

CHAPTER 2

Ten Open Questions in Research on the Rising Popularity of Companion Dogs

Enikő Kubinyi

Abstract

Dog ownership¹ is deeply embedded in human culture and significantly impacts society, including those who do not own dogs. Research is needed to examine precisely how dogs influence society and people's mental and physical health, as well as how owners' attitudes towards dogs' functions, training, and care affect canine behaviour and breeding. The present study's core premise is that, like all behaviours, dog ownership is influenced by both genetics and the environment. Companion dog ownership has a genetic basis, but it is also strongly influenced by culture. Throughout their 300,000-year evolutionary history, humans primarily lived in hunter-fisher-gatherer family groups, characterised by strong social cohesion and communal child-rearing. It is only since the advent of agriculture, followed by industrialisation and urbanisation, that this way of life has dramatically changed, leading to increased population size and life expectancy, decreased birth rates, and smaller family units, thus significantly reshaping community relationships. This could be one of the reasons why the role of dogs in Western² cultures has become more valued, as they can fill the gap left by absent community members. Dog owners highly appreciate the companionship, 'unconditional love,' and physical contact that dogs provide. This study proposes ten research directions to address the open questions related to the growing trend of companion dog keeping.

Keywords

dogs, human evolution, cultural differences, social relationships, well-being

¹ I use the terms 'dog ownership' and 'owner' throughout the paper in agreement with the editors of *Applied Animal Behaviour Science*: "Deliberate introduction of substitutes, instead of the well-established term 'owner' in the case of companion animals, leads to confusion and ambiguity, especially as both 'tutor' and 'guardian' have clear functional and legal meaning in human society. Using such terms may therefore be misleading when used in connection with dogs and cats. When it comes to the involvement of companion animals in ethological research, the term 'owner' means no less and no more than the person who is legally responsible for that animal" (Pongrácz – Camerlink 2022: 1).

² 'Western cultures' in this paper refers to the social norms, values, beliefs, and traditions that have historically originated from or are associated with Western Europe and other regions influenced by European colonization and cultural expansion. I acknowledge that it is a contested term (see, for example, Browning – Lehti 2009).

1. Introduction

Dogs permeate many aspects of human life, are deeply rooted in culture, and, as such, affect even those without direct ownership or care. This is true in Asian, African, and South American countries struggling with large numbers of street dogs, and even more so in Western-type societies, where, in recent decades, a larger portion of the population considers dogs as family members (e.g. Kubinyi – Varga 2023). Dogs provide companionship, emotional support, and determine many people's daily routines and lifestyles. The pet industry – the production of food and equipment, as well as the provision of life insurance, hospitality, breeding, walking, grooming, veterinary care, and training – is growing consistently, providing a livelihood for people who do not own dogs themselves. However, those who are neither financially invested in nor emotionally attached to dogs also encounter them in the news and public places, hear their barking, sometimes step in dog waste and may even suffer a bite. As dog ownership is indeed a common social issue, it is worth reviewing the open questions through which research can help us understand the current role of dogs, namely, how they affect people's mental and physical health and how the attitudes of owners – the strength and nature of the relationship – influence the breeding and behaviour of dogs.

According to our core theory, the facts that dogs are predominantly considered family members in Western societies (Kubinyi – Varga 2023), and that their numbers are increasing (Varga et al. 2023) are partly due to our species' biological need to live in a community, but the framework for this has now practically disappeared. Specifically, for 96% of its three-hundred-thousand-year history, the human species has led a fisher-hunter-gatherer lifestyle and has lived in family groups where members support each other, share common experiences, beliefs, and cultural traits, are bound together by a sense of belonging, live physically close to each other and subordinate their individual interests to those of the group (Van Vugt – Hart 2004). The children were raised together by the group (Glocker et al. 2009). A young child could be attached to several caregivers, carried and fed by many, as is the case in some of today's hunter-gatherer societies (Meehan – Hawks 2013). It is assumed that to increase their chances of survival, young children developed a socio-cognitive toolkit that allowed them to effectively attract the attention of caregivers. These skills have contributed significantly to the development of speech, and cooperative reproduction in adulthood reinforces group cohesion, a key to the success of our species (Hrdy – Burkart 2020).

