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The intricate relationship between dogs and humans: Historical, cultural, and societal perspectives

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Abstract

Dogs have been humanity's earliest and most enduring companions, evolving over tens of thousands of years. Their roles in human society range from loyal protectors and workers to valued emotional supports. This article explores the deep historical, cultural, and societal bonds between humans and dogs, drawing from global traditions and Indian contexts. While dogs enrich human lives in countless ways, the growing population of free-roaming and stray dogs presents significant challenges, including public health risks, road accidents, and human-animal conflict. India, particularly regions like Assam, faces a critical stray dog crisis exacerbated by weak policy enforcement, funding shortages, and poor waste management. The article looks at the crisis from different angles like culture, usefulness, neglect, and policy and suggests practical and humane solutions such as sterilization, vaccination, and spreading public awareness. Combining care with responsibility is key to building a safer and kinder way for humans and dogs to live together in today's world.

Keywords: Canines, domestication, welfare, rabies, sterilization

Introduction

Dogs are highly social animals, intrinsically wired to seek companionship and form close bonds. Animal behaviourists classify dogs as pack animals, highlighting their natural tendency to live and thrive in social groups (Vanacore, 2025) ^[49]. This social nature has made dogs indispensable companions to humans across millennia. Today, dogs are widely kept as pets, offering not only physical companionship but also emotional support and social interaction, fulfilling psychological and social needs of their owners. However, when dogs are left to roam freely without proper care or confinement, they can pose serious risks to public safety and health, including road accidents, livestock attacks, and the spread of diseases such as rabies. In many areas, especially urban and semi-urban India, the growing population of stray dogs has led to frequent human-animal conflicts, raising concerns about both animal welfare and community well-being.

Historical Origins and Domestication

The relationship between humans and dogs date back tens of thousands of years. Archaeological and genetic evidence suggest that dogs were likely the first animal domesticated by humans, with early domestication possibly occurring around 15,000 years ago (Anonymous, 2019). While the exact timeline remains debated, some dog remains found at European sites over 30,000 years old have sparked ongoing discussions among scholars about whether these early canines were truly domesticated (Anonymous, 2025a) ^[8].

In ancient civilizations, dogs held esteemed places. For example, in ancient Egypt, purebred dogs were symbols of royalty and privilege. These dogs were pampered with jewels and fine foods, and were even buried with rulers to guard them in the afterlife (Vanacore, 2025) ^[49]. This respect shows that dogs were valued early on, not just for work but also as sacred protectors.

Dogs in Ancient Indian Literature and Archaeological Evidence

Indian cultural heritage richly references dogs, affirming their long-standing relationship with humans. The Vedic and post-Vedic literature mentions dogs in symbolic and spiritual roles. Dogs were linked to Yama, the god of death, and his twin dogs, believed to guard the path to the afterlife with their powerful vision. The dog became the vahana

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(vehicle) of Bhairava, a form of Shiva, further solidifying its sacred status (Gupta, 2024) ^[27]. Sarama, a female dog in the service of Indra, helped Guru Brihaspati to retrieve their cows stolen by Panis or thieves (Sadhale and Nene, 2010) ^[40]. In the Mahabharata, Janmejaya was cursed by a mother dog for hitting her puppies while they were performing the sacrifice. Yudhishthira, the elder brother of Pandavas, did not give up on the dog accompanying him on the journey to heaven after the death of his brothers and Draupadi (Biswas, 2022) ^[16].

Archaeological discoveries enrich our understanding of early human-canine relations. Rock-wall etchings in north-western Saudi Arabia, estimated to be 8,000 years old, depict humans and dogs working together likely one of the oldest visual proofs of this cohesive relationship (Carozza, 2018) ^[17]. Similarly, a variety of dog figurines unearthed at Harappa and other sites of the ancient Indus Valley civilization attest to the cultural significance of dogs in South Asia (Anonymous, 2015) ^[5].

Dogs as Functional Partners and Symbols

The utilitarian role of dogs evolved significantly over time. Today, dogs serve myriad purposes from guides for the blind and disabled to critical police and military roles. Their loyalty and intelligence have made them indispensable collaborators in human security and assistance. Moreover, dogs have embedded themselves deeply in cultural consciousness, symbolized by countless proverbs across different languages and communities.

For instance, the proverb "A Dog is Said to Be Loyal to Its Master" reflects the deep-rooted belief in a dog's unwavering faithfulness, sometimes even more than people. This belief is widespread, including among Assamese speakers, who admire dogs for staying loyal even during times of hardship, such as illness or hunger during their owner's absence. Such sayings underscore the emotional bond between humans and dogs, highlighting their roles as trusted companions.

Other proverbs like "Even on a bad day, the dog does not stop barking" metaphorically illustrate the unchanging nature of one's character, equalizing human's traits and dog behaviour. Similarly, the phrase "No matter how much you rub, a dog's tail will never straighten" speaks to the irreversible nature of inherent characteristics, suggesting that some things about a person or how they act cannot be changed, no matter how do you try. Another cautionary saying, "Don't think the dog isn't barking," warns people not to ignore signs of danger, just like how dogs always stay alert.

