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CHILDREN'S MENTAL STATE TALK, EMPATHY, AND ATTACHMENTS TO COMPANION ANIMALS

Children's emotional and mental worlds are often influenced by their experiences with companion animals. This study explored 77 (50 g; 27 b) 6- to 12-year-old children's empathy; perceived companion animal friendship, comfort, and bonding; and mental state talk in conversations about their interactions with their companion animal. Children completed self-report questionnaires and responded to two moral stories about companion animals. Results showed that higher levels of children's mental state talk were related with high levels of empathy for companion animals. Compared to boys, girls reported significantly stronger companion animal friendships, and that they received more comfort from their companion animals. Results also showed that, for girls only, higher levels of perceived companion animal friendship were related to higher levels of emotional comfort received. The findings can inform humane education programs that promote mental state talk, moral agency, and relationships.

Keywords: mental state talk, companion animals, empathy, friendship, humane education, moral language, gender differences

Companion animals, or animals that children choose to have as emotional companions or friends, commonly share a meaningful place in the lives of children, youth, and their families. Past research shows that up to 70% of all American households with children younger than six years and 78% of all households with children older than six years included companion animals (Melson, 2003). Children's companion animals are often diverse and can include dogs, cats, fish, birds, reptiles, and farm and forest animals (e.g., horses, cows, raccoons and chipmunks), and all share an emotionally meaningful relationship with children and hold special status in their lives (Amiot,

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Bastien, & Martens, 2016). Despite the commonality of child-animal interactions, research has just begun to explore child–animal relationships and the role these companion animal friendships play in children's mental and emotional lives. Thus, it is critical to conduct research into the "complex web" of psychological and ecological factors that may influence these relationships, both positively and negatively, to promote humane animal treatment.

Past research shows that the ability to understand thoughts, beliefs, and emotions in ourselves and others (i.e., theory of mind or mental state understanding) helps us to develop social interactions and relationships (Cassels, White, Gee, & Hughes, 2017; Etel & Slaughter, 2019). However, with the exception of a few studies (Daly & Suggs, 2010; Myers, Saunders, & Garrett, 2003, 2004), relatively less research has explored children's use of mental state talk and children's relationships with companion animals. This is surprising, given that a growing body of research indicates that children's emotional attachments and relationships with companion animals are associated with many positive physiological, cognitive, socio-emotional, and moral outcomes for children (Batson et al., 2003; Daly & Suggs, 2010; Esposito, McCune, Griffin, & Maholmes, 2011; Endenburg & van Lith, 2010; O'Haire, 2010).

Past studies show that companion animals may be especially significant to young people, as they help them in their social and emotional development by providing opportunities to acquire skills such as empathy, responsibility, and caretaking (Seivert, Cano, Casey, Johnson, & May, 2016). Children and early adolescents report strong emotional bonds with their companion animals (Melson, 2001, 2003), spontaneously list companion animals when asked to name close friends and providers of social support (Bryant, 1992), and rely on their companion animals as playmates and confidants (Cassels et al., 2017). However, little is known about the connections between children's experiences with companion animals within a learning context, and their social and emotional competencies.

Mental State Talk and Children's Friendships

Human–animal interactions are affected by beliefs and emotions about companion animals' minds (Cassels et al., 2017). The development of beliefs or mental states about animal minds involves the belief that nonhuman animals have the ability to think, feel, and experience emotions. Such a mental state understanding is an important cognitive and emotional process that may influence the moral status of companion animals, attitudes toward companion animals, and subsequent companion animal welfare (Melson, 2001).

In addition to beliefs about animal minds, affective empathy or the ability to understand emotions in others has been referred to as an emotional process that affects the way children think and treat companion animals (Melson, 2001). Similar to research on beliefs about companion animals' minds that

involves the attribution of mental capacities to companion animals, studies on Theory of Mind or mental state understanding show that by the age of four, most children begin to develop a range of concepts that relate to human minds (Hughes, 2011). Such concepts include an understanding of desires, the origins of knowledge, an understanding that people may have false beliefs and, among older children, an understanding of personality differences and unobservable cognitive processes. That is, the understanding of minds and emotions may depend on a multitude of social and cognitive factors such as language and memory development, as well as social interaction experiences with friends and family – including companion animals.