The emergence of agriculture approximately twelve thousand years ago, followed by industrialisation from the eighteenth century onwards, completely transformed the way people lived in Western cultures. Mortality rates fell, life expectancy increased, populations exploded, and people moved to cities. At the beginning of the domestication of the dog, twenty-five thousand years ago, there were only five to six million people, who lived a fisher-hunter-gatherer lifestyle, compared with 300 million at the beginning of industrialisation (Biraben 2003) and more than 8,100 million today (Worldometer 2024). At the same time, birth rates have fallen globally in recent decades (Aitken 2022), which also means that a person has fewer relatives to grow up with in a generation and, thus, less unconditional social support. Mobility and changes in family structure have led to a proliferation of small households. In Hungary, for example, today only 13% of adults spend an hour a week with a young child [based on the dataset of (Kubinyi – Varga 2023)], whereas in ancient communities, almost everyone was involved in child-rearing, as the saying 'it takes a village to raise a child' illustrates (Marlowe 2005). The childcare practices of prehistoric communities – raising children as a community, with daily interactions between each adult and child – were shaped by the genetic background of human evolution (Hrdy – Burkart 2020). I argue that

these ‘genetically hardwired’ practices are likely missed not only by infants but also by adults, and that, if there are no young children available, the biologically determined urge to care may be diverted, for example, toward companion animals.

When an ecological niche opens up, or in this case, expands, the influx of species immediately starts. Dogs are excellent candidates to fill in the gaps in human communities (Topál et al. 2009). Studies have shown that what owners value most in their dogs is companionship (Holland et al. 2022), unconditional affection, and physical contact (Kubinyi – Varga 2023). Increasingly popular small and brachycephalic dogs have a head shape and large eyes resembling those of a small child (Bognár – Kubinyi 2023; Ujfalussy et al. 2023), are easy to cuddle and, because of their respiratory problems, are often carried on a lap or even pushed in a pram. Western culture, which includes Hungarian culture in terms of pet keeping habits, strongly supports this phenomenon, and today, not even financial constraints stop people from keeping pets, which was almost exclusively the privilege of the nobility before the Industrial Revolution (Cheang 2006).

2. Open Questions

In the present paper, I propose a number of directions for future research on companion dog keeping based on the above line of thought.

2.1. Can Dogs Replace Human Relationships?

In Western cultures, the majority of dog owners consider dogs to be family members, and in Hungary, one in ten people consider them more important than any human being (Kubinyi – Varga 2023). But to what extent can dogs effectively replace human kinship and friendship? Some authors argue that despite the anthropomorphic label ‘fur baby,’ dogs have a specific, unique role in the household and cannot replace human relationships (Blouin 2013; Ventriglio et al. 2021; Volsche 2021). However, direct comparisons of dog ownership and child-rearing at psychological, physiological, and behavioural levels are lacking. Further research should directly compare human-human and dog-human relationships in terms of emotional complexity, intellectual impact, shared experiences, social support, communication, and long-term life planning. A good approach is the use of the Network of Relationships Inventory (NRI), which explored two components of the human-animal relationship: support and conflict (Bonas et al. 2000). The structure of the support component was similar in human-human and human-dog relationships. However, Judith Benz-Schwarzburg et al. point out that “the human-dog relationship is a dominance relationship where humans are usually in command of power” (2020: 13). Dogs, provided that the owner shows some competence in dog training, generally willingly accept human leadership (see, for example, Udell et al. 2010: 328). Humans provide resources that dogs need and exhibit behaviours that dogs perceive as a sign of dominance. According to Clive Wynne, “[t]his may be what Darwin was referring to when he endorsed the idea that a dog looks on his master as on a god” (2021: 97).

2.2. Benefits and Costs

As with any relationship, living with companion animals has positive and negative aspects (Podberscek 2006). The costs of keeping a dog are clear (e.g., purchase price, feeding, veterinary care, equipment, training, and dog walking), but the benefits are not universal. Research on large populations, with proper statistical controls, has shown that dog ownership

does not consistently have a positive effect on owners' mental or physical well-being (Herzog 2011; Rodriguez et al. 2021). So why do people keep dogs? As suggested in the Introduction, many do so to fulfil their social needs. A similar idea was expressed by Professor Vilmos Csányi, the most famous dog-expert researcher in Hungary, founder of the Department of Ethology at ELTE, in his answer to Márton Gulyás' question in the uncut version of the PartizánPOL podcast episode of 13 January, 2023:

MG: "I believe there is a difference between a pre-existing human community, such as a family, which already functions as a social space before adopting a dog, and a single person who relies on a dog to fulfil their social needs."

VCs: "But if they have no other choice... at least fulfil those needs with a dog, I beg your pardon..." (Csányi 2023, 00:37:06–00:37:26)

Given that the complex relationship between dogs and their owners can have positive, negative, or neutral effects on both parties, it is understandable that there are conflicting results about the benefits of dog ownership. Research should provide predictions about what types of dogs might be beneficial to particular groups of owners. Studies should consider not only the fact of dog ownership itself but also the socio-economic status of the owner, attitudes towards dogs, and the frequency of certain activities such as walking and playing (Barcelos et al. 2020). Longitudinal studies should investigate how the acquisition of a dog affects the lives of owners. For example, if we find no difference in well-being between dog owners and non-dog owners, it does not necessarily mean that ownership has no effect on well-being. It is possible that dog ownership improves the well-being of those who wanted a dog and were worse off without one, but now they feel as good as those who do not want a dog and do not have one. It is also possible that dog ownership reduces well-being. In this case, current dog owners may have enjoyed a higher level of well-being before acquiring a dog, which has decreased to the level of non-dog owners due to the burdens of dog ownership. We would only be able to determine whether a dog increases or decreases the owner's well-being if we collected data from the subjects both before and after acquiring the dog. Another example is the relationship between physical activity and dog ownership. Without longitudinal studies, it is not clear whether getting a dog makes someone more active (because they walk more with the dog) or whether being active in the first place (i.e. they walk a lot) increases the likelihood of owning a dog (Utz 2014). Only longitudinal studies can determine whether the "pet effect" truly has a positive impact on owners' well-being.³ The majority of current studies have been conducted on dog-loving people who probably prefer to report their positive experiences, and therefore representative samples should be used to explore possible negative effects. People who have had a dog but no longer have one should also be included in the studies, as this would give a more realistic picture of the burdens of dog ownership.

2.3 Human Fertility Rate

At present, it is still largely unexplored whether dogs being considered as family members reduces, increases, or does not affect people's biological fitness (reproductive success). I posit that one of the many reasons for people's declining fertility may be that their urge for care is

³For detailed studies on "pet effect", see, for example, Serpell 1990; Allen 2003; Charnetski et al. 2004; Smith 2012; and Levine et al. 2013.

diverted toward dog keeping. Dogs, requiring much less resources than small children, can satisfy at least partly the psychological and emotional needs of their owners for attachment and care. Conversely, dog ownership might positively impact fertility rates by providing an opportunity to test a potential partner's or future spouse's caregiving skills. If the partner proves to be a good caregiver, it may increase the sense of security when considering having children, which might have a positive effect on fertility rates.

2.4. Social Networks

It is a fascinating question whether dogs help or hinder the complexity of people's social networks. Does a dog bring the owner closer to other people, or does it distance them? Depending on the role and personality of the dog and the owner, their relationship, and the social milieu, both scenarios are possible. For example, an aggressive or extremely shy dog may prevent the owner from socialising with others, or a dog with separation problems may not be left alone, cutting the owner off from many activities, whereas a sporting dog may foster many new friendships in training and competitions.

2.5. Gender Differences in Dog Ownership

According to ethnographers, women play a greater role in the lives of dogs than men do (Chambers et al. 2020). Women are also the ones who usually take care of dogs in modern households, for example, feeding and cleaning up after them (Herzog 2007). Women are the ones who 'baby talk' to dogs more often (Volsche et al. 2020). In one experiment, eye contact only increased oxytocin levels in women but not in men (Kekecs et al. 2016). These findings support the theory of biological embeddedness in dog ownership. However, it is very important to note that men are underrepresented in related research, generally barely 10%, and to understand the role of gender in dog ownership, male participation should be increased (Herzog 2007).

2.6. Cultural Differences in Dog Ownership

Research on dogs focuses on Western cultures, but attitudes towards dogs vary significantly from culture to culture, and this variation may be related to environmental constraints, disease burden, and livelihood systems (Herzog 2014). For example, dogs appear to be less useful in warm environments and, surprisingly, in cultures that rely heavily on animal husbandry (Chambers et al. 2020). Cultural comparisons of dog ownership and attitudes toward dogs can help us understand the divergent role of dogs in societies and may also bring us closer to understanding the origins of current trends.

2.7. Welfare of Dogs

While the dog population is growing thanks to human preferences, some individuals, most often short-headed (brachycephalic) dogs, can suffer from a number of diseases that, despite veterinary care, can compromise their quality of life. It is important to investigate why and how selection for child-like traits affects the brain and morphology of dogs and, thus, their behaviour and health. The identification of individuals and breeds that tolerate urban human environments well is an important line of research (King et al. 2009). Many dogs do not tolerate urban living conditions well, with confinement and constant control leading to behavioural problems. Researchers need to help develop educational campaigns for potential dog owners so that they can make informed decisions based on the dog's needs, personality,

and the owner's lifestyle. It is also essential that people are educated about what healthy dogs look like (Bognár – Kubinyi 2023). A related welfare issue is that a very close emotional relationship can delay euthanasia, thereby prolonging the suffering of a terminally ill dog (Wallis et al. 2023), although some authors argue that the process prepares the animal for death and depriving them of it means denying their right to die on their own terms (Sanders 1995).

2.8 The Role of Pet Species Other Than Dogs

In many countries, cats are more popular pets than dogs. In Switzerland and Austria, for example, there are three to four times more cats than dogs, and they can form close relationships with humans (Pongrácz – Szapu 2018; Herzog – Rowan 2019; Ines et al. 2021). Ferrets, rodents, rabbits, and parrots can also be ideal pets, with significantly lower maintenance costs than dogs (see, for example, Hernádi et al. 2012; Reinhold et al. 2019; Dobos et al. 2023). What makes a species an ideal pet and what makes it a family member requires further research.

2.9. Robots and Animated Characters in Companion Roles

Social, autonomous, caring robots or animated characters might replace, at least partially, companion animals. Animal training methods can also be used to develop robotic behaviour (Kaplan et al. 2002). Robots may also be able to express attachment to their owners (Kaplan 2001; Krueger et al. 2021). Early experiments with children playing with AIBO, a dog-like autonomous robot and a real puppy showed that the limited capabilities of the robot resulted in less structured behavioural interactions (Kerepesi et al. 2006). However, in a more recent study using a more responsive robot, 11-12-year-old children spent more time interacting with the robot than with the dog (Barber et al. 2021). Although children self-reportedly preferred interacting with the live dog, they experienced more positive emotions after interacting with the robot when it was attributed higher mental abilities. Further research should investigate under what circumstances it may be preferable to keep robotic pets rather than real ones. For example, one study found that PARO, a seal-like robotic pet, reduced stress and anxiety in elderly people with dementia (Petersen et al. 2017).

2.10. Social Debate on Childcare

Humans have an innate, evolutionary need to connect with others and to care for someone, especially children (Hrady – Burkart 2020). Today, however, adults have limited opportunities to interact with young children. For example, as mentioned above, nine out of ten Hungarian adults do not spend time with children under the age of six [based on the dataset of (Kubinyi – Varga 2023)]. This is a relatively new phenomenon in human history, compared to the three hundred thousand years of evolution, as more than twelve thousand years ago, in prehistoric times, children were most likely raised by a community, with all adults having regular contact with the children of their group. I argue that this change is probably challenging for both children and parents, which might be one possible source of mental health problems. At the same time, I suggest that in those who are not raising young children or caring for others, there can be an insatiable and sometimes unrecognised desire to care for others.

Many people not only care for their own dogs but also prepare dogs for adoption. Foster dog parents are temporary caregivers who provide a transitional home for dogs in need until they find a permanent home through adoption. It would be interesting to examine whether

foster caregiving is related to limited access to social support from relatives, a sense of responsibility for the well-being of others, a desire to do good, and a need for love and respect. Exploring these questions could also help explain why people are more likely to take on dog fostering rather than child fostering, where there are fewer foster parents than needed (see, for example, Kaasbøll et al. 2019).

Since not all cultures channel what I consider an accumulated urge to care for dogs, it is worth considering whether this might be the most beneficial way for society in Western cultures. It would be important to carry out research to answer the question of why people choose to care for dogs rather than children in their neighbourhood, extended family, or circle of friends, while, from a human evolution perspective, caring for children would be more justified. Several explanations are possible. For instance, dog ownership is currently a culturally accepted, simpler form of caregiving compared to raising children in Western cultures. Furthermore, institutions have taken over child-rearing responsibilities, and there is a lack of socially established, well-defined methods for the voluntary (unpaid) care of non-biological children. For example, there have been initiatives to involve residents of local nursing homes in local daycare,⁴ which is an excellent idea and could probably be done with minimal organisation. However, nurseries, kindergartens, and primary schools could also host local volunteers for a few hours a day after appropriate psychological screening. It would be worth starting a social dialogue on whether some of the biological urges to care for the vulnerable, especially young children, could be redirected towards children. It might also be better for dogs, who do not necessarily enjoy being treated like ‘fur babies.’ Raising an emotionally balanced and caring generation could lead to a more caring community for all, which will have a positive impact on the quality of life of both dogs and humans.

In summary, the combined consideration of the evolutionary and the cultural aspects of dog ownership offers a new perspective for various scientific and applied fields, including animal welfare, veterinary science, behavioural genetics, neuroscience, psychology, sociology, and consumer research. The development of science-based guidelines based on this theory can improve the welfare of both animals and humans.

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⁴For an example in the UK, see Pidd 2024.

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