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Furry Friends: Direct and Indirect Benefits of Human-Animal Relationships on Well-Being

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ABSTRACT

In this paper, we review the positive consequences of people's connections with companion animals. Specifically, we examine the direct benefits of these relationships, documenting how animals improve people's lives by providing social support, promoting better health, reducing stress, increasing resilience, and enhancing rehabilitation following injury. These benefits are realized in many ways, ranging from the consequences of viewing pets as family members to how companion animals support people across the lifespan. In addition, we outline indirect benefits of companion animals, showing how they support people's goals by increasing social capital, reducing the impact of stigma, supporting better workplaces, providing opportunities for matchmaking, and encouraging people to care more about nature and the environment. We identify key mechanisms involved in how animal connections produce these benefits, including anthropomorphism, theory of mind, and social anxiety management. Although there are limitations to how companion animals promote human well-being, the overall body of evidence indicates that pets and companion animals enhance people's lives directly and indirectly. Finally, we discuss directions for future research, focusing on how human-animal connections can advance our understanding of human relationships and their importance.

1 | Introduction

In the United States, 66% of households have pets, with annual spending on them exceeding \$150B (American Pet Products Association 2025). There are far more households with pets than with children (39%; U.S. Census, 2024), and Americans spend more money annually on pets than on legal sports betting (Bisson 2025). Companion animals are a global phenomenon, with combined dog and cat ownership rates in the European Union (205M), China (141M), and Brazil (78M) comparable to the United States (150M), and these numbers are increasing worldwide (Health for Animals 2022).

In addition to pet's prevalence and economic impact, people's connections with companion animals are consequential. For

example, more than 75% of dog and cat owners consider their pet to be a family member (McConnell et al. 2017) at a time when 35% of Americans report being estranged from at least one immediate family member (Harris Poll 2024). Moreover, people report that their pets are integrated into their self-concepts as closely as their siblings (McConnell et al. 2011), underscoring their psychological importance.

It is striking that pets are so enmeshed in people's identities and are members of people's most sacrosanct ingroup, family (Buchanan and McConnell 2017), despite not being human beings. These relationships not only reflect the influence of companion animals on people's lives, but they are shaped by powerful interpersonal relationship processes that allow bonds across species to develop and flourish. In our paper, we review

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findings highlighting the consequences of pet relationships, examining the mechanisms by which people's furry friends promote well-being. As illustrated in Figure 1, we forward that companion animals not only improve people's well-being through direct means but that they play important roles in fostering indirect benefits for people as well.

2 | Direct Benefits of Companion Animals

2.1 | Social Support

Pets provide people with considerable social support. As noted previously, companion animals typically are strongly enmeshed in people's self-concepts (McConnell et al. 2011) and viewed as family members (McConnell et al. 2017). For example, companion animals are so meaningfully embedded in families that grief over their deaths are experienced by many as grieving for the loss of a human loved one (Behler et al. 2020). In fact, conversations about dying pets are useful vehicles for discussing difficult topics with younger family members (e.g., explaining that a family cat went to "kitty heaven"), who often are shielded from challenging topics to maintain their innocence (Kuchirko et al. *in press*).

Part of the psychological power of pets comes from how they serve core human motives. People have a fundamental need to belong (Baumeister and Leary 1995), which means they are motivated to form and grow interpersonal relationships that serve survival needs. Social rejection, ostracism, and loneliness provide important signals indicating that one's fundamental needs are unfulfilled (Williams 2009). Meaningful connections with others are essential for well-being (DeWall et al. 2008; Williams 2007), with loneliness predicting poorer health and greater mortality (Hawkey and Cacioppo 2010; Holt-Lunstad et al. 2017; McConnell et al. 2009; Uchino et al. 1996).