Sled Dogs and Arctic Survival

The practical contributions of dogs are evident in diverse environments, including extreme conditions such as the Arctic. Sled dogs have been used in the Arctic for at least 8,000 years, providing essential transportation across ice and snow (Anonymous, 2025b) ^[9]. Until the 20th century, sled dogs and boats were the only ways to travel and carry goods to these areas, which were otherwise inaccessible to humans. Their importance was so profound that human survival in the Arctic would have probably been impossible without these canine partners as remarked by few anthropologists (Anonymous, 2012) ^[10].

In Antarctica, sled dogs played a vital role in exploration and transport from the late 1890s until their ban in 1994, imposed under the Protocol on Environmental Protection to the Antarctic Treaty (1992). Despite their removal, sled dogs

remain valued members of Arctic communities, to whom they provide protection, companionship, and support in hunting and fishing activities, strengthening the bond between humans and dogs in these harsh climates. Dogs communicate through chemicals (or pheromones), especially those found in urine, which convey vital information about age, sex, health, and emotional state. By sniffing places like trees or hydrants where other dogs have urinated, they collect important social information similar to how we read the news. This scent-based "Peemail" helps them to remain updated about presence of other dogs in the area, making it a crucial part of their social behaviour and communication (Coren, 2020) ^[20].

Dog Meat: Cultural Practices and Controversies

While dogs are cherished companions worldwide, in some cultures, dog meat has been historically consumed either as a regular source of food or survival resource during crises. Countries such as Cambodia, China, India, Indonesia, Ghana, Laos, Nigeria, South Korea, Switzerland, and Vietnam have varying legal stances regarding dog meat consumption, some permitting it fully or partially, others lacking nationwide bans (Anonymous, 2025c) ^[2]. In certain cultures, dogs or puppies are even sacrificed to infernal deities, followed by the ritualistic consumption of their meat (Anonymous, 2025c) ^[2]. Claire (2014) ^[19] estimated that approximately 25 million dogs are consumed annually worldwide, underscoring the scale of this practice. This issue shows how people have different feelings about dogs either they are loved, used, or even eaten, depending on the culture.

Evolution of Communication and Emotional Bonding

Dogs and humans have co-evolved, developing sophisticated ways to communicate and connect. Notably, dogs have adopted human-like interaction methods, such as mutual gaze, which enhances emotional bonding. Nagasawa *et al.* (2015) ^[36] found that this gaze increases oxytocin levels, a hormone linked to bonding, in both dogs and their owners, creating a reinforcing loop of affection. This biological mechanism likely played a key role in the co-evolution of humans and dogs, strengthening emotional connections and cooperation.

The presence of dogs has also been shown to reduce physiological stress responses, such as elevated heart rate and cortisol levels, even more effectively than the presence of a close friend (Polheber & Matchock, 2014) ^[39]. Beyond emotional comfort, dogs also help in easing symptoms of anxiety, panic attacks, and even reduce self-harm/ suicidal tendencies (Pandey and Yadav, 2024) ^[38]. Their companionship is especially beneficial in reducing loneliness, particularly among individuals or couples without children. Krause-Parello *et al.* (2014) ^[33] highlighted the positive impact of pet companionship on loneliness and its potential to inspire parenthood in childless couples.

Dogs offer love, loyalty, and emotional support, reminding us of our duty to care for, protect, and adopt those still suffering from neglect, abuse, or homelessness. To honour this unique bond, International Dog Day is celebrated annually on August 26. Started in 2004 by animal welfare advocate Colleen Paige, as a token of love to her adopted dog, Sheltie, the day is celebrated to promote adoption, to become a responsible pet owner, and to recognise dogs' vital roles in our lives.

Dogs as Guardians and Workers: Dogs are often categorized based on their relationship to humans as owned,

community-owned, or unowned, reflecting degrees of confinement and care (Taylor *et al.*, 2017) ^[44]. In India, dogs are commonly regarded as devoted guardians of homes and families (Subramanian, 2017) ^[42]. In regions such as Jammu & Kashmir, Ladakh, Himachal Pradesh etc, and countries like Bulgaria, the United States, Germany, Switzerland, and Namibia etc, dogs as a protector companion (calling it a livestock guardian dogs or LGD) ^[6] live full-time with flocks or herds (Anonymous, 2025d) ^[6]. The large, strong Molossians hounds were used by the tribe Molossians in Epirus as mentioned by Aristotle and Virgil.

Detection Dogs: Enhancing Security and Health

Sniffer or detection dogs utilize their extraordinary sense of smell, estimated to be 2,000 to 10,000 times more sensitive than that of humans, to detect substances critical for security and safety (Anonymous, 2025e) ^[3]. Their skills extend beyond finding explosives and narcotics (Gazit and Tarkel, 2003) ^[25], dogs are employed to locate survivors in disaster zones and even detect diseases such as cancer (Williams and Pembroke 1989) ^[51] and COVID-19 infections (Kokocińska-Kusiak, 2021; Eskandari *et al.*, 2021) ^[23, 31]. Dog also possess the ability to detect cows in oestrus through scent, effectively interpreting chemical signals as a form of communication. