uninvolved in the protagonist's movement. Cats are the most common with 70 cases. Table 8 illustrates the locations of the top 10 most frequently depicted animals that are uninvolved in the movement. The locations where the uninvolved animals appear differ according to the species. Cats and birds appear in similar frequency both before and after the worlds where the protagonist moves. Dogs, horses, and chickens are relatively common in the world before the movement. On the other hand, mice, rabbits, fish, foxes, and bears are relatively common in the world after the movement.

Table 8. *Frequency of appearance of the top 10 animals that are uninvolved in the protagonist's movement by the location where they appear.*

Species	Pre-movement	Post-movement	Others	Total
Cat	34	35	1	70
Dog	36	15	3	54
Bird	25	25	1	51
Mouse	8	30	2	40
Rabbit	10	23	1	34
Horse	19	10	0	29
Fish	8	19	1	28
Chicken	17	8	0	25
Fox	6	17	0	23
Bear	0	22	1	23

5. Discussion

5.1. Overall Characteristics

Many animals are portrayed in fantastic there and back again stories—not only characters that are involved in the protagonist's movement, such as by helping or triggering it, but also many animals that are uninvolved in the protagonist's movement. The numerous appearances of animals in narrative books are consistent with previous studies [7].

The appearance of many animals in picture books may be related to the biophilia hypothesis proposed by Wilson [18], which insists that humans have an innate tendency to prefer life, such as animals, plants and nature. Accordingly, humans' desire for nature is not limited to use of the material environment, but is also linked to their emotional, cognitive, aesthetic, and spiritual development [19]. Biophilia also serves to help people recover from stress [20]. The biophilia hypothesis explains the positive effects on humans in human-animal interactions and animal assisted interventions [21]. Thus, nature and living things bring about recovery from fatigue and psychological stability for humans. Many animals examined in this study are expected to give children a sense of security while reading, promoting understanding of the story. Many animals in picture books are always visible to the reader, even if they are background characters. In addition, more animals appear in the worlds where the protagonists arrive. When children enjoy stories by projecting themselves onto the protagonist [22], animals may alleviate the anxiety and helplessness that the protagonist faces when he/she moves to another world.

Regarding comprehension of the story, children acquire the ability to distinguish between fantasy and reality between 3 and 5 years of age [11, 23]. However, feelings of fear prevent them from comprehending reality and fantasy [24, 25]. There and back again stories sometimes express stress associated with separation anxiety because the protagonist leaves a familiar place and goes to an unknown world. Simultaneously, child readers might empathize with the emotions described and feel fear. Many animals are in the realm to which the protagonist moves, even in the world before they move, in preparation, which may help children feel at ease and enjoy the worlds in the story. Animals in picture books thus relieve children's excessive stress while they read and support story comprehension.

5.2. Age, Sex, and Description Type

The age and sex of the animals that appear in the stories are mostly unclear. Most of the animals are portrayed realistically, but the most frequent cases of the animals that help the protagonist's movement are humanized. These results imply that the animals are depicted realistically, emphasizing that they are different from humans in fantastic there and back again stories with human protagonists. The boundaries between humans and animals are highlighted by showing animals as realistic figures [26]. Furthermore, an unclear age and sex can create a psychological distance from humans and allow child readers to fantasize.

The depiction of animals is also confirmed in the animals that help the protagonist's movement. The ability to lead the protagonist into another world is unrealistic and paranormal. It is reasonable to take the form of anthropomorphism, which is the most fantastical type of portrayal. By intentionally applying a realistic appearance to humanized animals, a contrast with humans is created, and intermediaries between the real world and another realm can be illustrated with an ability beyond human understanding. However, many animals that help the protagonist move are shown as male next to an unclear sex. Animals in picture books tend to be portrayed as male [5]. In addition, when authors make an animal appear as a helper by providing the animal's context, it might be convenient to assign a sex to the animal because of its deep involvement in the story. As for the depiction type, humanization rather than anthropomorphosis can mark the difference from humans. The more realistic the animal's appearance becomes, the more difficult it is to add age-related information to the animal. It is possible that authors assign animal characters as male to maintain a sense of distance between humans and animals.

Fantastic depictions of animals in picture books have the potential to adversely affect children's learning from an ecological perspective [1, 4, 6, 7]. However, the results of this study indicate that fantastic depictions of animals may contribute to the formation of the reader's image of animals and a sense of value by allowing readers to sense the boundary between humans and animals.

5.3. Species

Characteristic outcomes were found in cats and crows when the protagonist moves, and the location of animals that are uninvolved in the protagonist's movement is identified.

5.3.1. Cats

Cats are the most popular animals in terms of three factors, i.e., helping the protagonist's movement, accompanying the protagonist, and being uninvolved in the protagonist's movement. The cats are very fantastical animals with the ability to cross boundaries between worlds compared to other species. Cats are the most frequently depicted animals in picture books; they are transformed from anthropomorphic to realistic, or vice versa [21].

Since ancient times, cats have been treated as animals with mysterious powers that make humans feel a sense of fantasy [27]. Cats were originally domesticated to protect crops from rodents, and were gradually revered as sacred beasts—for example, the ancient Egyptian god Bast. Cats' pupils change sharply depending on the light, and they can see things even in the dark. Humans believed that cats' pupils change according to the rotation of the sun, and that the sun sees the lower world through a cat's eyes at night [28]. However, cats were strongly persecuted in medieval Europe due to their association with witches and demons, their physical characteristics, semi-domestic and semi-feral lifestyle, and

strong sense of independence [27]. Similar historical changes in human attitudes toward cats took place in the East [28].

Today, cats are popular as companion animals. Japanese perceive familiar animals with the unique awareness of spatial discrimination [29]. Japanese regard a clean space as *uchi* (inside) and an unclean space as *soto* (outside), separating living spaces for humans as *uchi* and spaces for wild animals as *soto*. Companion animals live in the boundary between humans living inside and animals outside. Cats often transform into humans (more so compared to dogs) in Japanese folktales. Whereas dogs were kept outdoors, cats have been kept indoors and behave freely due to their low sociality; they can freely come and go from a human's house to the outdoors. Thus, cats are highly mobile animals that physically and psychologically come and go between human living spaces and the outside world. By giving a fantastic image to cats that straddles the space, cats make humans feel connected to another realm, leading humans in daily life to another place. There is also a perception in the West that cats are magical animals with the ability to travel across worlds in fantasy works, such as *The Adventures of Lyra* by P. N. O. Pullman in 1995 and *Through the Looking Glass* by L. Carroll in 1871. The characteristics of cats in these works are supposedly derived from myths and fables [30].

In this study, cats are the most common animals that do not participate in the protagonist's movement, probably because they are shown as animals that can exist in both the world before and after movement due to their mobility. The appearance of cats in the fantastic there and back again stories highlights cats' physical characteristics and their relationships with humans.

5.3.2. Crows

Crows are the most common animal that trigger the protagonist's movement. The difference is similar to dogs and bears, which are the second most frequently appearing animals; the factors of each work cannot be denied. However, the crows should be noted in terms of their image.

Today, crows are associated with negative images and ominous events. The reason is that crows are conspicuous with a black appearance and wisdom, while they are familiar birds to humans. In the Christian world, crows are considered witches' messengers because their habit of appearing in graveyards is associated with death [31]. The English etymology of the raven is derived from the appearance of crows that swarm over carcasses and devour the flesh [32].

In modern times, crows are often regarded as villains and are feared, but in the past, they were widely regarded as messengers of the gods in Japan, China, Egypt, and other countries [31]. In Japan, until around 1200 AD, crows ate human corpses at funerals for commoners. From this custom, crows came to be applied to reincarnation of the dead or the messenger of the Japanese sun god and were treated with reverence as lords of creatures in folk beliefs [33]. In the West, crows were also messengers of gods or incarnations of kings, e.g., the folklore of Hugin and Munin in Scandinavia

and King Arthur in the UK. This is because crows are strong omnivores, eating things that humans cannot eat, and clever enough to snatch prey from eagles and wolves, which are much larger than themselves [33, 34]. In addition, crows can fly freely beyond the reach of humans. In Japan, it was thought that birds could travel freely between different worlds because they have wings [31]. Derived from this, crows were believed to serve as pilots to guide dead spirits safely to the afterlife [33]. The image of crows and the fantasy assumed from their ability to fly are prominently displayed in the history of interactions between humans and crows. Birds' ability to fly is highly imaginative beyond human knowledge, and birds are physically and psychologically distant from humans. It is reasonable to assume that crows acted as a trigger to get involved in humans' movement from a distance, rather than directly helping them in fantastic there and back again stories. It is uncommon to see crows scavenging for carrion or being worshiped as messengers of the gods in modern life. However, picture books might contribute to the formation of the image of crows, such as traditional impressions, fantasy, and mystery.

5.3.3. Locations of Animals That Are Uninvolved in the Protagonist's Movement

In the analysis of locations of the top 10 animals that appear often, cats and birds appear with similar frequency in the pre- and post-movement worlds. Dogs, horses, and chickens are mostly depicted before the movement, while rats, rabbits, fishes, foxes, and bears are mostly shown after the movement. These are related to the images and values that humans have toward the animals.

Cats and birds have the ability to freely cross the boundary between the real world and imaginary realms as stated above about cats and crows. They are depicted as animals that can exist in both worlds. There are several countries where people believe that birds carry the spirits of the dead [33]. Animals' physical abilities have been imagined as skills that humans could not acquire. Fantastic images of animals are presented in modern cultural works, such as picture books.

The asymmetry of animal depictions in the pre- and post-movement worlds is related to humans' use of animals. Dogs, horses, and chickens are domestic animals that are often portrayed in the world before the movement. Hence, it is reasonable to appear in the world before moving, which is the protagonist's daily world, and is interpreted as animals living with humans. On the other hand, mice, rabbits, fishes, foxes, and bears are positioned as feral animals that live outside of human habitation; they are often shown in the post-movement world. Mice may live in human spaces such as attics, but they are psychologically uninvited into the living area and are seen as pests. The mice in the picture books reflect the impression of original wild mice with long tails, not as companion animals like guinea pigs and hamsters. Similarly, rabbits and fishes, which are often illustrated in the post-movement world, are common as domesticated animals today, but like foxes and bears, they

were traditionally seen as wild animals and were hunted. Shimatani and Koda [26] clarify that the depiction of dogs and cats in picture books does not reflect the image of dogs and cats at the time of publication, but they are shown with the impression that it has been widely accepted by society. The characteristics of the locations of mice, rabbits, and fishes in this study extend and strengthen the results of Shimatani and Koda [26] to different species. The asymmetry of the animals portrayed in the real world and another realm has the effect of conveying to the reader the changes of situations and the flow of the story.

6. Conclusion

The results of quantitatively analyzing the depiction of animals in picture books of fantastic there and back again stories indicate that animals convey imaginary impressions that one would not encounter in the real world. The imaginativeness of the animals reflects the image that humans have accumulated based on the physical characteristics of each species and the history of human-animal interactions. Furthermore, picture books may provide opportunities for children to form images of animals. In other words, when children understand the world and form their own perspectives, portrayals of animals in picture books might expand their cognition.

On the other hand, this study also has shortcomings. Due to the quantitative analysis to grasp the tendencies in many picture books, the data with a small number of occurrences were excluded from discussion. In addition, the authors' intentions and messages became vague by cutting off the flow of the story in each picture book. Future studies would be valuable in qualitatively scrutinizing the content of various experiences and growth that the protagonist gains by traveling to and from another world.

Acknowledgements

References

[1] Herrmann, P., Waxman, S. R., & Medin, D. L. (2010) Anthropocentrism is not the first step in children's reasoning about the natural world. Proceedings of the National Academy of Sciences of the United States of America, 107 (22), 9979-9984. doi: 10.1073/pnas.1004440107

[2] Strouse, G. A., Nyhout, A., & Ganea, P. A. (2018) The role of book features in young children's transfer of information from picture books to real-world contexts. Frontiers in Psychology, 9, art. 50. doi: 10.3389/fpsyg.2018.0005

[3] Ganea, P. A., Ma, L., & DeLoache, J. S. (2011) Young children's learning and transfer of biological information from picture books to real animals. Child Development, 82 (5), 1421-1433. doi: 10.1111/j.1467-8624.2011.01612.x

[4] Waxman, S., & Medin, D. (2007) Experience and cultural models matter: Placing firm limits on childhood anthropocentrism. Human Development, 50, 23-30. doi: 10.1159/000097681

[5] Hara, K., & Koda, N. (2020) Quantitative analysis of anthropomorphic animals in picture books: Roles and features of animals. International Journal of Literature and Arts, 8 (6), 308-315. doi: 10.11648/j.ijla.20200806.11

[6] Ganea, P. A., Canfield, C. F., Simons-Ghafari, K., & Chou, T. (2014) Do cavies talk? the effect of anthropomorphic picture books on children's knowledge about animals. Frontiers in Psychology, 5, art. 283. doi: 10.3389/fpsyg.2014.00283

[7] Marriott, S. (2002) Red in tooth and claw? Images of nature in modern picture books. Children Literature in Education. 33, 175–183. doi: 10.1023/A:1019677931406

[8] Larsen, N. E., Lee, K., & Ganea, P. A. (2018) Do storybooks with anthropomorphized animal characters promote prosocial behaviors in young children? Developmental Science, 21, 3. doi: 10.1111/desc.12590

[9] Richert, R. A., Shawber, A. B., Hoffman, R. E., & Taylor, M. (2009) Learning from fantasy and real characters in preschool and kindergarten. Journal of Cognition and Development, 10, 1-26. Doi: 10.1080/15248370902966594

[10] Richerst, R. A., & Smith, E. I. (2011) Preschoolers' quarantining of fantasy stories. Child Development, 82 (4), 1106-1119. doi: 10.1111/j.1467-8624.2011.01603.x

[11] Walker, C. M., Gopnik, A., & Ganea, P. A. (2015) Learning to learn from stories: Children's developing sensitivity to the causal structure of fictional worlds. Child Development, 86 (1), 310-318. doi: 10.1111/cdev.12287

[12] Ikuta, Y. (2018) E o yomukoto: Fantajiehon o yomitoku kodomo no kusosekai no ehon hyogen [The process of reading a picture: Read fantasy picture book-Picture book expression of children's fantasy world]. In T. Fujimoto & Y. Ikuta (Eds.) Interpret a picture: Introduction to picture books (pp. 27-34). Tokyo: Minerva Shobo (in Japanese).

[13] Seta, T. (1985) Ehonron [Theory of picture books]. Tokyo: Fukuinkan Shoten Publishers (in Japanese).

[14] Bowlby, J. (1988) A secure base: clinical applications of attachment theory. London: Tavistock/Routledge.

[15] Endenburg, N., and Baarda, B. (1995) The role of pets in enhancing human well-being: Effects on child development. In I. Robinson (Ed.) The Waltham book of human-animal interaction: Benefits and responsibilities of pet ownership (pp. 7-17). Oxford: Pergamon Press.

[16] McCrindle, C. M. E., and Odendaal, J. S. J (1994) Animals in books used for preschool children. Anthrozoös, 7 (2), 135-146. doi: 10.2752/089279394787001998

[17] Hara, K., and Koda, N. (2021) Conversion in depictions of anthropomorphic animals in picture books. International Journal of Literature and Arts, 9 (6), 374-383. doi: 10.11648/j.ijla.20210906.27

[18] Wilson, E. O. (1984) Biophilia. Cambridge MA: Harvard University Press.

[19] Kellert, S. R. (1993) The biological basis for human values of nature, In S. R. Kellert & E. O. Wilson (Eds.) The biophilia hypothesis (pp. 42-69). Washington: Island Press.

[20] Ulrich, R. S. (1993) Biophilia, biophobia, and natural landscapes. In S. R. Kellert & E. O. Wilson (Eds.) The biophilia hypothesis (pp. 73-137). Washington, DC: Island Press.

[21] Beetz, A. M. (2017) Theories and possible processes of action in animal assisted interventions. Applied Developmental Science, 21 (2), 139-149. doi: 10.1080/10888691.2016.1262263

[22] Matsuoka, K. (1987) Ehon no sekai, kodomo no sekai [Picture books' world: Children's world]. Tokyo: Japan Editor School Press (in Japanese).

[23] Woolley, J. D., & Cox, V. (2007) Development of beliefs about storybook reality. Developmental Science, 10, 681-693. doi: 10.1111/j.1467-7687.2007.00612.x

[24] Samuels, A., & Taylor, M. (1994) Children's ability to distinguish fantasy events from real-life events. British Journal of Developmental Psychology, 12 (4), 417-427. doi: 10.1111/j.2044-835x.1994.tb00644.x

[25] Carrick, N., & Quas, J. A. (2006) Effects of discrete emotions on young children's ability to discern fantasy and reality. Developmental Psychology, 42 (6), 1278-1288. doi: 10.1037/0012-1649.42.6.1278

[26] Shimatani, H., & Koda, N. (2021) Dogs and cats and their relationships with humans as depicted in picture books. International Journal of Literature and Arts, 9 (2), 63-69. doi: 10.11648/j.ijla.20210902.13

[27] Thorne, C. (1997) Evolution and domestication, In Thorne, C. (Ed.) The Waltham book of dog and cat behaviour. Oxford: Pergamon Press.

[28] Hiraiwa, Y. (1992) Neko no rekishi to kiwa [History and strange stories on cats]. Tokyo: Tsukiji Shokan Publishing (in Japanese).

[29] Hanazono, M. (2013) "Sumiwake" no dobutsukan [Attitudes toward animals in "segregation"]. In O. Ishida, S. Hamano, M. Hanazono & A. Setoguchi (Eds.), Japanese attitudes toward animals (pp. 104-123). Tokyo: University of Tokyo Press (in Japanese).

[30] Lu Guin, U. K. (2009) Cheek by jowl. Washington: Aqueduct Press.

[31] Kamon, N. (2014). Reino dobutsukan [Psychic animal museum]. Tokyo: Shueisha (in Japanese).

[32] Savage, C. (2015) Crows. Vancouver: Greystone Books.

[33] Ota, S. (2007) Karasu wa honto ni warumono ka [Are crows really evil?]. Fukuoka: Genshobo (in Japanese).

[34] Matsubara, H. (2013) Karasu no kyokasho [Textbook on crows]. Tokyo: Raichosha (in Japanese).