Although people rely on each other for social support, pets may bolster people's sense of belonging as well. Because pets are not human beings, connections with them do not comport to established definitions of belonging and friendship (e.g., mutual self-disclosure, reciprocal nominations of friendship), yet companion animals provide people with meaningful social support (McConnell et al. 2017). For example, one experiment asked pet owners to report on how much support they receive from a variety of sources, and they reported that pets provide as much support as siblings or parents, with only best friends providing more support (McConnell et al. 2011). When examining the degree to which participants' *basic psychological needs* (i.e., self-esteem, belonging, personal control, meaningful existence) were fulfilled by both human sources and by pets, McConnell et al. found that pet support improved owner well-being (e.g., less depression, higher self-esteem, reduced loneliness) above and beyond the contributions of human social support.

Pets can provide support for people whose access to other people is limited. For example, Ratschen et al. (2020) studied more than 5000 U.K. residents who had at least one companion animal during the COVID-19 lockdown. When responding to their experiences with the lockdown, 87% said their companion animal helped them cope emotionally, 73% said their animal helped keep them physically fit and active, and 95% said they could not "imagine being without my animal at this time." Ratschen et al. found that the magnitude of human-animal bonds did not vary across species, a finding observed by others (e.g., McConnell et al. 2011).

How do pets provide people with companionship benefits? Clearly, pets do not pay bills, prepare meals, or tidy up around the house, and if anything, they add to the length, expense, and complexity of everyday chores and responsibilities. For animal relationships to improve people's well-being, there must be powerful psychological processes involved. Research indicates that anthropomorphism, or people's ability to ascribe human-like qualities to nonhuman agents, is a critical ingredient for how companion animals benefit people.

Well-being Benefits of Companion Animals



Direct

**Social Support
Physical Health
Stress Reduction
Improved Resilience
Better Rehabilitation**



Indirect

**Social Capital
Reduced Stigma
Better Workplaces
Matchmakers
Greater Sustainability**

FIGURE 1 | Direct and indirect ways that companion animals promote human well-being.

2.2 | Anthropomorphism and Theory of Mind

Early evidence for the impact of anthropomorphism was provided by Epley et al. (2008), who found that people ascribe more socially-supportive human attributes (e.g., thoughtfulness, considerateness) but not more nonsocially-supportive attributes (e.g., creative, embarrassable) to non-human agents such as alarm clocks and greyhounds when they are chronically lonely or experimentally induced to feel lonely (e.g., watching a movie clip of a protagonist stranded on a deserted island). Thus, it appears that lonely people are predisposed to perceive greater social-support opportunities in non-human agents, presumably to establish meaningful social connections that assuage their isolation.

More evidence for the role of anthropomorphism was observed by Brown et al. (2016). In one of their studies, participants completed the Individual Differences in Anthropomorphism Questionnaire (Waytz et al. 2010) to assess the degree to which

participants systematically ascribe non-human entities with human-like traits. For instance, some people are more likely to see zoo animals or automobiles as possessing human qualities such as “cranky and stubborn,” whereas other people view the same entities in non-human terms such as “variable and unpredictable.” Next, these participants were randomly assigned to either a rejection condition where they recalled a time in their lives when they felt socially excluded or an acceptance condition where they recalled a time when they felt socially included. Finally, some participants watched images of dogs and cats presented on a computer before completing a measure of basic psychological needs fulfillment (e.g., self-esteem, belonging). The key finding reported by Brown et al. (2016) showed that participants in the rejection condition who then viewed images of animals showed improved needs fulfillment to a greater degree when they were more predisposed to anthropomorphize non-human agents. In other words, people who possess a general tendency to see human-like qualities in non-human entities benefitted most from watching animals following a social rejection experience, highlighting how anthropomorphizing animals helps people restore their sense of social connection.

Additional support for the role of anthropomorphism in producing human benefits was found by McConnell et al. (2019), who explored how viewing one's pet as a family member, rather than as an animal, improves well-being. In one study, pet owners were randomly assigned to either a family condition where they wrote about a time when their pet acted like a family member or an animal condition where they wrote about a time when their pet acted like an animal. Afterward, participants reported their basic psychological needs fulfillment and how much socially-supportive anthropomorphism they ascribed to their pet. Participants induced to think about their pet as a family member showed greater needs fulfillment than those induced to think about their pet as an animal. Moreover, the degree to which they anthropomorphized their pet was affected by the experimental manipulation, with people ascribing more socially-supportive traits (e.g., sympathetic, considerate) to their pet in the family condition than in the animal condition. Finally, the effect of experimental condition on needs fulfillment was mediated by ascribing socially-supportive traits to their pets, showing that anthropomorphism could explain the well-being benefits that followed from viewing one's pet as a family member. These findings indicate that viewing a pet as a family member results in applying more attributes typically associated with families (e.g., support, concern) to their companion animals, improving people's self-esteem, belonging, perceived personal control, and sense of meaning in life.