Research to date on children's developing social cognitive skills, including Theory of Mind, has focused largely on the interconnections among children's understanding of other people's thoughts and emotions (Hughes, White, & Ensor, 2014). However, past research has largely overlooked how children's engagement with companion animals may influence their theory of mind development (and vice versa), as studies on children's experiences with companion animals are often marginalized in the field of human-animal interaction studies (Muldoon, Williams, & Currie, 2019; Tipper, 2011). For example, theory of mind research may help to explain why companion animals are commonly perceived to have higher cognitive and emotional capacities than other animals (Cassels, et al. 2017).

Regarding emotions, past research suggests that there exists a widespread belief in the emotional lives of animals, especially among adult companion animal owners. Furthermore, although emotions in animals are often seen as "common sense", there remains, to date, sparse empirical evidence to further our understanding of the connections among children's mental and moral life, their mental state talk, and their companion animal relationships. Research reveals that children's ability to understand the mental and moral worlds of self and others, or theory of mind, is associated with socio-emotional, moral and educational competencies (Hughes et al., 2014; de Waal, 2016; de Waal & Sherblom, 2018). Similarly, social and emotional reasoning skills have been positively linked to prosocial actions and supportive relations with peers and companion animals (Cassels et al., 2017; Lagatutta, 2017). In addition, past studies show that socio-emotional and relational benefits are also associated with children's (and adults') emotional attachments with their peers as well as their companion animals (Fine, 2006; Wong et al., 2017. However, little is known about how children understand their companion animal friendships and the emotional comfort they receive from their companion animals, particularly in how they express their mental and emotional worlds through their ability to empathize and engage in mental state talk.

Recent research shows that helping children to learn about kindness, respect, and compassion towards companion animals has the potential to transfer to human relations (Arbour, Signal, & Taylor, 2009; Daly & Suggs, 2010;

de Waal, 2016). Further, helping children to learn about kindness toward companion animals may be an effective strategy to help children who are socially withdrawn to gain self-confidence and become less anxious (Wong et al., 2017, and to prevent peer victimization and school violence (Faver, 2010). Similar to how supportive friendships with peers can promote children's healthy social emotional functioning (Borowski, Zeman, & Baunstein, 2018), friendships with companion animals may also help children to learn how to develop a sense of moral agency or the power to refrain from acting inhumanely (Bandura, 2016), and to socialize their emotions in psychologically healthy and constructive ways (Hoagwood, Acri, Morrissey, & Peth-Pierce, 2017).

The Present Study

The current study draws on social cognitive, psychoeducational and ecological theories that claim our mental and moral life and social interactions with friends, family, and animal companions are intricately and reciprocally related and co-dependent (Bandura, 2016; Bronfenbrenner, 1977; Bruner, 1996; Mueller, 2014). Additionally, this study draws on past findings that show children's high emotional quality friendships (Thornberg et al., 2017), and emotionally intimate conversations with their companion animals were related to their empathy, or lack of moral disengagement (Bryant, 1992). Building on this theoretical and empirical background, this study investigated children's empathy, or the ability to share emotions, their perceptions of their friendships with their companion animals, and the amount of emotional comfort they receive from them. In addition, we studied the amount of mental state talk in children's conversations about companion animals.

Given our interest in children's perceptions of their companion animals, we chose to investigate children within a summer camp that focused on human-companion animal relationships. This summer camp included instructor-facilitated activities and informative sessions on companion and farm/forest animals and their role in humans' lives. For example, activities included experiences with animals, social games and puzzles, and other activities where speakers focused on respecting and understanding companion animals, as well as wild and farm animals (see Tardif-Williams & Bosacki, 2017 for further description of camp setting and program).

This exploratory study was guided by the following research questions: Do links exist among children's mental state talk about their companion animal friendships, their perceived level of emotional comfort received from their companion animals, and their empathy skills directed toward companion animals? Based on previous research findings, we expected to find positive relations among children's empathic abilities toward companion animals; mental state talk; positive perceptions of their companion animal friendships; and their perceived level of bonding with, and emotional comfort received

from, their companion animals. This hypothesis was based on the evidence noted above that suggests reciprocal and interdependent links among mental state talk, empathic skills, and relationships with peers and companion animals (Fine, 2006).

Regarding gender differences, contradictory evidence exists on the role of gender in children's mental state talk and companion animal friendships. More specifically, past research shows that girls often score higher than boys on emotional language (Bryant, 1992; Maftei & Holman, 2019; Muldoon, Williams, & Lawrence, 2015; Muldoon, Williams, & Currie, 2019; Tardif-Williams & Bosacki, 2017), and engage in more comforting behaviors and adopt sad or understanding expressions when they observe another's discomfort or unease (Connellan, Baron-Cohen, Wheelwright, Batki, & Ahluwalia, 2000; Hoffman, 1977). However, contrary evidence for gender differences has been found in children's perceptions of peer and companion animal friendships. For example, drawing on studies of peer relationships, studies show that sharing of confidence and emotional support are more vital to female friendships and to making friendships during childhood and adolescence (Fine, 2006). Similarly, with respect to companion animals, studies show that girls and adolescent females may be more likely to report that they share closer relations with companion animals than boys (Cassels et al., 2017; Muldoon et al., 2019). In contrast, other studies have found the opposite: Boys reported closer relationships with companion animals (Kurdek, 2009). Therefore, in this study, we explored the possibility of gender-related differences (with gender of child being self-identified) among the outcome measures, but we did not make any specific predictions regarding gender-related differences.

Method

Participants and Procedures

This mixed-method study gathered both quantitative and qualitative data from 77 children (50 girls; 27 boys) aged from 6.1 years to 12.67 years (M = 9.32 years; SD = 1.73 years). The sample of children was drawn from the Southern Ontario, Canada region and represented a diversity of socio-economic backgrounds. The majority of children lived in homes with companion (and not farm/forest) animals including dogs, cats, fish, turtles, and lizards (see Tardif-Williams & Bosacki, 2017 for more details on the sample characteristics, the summer camp curriculum and the children's summer camp experiences). The children were asked to indicate on their questionnaire their preferred gender identity (girl or boy).

The children participated in a five-day long educationally-based summer camp program, designed to encourage respectful, caring, gentle, and supportive interactions between children and companion animals through the instruction

of humane education curriculum (see Tardif-Williams & Bosacki, 2017). Data collection took place during eight, one-week sessions (July to August 2011) at a Society for the Prevention of Cruelty to Animals (SPCA), and the present study focused on data from the first day of the 5-day long camp. The testing session lasted approximately 1.5 hours.

Upon receiving university ethical clearance, parental consent (in writing) and children's verbal consent, the children were group-administered (six to eight children) four paper and pencil self-report questionnaires. Following test administration, children were asked to draw a picture of themselves playing with their companion animal. Children who did not participate in the study remained in the room with the group and worked on a similar activity related to companion animals (see Tardif-Williams & Bosacki, 2017 for further details).

Measures

Empathy for companion animals. This 4-item, three-point Likert scale self-report measure was developed for use in this study by adapting Bryant's (1992) Index Measure of Empathy for Children and Adolescents, and included showing children pictures of companion animals and asking questions such as "Here is a picture of companion animal, how sad would it make you to see the companion animal get hurt?" The child circled one of the following three responses: (3) *really sad*, (2) *a little sad* or (1) *not sad* with higher scores representing greater empathic concern for companion animals. Cronbach's alpha for this scale was $\alpha = .59$.

Companion animal bonding. The Companion Animal Bonding Scale (CABS) is an 8-item, five-point Likert scale which measures the extent of child-animal activities with a focus on the perceived quality of the relationship between the child and his or her companion animal, such as their cat or dog (Poresky, Hendrix, Mosier, & Samuelson, 1987). Children were asked to state how much they agreed or disagreed with each statement using the following Likert scale: (5) *always*, (4) *generally*, (3) *often*, (2) *rarely* and (1) *never*. For example, "How often do you feel that you have a close relationship with your companion animal?" and "How often do you hold, stroke, or pet your companion animal?" Children's scores on the 8 items were then added to obtain an overall CABS score. Higher scores characterized more perceived bonding between the child and his or her companion animal. Cronbach's alpha for this scale was $\alpha = .61$.

Pet friendship. The Pet Friendship Scale (PFS) is a 26-item, five-point Likert scale which measures the emotional relationship between the child and his or her pet or companion animal (Davis, 1995). Children were asked to state the extent to which each statement was like them and their companion animals using the following Likert scale: (5) *exactly like*, (4) *very much like*, (3) *pretty much like*, (2) *a little bit like*, and (1) *not like*. For example, "I like spending time with you" and "I go to you when I'm lonely." Children's scores

on the 26 items were then added to obtain an overall PFS score. Higher scores characterized a greater shared friendship between the child and his or her companion animal. Cronbach's alpha for this scale was $\alpha = .93$.

Comfort from companion animal. The Comfort from Companion Animal measure (CFCA) is an 11-item four-point Likert scale which measures the amount of perceived comfort that an owner receives from his or her companion animal (Zasloff, 1996). For example, "My companion animal makes me feel loved" and "Having a companion animal gives me something to love." This scale was developed to be more generalizable to several companion animals including cats and birds, rather than capturing only human-dog interactions such as training and walking one's dog. Children were asked to state how much they agreed or disagreed with each statement using the following Likert scale: (4) *strongly agree*, (3) *agree*, (2) *disagree*, and (1) *strongly disagree*. Children's scores on the 11 items were then added to obtain an overall CFCA score. Higher scores characterized a higher level of comfort shared between the child and his or her companion animal. Cronbach's alpha for this scale (on the day of the current study) was $\alpha = .83$.

Moral narratives about companion animals. Based on past research that suggests children's mental state and moral understanding can be assessed by responses to socially ambiguous narratives (Bosacki, 2013; Hughes, et al., 2014; Lagatutta, 2017; Maftei & Holman, 2019). Each child was tested individually and was read two brief narratives that consisted of a moral dilemma encountered by a child in an interaction with a companion animal. For example, one narrative, "Cat stuck in a tree", was as follows: A girl named Linda is walking home from school one day and she sees a cat stuck in a tree. Another example was "3-legged cat": A girl named Linda is walking home from school one day and she sees a woman holding a cat with 3 legs.

Each story was followed by a series of 6 questions regarding the emotional and mental state of the child protagonist and the companion animal such as 1) How do you think the cat feels? 2) What do you think the cat is thinking? 3) What does Linda think? 4) How do you think Linda feels? 5) How would you feel when you see the cat? 6) What would you think and why? The order of the stories was counterbalanced and there were no order effects.

Children's responses and justifications were audio-recorded and then transcribed. Reponses were coded for total word count, and specific language including cognition words (e.g., think, wonder, believe, doubt, etc.) and emotion words (e.g., happy, sad, angry, etc.). Proportionate codes of cognition and emotion words were computed by dividing the total amount of cognition and emotion words by the total words overall to obtain a percentage of cognition and emotion words. For example, if a participant's response included 10 emotion words and the total word count of their response was 100 words, then their emotion word proportion score would be .10 or 10/100.

Responses to the vignettes were also coded according to the cognitive complexity of the mental state terms used in each of the responses for the animal (e.g., dog, cat), child protagonist (e.g., character in vignette), and child participant respectively. For example, in response to the question of "How do you think the cat feels?", emotion words were coded according to complexity such that 0 = I don't know/tangential, 1 = simple or basic emotions such as 'happy, sad', and 2 = complex or moral emotions such as ignored or worried. Accuracy and trustworthiness of coding was ensured through reliability coding by two trained independent study researchers. During this process, researchers discussed the codes and achieved inter-rater reliability of 0.91; all disagreements were discussed until a consensus was reached (see Tardif-Williams & Bosacki, 2017 for further detail regarding the coding of the stories).

Results

For each test variable, descriptive statistics were conducted for the total sample and for girls and boys separately. Gender analyses were also conducted with t-test comparisons with gender as a factor, as well as separate correlational analyses for girls and boys. The mean scores and standard deviations for the total sample, and for the girls and boys separately, are presented in Table 1.

Table 1. Mean Scores on Empathy, CABS, PFS, CFCA, % of Cognitive MST Words and % of Emotion MST Words.

	Total Sample (*N* = 77)	**Girls (*n* = 50)**	**Boys (*n* = 27)**	**T-Test**
Empathy	1.91 (0.28)	1.95 (0.21)	1.84 (0.07)	ns
CABS	3.84 (0.63)	3.63 (0.62)	3.44 (0.78)	ns
PFS	4.44 (0.65)	4.72 (0.29)	4.54 (0.51)	-2.00*12
CFCA	3.54 (0.40)	3.62 (0.39)	3.42 (0.39)	-3.21*13
% of Cognition words	5.13 (4.65)	5.08 (4.39)	5.23 (5.17)	ns
% of Emotion words	8.29 (6.80)	7.42 (1.42)	9.44 (7.4)	ns

Note: The data is presented for the total sample and by gender. Standard deviations in brackets. 1 = 95% Confidence Interval of the difference (lower and upper limits); 2 = -4.06, -.029; 3 = -.392, -.014; 4 = -5.50, .203.
Empathy = empathic concern for animals. CABS = bonding with companion animal. PFS = pet friendship. CFCA = comfort received from companion animal.
* = $p < .05$.

Preliminary Analyses and Descriptive Statistics

Preliminary analyses revealed no univariate outliers for all dependent variables. Skewness and kurtosis for all dependent variables (empathy, perceptions of companion animal friendship, perceptions of emotional comfort, and mental state language including cognitive and emotion words) were within the range proposed (values less than |2| for univariate skewness and kurtosis; Curran, West, & Finch, 1996). Thus, all variables were used for the following analyses.

Results showed that for the entire sample (N = 77), the overall total percentage of emotion words (M = 8.29, SD = 6.80) was significantly greater than the total percentage of cognitive words used (M = 5.13, SD = 4.65), $t(1, 76) = 4.26$, $p < .001$. Separate gender analyses showed the same result for girls and boys (total percentage of emotion words was found to be greater than total percentage of cognitive words).

Gender Differences

Table 1 shows the gender differences for the main variables. A significant main effect of gender was found for reported friendships with companion animals. Girls reported sharing significantly closer friendships with their companion animals, as compared with boys. In addition, a significant main effect of gender on the comfort from companion animal scale was found as girls reported receiving higher levels of overall companion animal comfort than did boys. No gender differences were found in empathy for companion animals, bonding, or the percentage of cognition or emotion words.

Correlational Analyses

Using the Pearson product-moment correlation, bivariate correlations among the key variables of the study were computed. Overall, for the total sample (N = 77), for mental state talk, results showed that higher levels of the total percentage of cognitive words was associated with higher levels of the total percentage of emotion words (see Table 2). Results also showed that higher levels of children's perceptions of their friendship with companion animals correlated with higher levels of perceived comfort received from the companion animals.

Separate correlational analysis for each gender showed positive correlations between the percentage of cognitive and emotion words - girls, $r(41) = .391$, $p < .01$, boys, $r(26) = .435$, $p < .05$. For girls only, higher levels of perceptions of their friendships with companion animals were related to higher levels of emotional comfort received, $r(41) = .58$, $p < .001$.

Table 2. Pearson Correlations among Main Variables for Total Sample (N = 77)

	1	2	3	4	5	6
1. % of Cognition words	-	.41**	-.05	-.14	-.02	.06
2. % of Emotion words	.41 **	-	.01	.00	.00	.00
3. Empathy	-.05	.01	-	.00	.21+	.23+
4. CABS	-.14	.00	.00	-	.14	.22
5. CFCA	-.02	.00	.21+	.14	-	.47**
6. PFS	.06	.00	.23+	.22	.47**	-

Note: Empathy = empathic concern for animals. CABS = bonding with CA. PFS = pet friendship. CFCA = comfort received from companion animal.
** = $p < .01$; * = $p < .05$, + = $p < .10$

Discussion

This exploratory study investigated 6- to 12-year-old children's empathy; perceived friendship; bonding with, and emotional comfort received from, their companion animals; as well as mental state language in conversations about companion animals. Given that few studies explore gender-related outcomes in the connections between children's mental state language, empathy, and relationships with their companion animals, this study's results contribute significantly to the literature. These findings also support findings from developmental research that suggests gender-related differences in children's social, emotional, and cognitive development may also apply to their emotional knowledge about and attachment to companion animals (Muldoon et al., 2019; Westgarth et al., 2013). Each of the main findings will be discussed in turn within the context of the past literature, followed by limitations, educational implications, and future research directions.

Overall, the results from the correlations supported our hypothesis that positive relations would be found among children's perceptions of companion animal friendships; emotional bonding with, and comfort received from, companion animal; and mental state talk within a learning context. Thus, the present results support past research that shows that children's desire to maintain a close emotional connection and friendship with their companion animals can be considered a measure of the strength of the child-companion animal bond or attachment (Muldoon et al., 2019), and may help to develop mental state language and empathy among children, particularly girls (Endenburg, van Lith, & Kirpensteijn, 2014).

Gender Differences

Results showed significant gender differences in children's perceptions of their relationships with their companion animals. We found that girls reported sharing significantly closer friendships with their companion animals, and

reported receiving higher levels of companion animal comfort, as compared with boys. This finding supports past child-companion animal research that shows a female advantage on measures of perceived quality of friendship, attachment, and attitudes toward companion animals (Arbour et al., 2009; Endenburg, et al., 2014; Herzog, 2007; Muldoon et al., 2019; Nicoll, Trifone, & Samuels, 2008). Our study's findings from both the t-tests and correlations further contribute to the literature. That is, for girls only, companion animals may provide them with a sense of emotional comfort and friendship.

In contrast with past studies that show a female advantage in empathy across the lifespan (Kunzmann, Wieck, & Dietzel, 2018), the present results did not reveal any gender differences in children's empathy for companion animals. This finding could have been due to a variety of reasons. Methodologically, the result could have been caused by an imbalance between the number of female and male participants as twice as many girls participated in the study. Alternatively, the lack of gender differences in the empathy for companion animals score could also reflect that girls and boys are more similar than they are different in terms of empathy for companion animals.

Null gender differences were also found in terms of bonding with companion animals, as well as mental state language. Such null findings support previous research that also shows no gender differences in children's mental state language as well as moral orientation in terms of caring or justice (Jaffe & Hyde, 2000; Tarchi, Bigozzi, & Pinto, 2019). It is important to note that the null result of the gender comparison in the frequency of emotion and cognition words might also be due to the low overall frequency of mental state language among children's answers, since the vast majority of words focused on physical action.

Overall, the present results suggest a more nuanced picture of the complex connections between mental state talk and empathy for companion animals within the context of companion animal friendships. To take these findings further, to address the fluidity and complexity of gender identity, future studies could assess gender orientation and preference for non-binary gender identity. In addition, future studies could explore how empathy (cognitive and affective), as well as self-compassion, may influence children's use of mental state language, and their attachments and friendships with companion animals.

Compared to boys, why did the data from the girls only reveal links among child-companion animal friendships, and received emotional comfort? As mentioned earlier, our results support past research that shows companion animal and human relationships play an important role in the development of children's mental and moral life (Bandura, 2016; Borowski et al., 2018; Cassels et al., 2017; Hoagwood et al., 2017). Our main finding is that compared to boys, girls were more likely to report stronger child-companion animal attachments and received more emotional comfort from their

companion animals. Such findings support past studies that show a female advantage in companion animal attachment (Cassels et al., 2017; Marsa-Sambola et al. 2016; Muldoon et al., 2019).

Perhaps, girls are more likely to be (and to feel) encouraged by their parents, friends, and teachers to discuss their feelings about the relationships they share with their companion animals, as compared with boys. Past studies show that parents and teachers are more likely to use psychological and emotional language with girls compared to boys (Pesu, Viljaranta, & Aunola, 2016), and perhaps, this extends to mental state and moral talk about their interactions with their companion animals. Further, given that past research shows that gender-role societal and cultural stereotypes affect moral reasoning and behaviors (Alsamih & Tenenbaum, 2018), and that particular gender-stereotypic societal rules may encourage girls to use more emotion and moral language (Fine, 2006; Maftei & Hofman, 2019), some girls may develop a larger emotional and moral vocabulary as compared to some boys.

Future studies need to further explore the role of gender, as well as look at the role of cultural heritage and age on the links between mental state talk and companion animal relationships. Thus, future studies could include a diverse battery of data collection procedures such as naturalistic observations and audio recordings of child-companion animal interactions and their conversations during activities such as feeding, walking, playing with their companion animals in their home or at a park. In addition, multiple perspectives can be obtained through the combination of more objective measures (e.g., teacher, parent, peer), as well as self-reports of child-companion animal interactions.

Limitations, Implications and Directions for Future Research

This study has several important strengths. First, to the best of our knowledge this is one of the first correlational, cross-sectional studies to show positive relations among middle school-aged children's mental state language and their perceptions of their friendships with companion animals. In addition, our t-test results showed that compared to boys, girls reported a stronger connection with their companion animals and perceived their companion animals as friends who gave them emotional comfort.

This study also experienced some limitations, given the cross-sectional nature of the study with relatively low participant numbers. First, the sample in this study was a purposive sample and thus, may have included a group of children and their parents that were already more positively biased towards companion animals. That is, such a sample limits the generalizability of this study's findings. In addition, the unequal gender distribution (50 girls, 27 boys), and the relatively ethnically homogenous sample suggest that interpretations of this study's findings are to be made with caution. More in-depth, longitudinal studies with a larger sample that is multi-aged and of diverse

heritage and gender identities may benefit future research on the connections among children's mental state understanding, socio-emotional and moral reasoning, and their companion-animal relationships (de Waal & Sherblom, 2018; Holl, Kirsch, Rohlf, Krahe, & Elsner, 2018; Tardif-Williams & Bosacki, 2017).

The correlational design of our study also prevents us from making any predictions regarding the direction of the relations among the variables: Did high or low levels of mental state talk predict high or low levels of companion animal attachment or vice versa? To further strengthen our findings, in the future, we can build on studies that show reciprocal bi-directional relations between children's theory of mind and social moral behavior (e.g., higher theory of mind scores relate to greater prosocial behaviors such as sharing and cooperating; Etel & Slaughter, 2019; Hughes, 2011). The present study could encourage researchers to conduct longitudinal studies that explore the links and developmental trajectories between children's prosocial relations and moral actions with companion animals and their social cognitive and moral reasoning abilities and vice versa (Tardif-Williams & Bosacki, 2015).

In addition, further research is needed to better understand the impact of socioeconomic and ethnic diversity and other demographic factors on the impact of children's social-moral abilities and their companion animal relationships. For example, future studies could explore how environmental factors such as sibling status, current and past companion animal ownership, cultural and family history of companion animals including treatment of their companion animals, dietary habits such as veganism/vegetarianism, etc. influence children's psychological skills, mental health, and their relationships with companion animals.

The distinctions found in the content between the girls' and boys' mental state language and empathy skills suggest that the self-identified gender of the child may play an important role in children's perceptions of their interactions with companion animals and has practical implications. For example, this study's findings may encourage educators and community-based program leaders to be sensitive to the student's gender identity as they incorporate mental-state or mind-mindedness language about peers and companion animals into their daily classroom or curriculum practice (Bosacki, Varnish, & Akseer, 2008; Hughes et al., 2014). Overall, we believe this study adds to the growing literature on children's experiences with companion animals, and of their developing sense of the social, emotional, and moral worlds of companion animals (Melson, 2001, 2003; Myers, 2003, 2004).

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