When people ascribe more socially-supportive attributes to companion animals, it enhances perceptions of psychological qualities linked to closeness, intimacy, and affection that make close relationships and family memberships powerful (Fingerman et al. 2020; Finkel 2025; Ko et al. 2020; Steptoe et al. 2013). In addition, research has established that increasing the diversity of close others in one's life enhances resilience and well-being (Buchanan and McConnell 2017; Fiori et al. 2007) and feeling close to a member of another species contributes to social diversification. Yet, different forms of anthropomorphism

might matter in how human-animal interactions affect people's well-being.

Specifically, theory of mind involves attributing mental states (e.g., thoughts, emotions) to entities, human or nonhuman. Rather than focusing on socially-supportive attributes (cf., Epley et al. 2007), most theory of mind perspectives focus on two orthogonal dimensions: warmth (or experience) versus competence (or agency; see Fiske et al. 2002; H. M. Gray et al. 2007). When applied to anthropomorphism, a perceiver might consider one's pet as possessing feelings and emotions (e.g., hunger, love) and these ascriptions could be independent of associating the pet with competence or agency (e.g., is a good hunter, gets lost on walks). Perceptions of entities on these dimensions can vary, with babies seen as greater in experience but lower in agency, robots being greater in agency but lower in experience, and adults being greater in agency and experience (H. M. Gray et al. 2007). Entities with greater perceived agency are more likely to be viewed as culpable for their actions because they can appreciate the consequences of their behaviors, whereas entities perceived as greater in experience are seen as more sensitive to pain or pleasure and thus more vulnerable and deserving of people's care (K. Gray and Wegner 2009).

Previous work explored how different animal species are viewed along these dimensions. For example, Sevillano and Fiske (2016) found that species such as dogs, cats, and monkeys were viewed as worthy of human protection (high in experience and competence), whereas lizards, rats, and fish were seen as acceptable targets for human harm (low in experience and competence). Predators (e.g., tigers, bears, lions) were considered as low warmth and high competence threats, whereas prey animals (e.g., ducks, rabbits, cows) were judged as high warmth and low competence subordinates who serve humanity's needs. In related work, Swim et al. (2023) found that people were more likely to empathize with animals seen as greater in competence and in warmth, showing that both dimensions shape animal perceptions.

Research from our lab found that different pet interaction experiences may give rise to perceptions of companion animal theory of mind. In an unpublished pilot study, 131 pet owners reported perceptions of their pet's warmth (e.g., nice, friendly), competence (e.g., skillful, able), and the extent to which it exhibited qualities that (based on factor analysis) fell into four groups: pet attachment to owner (e.g., responsive to owner, cuddly), active animal (e.g., active outside, enjoys animal tasks), smart explorer (e.g., follows commands well, exhibits curiosity), and likability (e.g., pet is liked by people, pet is liked by other animals). Multiple regression analyses found that perceptions of pet warmth but not pet competence uniquely predicted pet attachment to owner ($\beta = 0.51, p < 0.001$) and being likable ($\beta = 0.34, p = 0.006$), whereas ratings of pet competence but not warmth uniquely predicted perceptions of the pet being an active animal ($\beta = 0.36, p = 0.004$) and a smart explorer ($\beta = 0.42, p < 0.001$). It is an open question whether perceptions of pet warmth and competence emerge from these types of interactions or if people's preferences for particular theories of mind shape the types of pets they select and the interaction

opportunities pursued. These data provide initial evidence that pet warmth and competence may be distinct in their nature, and they suggest distinct interaction contexts may explain the consequences observed in past published work (e.g., Sevillano and Fiske 2016; Swim et al. 2023). Later, we return to pet theory of mind when exploring indirect consequences of companion animals.

2.3 | Benefits Across the Lifespan

The benefits of companion animals emerge early in people's lives and continue throughout the lifespan. Pets provide many benefits for children, including greater autonomy and self-esteem (Van Houtte and Jarvis 1995) and fewer problematic behaviors such as crying and argumentativeness (Paul and Serpell 1996). Moreover, adolescents benefit from pets in the home, providing them with opportunities to develop perspective taking skills and receiving nonjudgmental social support (Piper and Uttley 2019). Children in families with dogs are more physically active (Owen et al. 2010) and less obese (Timperio et al. 2008), with these active lifestyle benefits not only coming from high-effort activities such as dog walks but from informal play with pets (Martin et al. 2015). Later in life, adult dog owners reveal greater quantity and intensity of physical exercise compared to non-owners (Dall et al. 2017; Garcia et al. 2015).

Companion animals help adults deal with stress more effectively. For example, Siegel (1990) tracked Medicare patients and found that pet owners (compared to nonowners) were better buffered from the consequences of stress, requiring fewer physician appointments, with many of them reporting that pet companionship offset the losses of friends and spouses. Relatedly, unpublished data from our lab tracked 78 people who navigated the COVID-19 global pandemic. Specifically, we assessed people's basic needs fulfillment and found those who fared better during the pandemic maintained social interactions with friends and family in person ($r = 0.32$, $p = 0.004$), stayed in touch with close others virtually ($r = 0.33$, $p = 0.003$), and adopted a dog ($r = 0.25$, $p = 0.03$). Furthermore, those who had a pet reported greater resilience during COVID when their pet was more included in their self-concepts ($r = 0.32$, $p = 0.032$). Overall, companion animals support well-being and resilience, consistent with past work (e.g., Ratschen et al. 2020; Siegel 1990).

2.4 | Better Physical Health, Lower Stress, and Greater Resilience

In an experimental study, Allen et al. (2001) found that pets provided health benefits for people at greater risk for cardiovascular disease. In their study, stockbrokers with preexisting histories of high blood pressure were randomly assigned to either adopt a pet or to a control condition where they did not receive a pet. They found that stockbrokers who adopted a pet had lower blood pressure levels when under stress compared to similar stockbrokers who did not adopt a pet. Turning to

correlational findings, Friedmann and Thomas (1995) found that, following heart attacks, pet owners were less likely to die within 1 year (1%) compared to similar patients who did not own pets (7%). In addition, Siegel et al. (1999) found that men diagnosed with AIDS reported less depression when they owned a pet compared to men with the same diagnosis without pets.

Although these findings suggest that companion animals improve people's health by offsetting stress across time (Allen 2003), pets can improve well-being quickly. For example, McConnell et al. (2017) tracked people who visited an animal shelter considering adopting a dog or a cat, assessing their levels of depressed affect at the time of adoption and 2 months after adopting. Not only did adopting a pet reduce owners' depressed affect 2 months later, but the magnitude of this improvement was predicted by how much owners ascribed socially-supportive traits to their new dog or cat, showing the power of anthropomorphism in supporting well-being.

There is even more evidence that companion animals provide immediate benefits for people. Many pet owners report that after an awful workday, coming home to their pet magically improves their disposition. Research by McConnell et al. (2011) indicates that this experience is real. In their study, pet owners initially completed a measure of basic needs fulfillment to provide a baseline measure of well-being. Next, based on random assignment to conditions, participants in an initial task either wrote for 5 min about a time when they experienced social rejection or wrote about their morning routine (a common control condition in rejection induction studies). During a subsequent task that also lasted 5 min, participants (based on random assignment to conditions) either drew a map of their nearby surroundings (map condition), wrote a paragraph about why they liked their favorite friend (friend condition), or wrote a paragraph about why they liked their favorite pet (pet condition). At the end of the study, participants once again completed the needs fulfillment measure to assess changes in well-being across the entire study.

Among those in the control condition who did not initially recall a rejection experience, psychological needs fulfillment was relatively unchanged across the study. However, for participants in the rejection condition, a different pattern was observed. Those who recalled being rejected and then drew an innocuous map showed a steep drop in needs fulfillment at the end of the study compared to the beginning, illustrating the typical impact of rejection on well-being. However, for those in the rejection condition who wrote for 5 min about their best friend or about their pet, there was no drop in needs fulfillment at the end of the study. In other words, thinking about one's pet was just as effective as thinking about one's best friend in offsetting the blow to one's well-being that comes from rejection. Thus, McConnell et al. (2011) provided experimental evidence that pets can restore well-being after having a bad day. Overall, pets support psychological resilience by providing people with diverse sources of social support that promote flourishing (Buchanan and McConnell 2017; McConnell 2011).

2.5 | Better Rehabilitation

Another way that people's health and resilience are supported is through animals used in patient care and in rehabilitation. In hospital settings, therapy animals create a sense of normalcy (Wu et al. 2002), improve patient interactions (O'Haire 2013), increase patient motivation (Taylor et al. 2009), and reduce patient pain, anxiety, and distress (Waite et al. 2018). Similarly, animal therapy in assisted living settings reduces agitation and improves affect among residents who often experience depression, cognitive impairment, and dementia (Friedmann et al. 2014). Interestingly, animal assisted therapy not only is well received by patients and their families (Wu et al. 2002) but by personnel overseeing medical treatment too (Moody et al. 2002).

Indeed, work by Narad et al. (2024) found that animal-assisted therapy conducted with children receiving treatment for acquired brain injury was a valuable tool for patients in a hospital rehabilitation unit. Using a within-subjects design where each patient had some traditional therapy sessions without dogs and other sessions involving dogs, Narad et al. observed that animal-assisted therapy improved patient rapport and engagement. Moreover, animal-assisted therapy sessions made it easier for therapists to engage with their patients, allowing them to successfully undertake more challenging tasks than under conditions where no therapy dog was present. Considering the relative low cost of animal-assisted therapy, unleashing animals in rehabilitation settings can improve outcomes for patients and providers alike.

3 | Indirect Benefits of Companion Animals

3.1 | Improved Social Capital and Reduced Stigma

Beyond direct benefits resulting from interactions with companion animals, people's welfare is improved by animal connections indirectly. For example, pets serve human companions' belonging needs by enhancing their social capital, supporting their owners' ability to establish and maintain human social networks and relationships (Arkow 2019). Daily dog walks facilitate interactions with neighbors, increasing people's comfort with asking others for favors, advice, and human social support (Wood et al. 2017). Walking one's dog even increases social interactions with complete strangers (McNicholas and Collis 2000), and these fleeting interactions can play a surprisingly consequential role in improving people's happiness (Schroeder et al. 2022).

Another indirect benefit of pets is stigma reduction. For instance, children in wheelchairs receive more favorable glances and experience more friendly conversations with a service dog present than when the same children did not have a dog present, demonstrating how companion animals can reduce stigma and foster positive social interactions (Mader et al. 1989). Similarly, visually impaired adolescents not only show greater confidence and independence when using guide dogs, but they experience better human social support because these animals help them establish new friendships and interact more frequently with strangers (Gravrok et al. 2018).

3.2 | Better Workplaces

In the workplace, companion animals produce synergistic improvements not just for individuals but for companies. As the acceptability of companion animals in workplaces grows, there are positive consequences for coworker relationships and performance. Colarelli et al. (2017) found that the presence of dogs in workplaces led small working groups to perform tasks better, with employees exhibiting more positive emotions and nonverbal behaviors in meetings. Also, pet friendly workplaces provide employers with a competitive advantage because they increase interest in applying for jobs and signal work environments that prioritize employee well-being, improving the appeal of these companies even for applicants without pets (Quan et al. 2024).

3.3 | Matchmaking

In addition to providing direct companionship, animals may help people find romantic partners. In one study by McConnell et al. (2017), female participants were shown images of male targets who were, or were not, accompanied by a dog. Specifically, identical scenes of men were manipulated with computer software to either insert or delete a dog from images. Each target was associated with relatively nondescript passages (e.g., "Ted spends most weekends working on projects around the house"), and targets were rated by participants on both romantic (e.g., affectionate) and nonromantic (e.g., creative) attributes. Although ratings of the target's nonromantic qualities did not vary between conditions, McConnell et al. found that women viewed male targets accompanied by a dog as greater in romantic attributes than male targets without a dog.

3.4 | Greater Sustainability

Heretofore, we have focused on direct and indirect ways that individuals and even companies benefit from companion animals. However, the positive consequences of pets could extend to nature and to the entire planet. Research has suggested that concern for companion animals might spill over into concern for the environment, benefitting all people and species. For example, Filippi et al. (2010) examined how participants with different eating preferences (i.e., omnivores, vegans, vegetarians) respond to images of human and animal suffering (e.g., murdered people, tortured animals) while inside a functional magnetic resonance imaging device. Overall, vegetarians and vegans showed stronger activation of empathy related areas of the brain, with especially strong empathy activation for images of animal suffering compared to omnivores. These findings indicate that concern for animals reflected in one's dietary choices correspond to spontaneous and strong concern for the treatment of other species.

More broadly, people's connections with animals may make them more committed to protecting the environment. Indeed, some successful approaches to sustainability involve integrating species, communities, and belief systems with people's self-concepts because such interconnections enhance people's motivation to

protect nature (Korach and McConnell 2021). People spend 92% of their lives in built environments (Klepeis et al. 2001) and thus have few connections to nature beyond their pets. Because pets are strongly connected to people's self-concepts (McConnell et al. 2011), people's relationships with companion animals may encourage pro-environmental action. Indeed, the "Pets-as-Ambassadors" hypothesis forwards that feelings people have about their pets may foster positive attitudes toward animals and nature (Serpell and Paul 1994). Consistent with this idea, Auger and Amiot (2019) found that people who have more frequent contact with pets expressed greater moral concern for animals and stronger intentions to act prosocially toward them. People are generally concerned about entities more capable of having emotional experiences, suggesting a linkage between ascribing stronger emotionality to, and expressing greater concern for, animals (K. Gray and Wegner 2009).

Accordingly, Jacobs et al. (2023) examined how much people believe their pets have emotional experiences (e.g., feel pain, feel pleasure) and have agency (e.g., exercise self-control, have good memory) along with their commitment to pro-environmental behaviors. Jacobs et al. observed that participants who ascribed greater emotional experiences, but not greater agency, to their pets were more committed to sustainable behaviors. In a follow-up study, participants read one of two (unbeknownst to them) fabricated articles that purportedly interviewed an animal cognition expert, with one indicating that animals have rich emotional lives and the other suggesting that pets have no emotional experiences. Those induced to view pets as having greater emotional experiences expressed more environmental concern and greater commitment to sustainable behaviors. Thus, specific forms of anthropomorphism (i.e., viewing pets as having stronger emotional experiences) increased people's concern about nature, providing benefits for every creature on the planet.

3.5 | Future Directions

The current framework not only summarizes research on companion animals, but it can suggest new areas for inquiry. For example, pets are beneficial for lonely individuals even though, contrary to many people's expectations, pet owners are less lonely than nonowners (McConnell et al. 2011, 2017). Interestingly, Knowles et al. (2015) contend that chronic loneliness might not result from people lacking social skills but because lonely people "choke" in situations where social anxieties undermine their ability to connect with others. Pets may serve chronically lonely people by reducing their anxiety (Waite et al. 2018), increasing the likelihood of pursuing interactions with other people (McNicholas and Collis 2000) by providing lonely people with a "security blanket" (Passman 1977) in the face of uncertainty.

In addition, people's connections with animals can shed light on basic human relationship processes. For example, one central feature of relationships is mutual responsiveness, or the degree to which relationship partners attend to, value, and reactively support defining features of one's self-concept (Clark and Lemay 2010). Feelings of responsiveness are critical because

they foster relationship closeness, satisfaction, and commitment (Reis et al. 2004). Certainly, people can project some perceptions of responsiveness on others (Canevello and Crocker 2010; Lemay et al. 2007), yet when pet owners rely on animal eye contact or tail movements as indicators of attention and reactivity, it shows that unspoken pathways to establishing responsiveness operate. Pet owners report feeling strongly connected to their animals (McConnell et al. 2011, 2019) even when experiences of relationship responsiveness with them are limited to subtle, nonverbal indicators, and thus human-animal interactions may shed new light on mechanisms by which perceptions of human relationship quality are developed and maintained such as the influence of nonverbal cues (Carmichael and Mizrahi 2023) or behavioral entrainment.

More broadly, we are drawn to research on human-pet interactions because they surface psychological processes underlying what makes people's *human* relationships beneficial. That is, because people's connections with pets are relatively impoverished compared to human relationships (e.g., limited communication, large asymmetries in resources and power), companion animal ties can identify minimal or unexpected qualities that support human flourishing. Feeney and Collins (2015) outlined five components of thriving relationships, and pets can support all of them: hedonic well-being (e.g., pets make people happy), eudaimonic well-being (e.g., pets support people's growth and meaning making), psychological well-being (e.g., pets promote resilience), social well-being (e.g., pets provide social support), and physical well-being (e.g., pets encourage exercise and reduce stress). Understanding how these functions are served by the relatively meager means available to pets can help identify the most minimal conditions necessary for the benefits of human relationships to be experienced. Further, we contend that the psychological projections required to elevate animals to serve as significant relationship partners and family members (e.g., enhanced ascriptions of socially-supportive traits, boosted warmth and competence) are likely involved in people's connections with human beings in ways that are often unnoticed or underappreciated.

4 | Conclusion

In this paper, we outlined how companion animals improve human well-being. Overall, there is considerable evidence that people's connections with pets provide direct (e.g., social support, physical health, effective rehabilitation) and indirect (e.g., social capital, better workplaces, greater commitment to the environment) benefits. To be clear, companion animals are not a panacea. For example, pets are expensive, can injure others and instigate interpersonal conflict, and some research reports mixed or null findings (Herzog 2011). Also, the advantages conferred by pet can be moderated by important individual differences (Piper and Uttley 2019). However, myriad studies demonstrate diverse well-being benefits from companion animals, and we are especially impressed by research using experimental manipulations (e.g., Allen 2003; Allen et al. 1991; McConnell et al. 2011) and by work documenting mediational evidence for underlying psychological mechanisms (e.g., Jacobs et al. 2023; McConnell et al. 2019).

We also note that the benefits of human-animal interactions are a two-way street. For example, Coppola et al. (2006) found that human contact with dogs (e.g., grooming dogs, petting dogs) produced lower levels of stress (assessed by assaying cortisol, a hormone related to stress, in dog saliva) within 3 days of arriving at an animal shelter. More striking, Nagasawa et al. (2015) found positive-feedback loops between owners touching dogs and dog-owner gazes increasing oxytocin (a hormone that promotes bonding) levels in both people and dogs, indicating that people and companion animals can share a bidirectional oxytocin loop similar to what is observed with mother-infant bonding. Nagasawa et al. observed these outcomes between people and their dogs but not between people and hand-raised wolves, providing evidence of coevolved human-dog bonds. In addition to providing additional evidence of the well-being benefits of pets, this work is an important reminder of the co-created relationships between people and companion animals and how these bonds extend well beyond utilitarian value.

Connections with companion animals are so powerful because they serve many human motivations simultaneously. Belonging needs are served through pet anthropomorphism (McConnell et al. 2019), self-worth is enhanced through undivided and judgment free attention (Mueller et al. 2024), and feelings of personal control are supported through pet interactions (Brooks et al. 2016). Thus, people's interactions with pets and those animals' co-evolved responses to human actions (Horowitz 2009) are so consequential because they serve many fundamental human motives. As a result, it is not surprising that companion animals support human well-being in so many direct and indirect ways. In sum, we hope our review provides a useful framework for thinking about the implications of human-animal interactions and points scholars in new directions for better understanding the benefits of meaningful relationships, human and nonhuman alike.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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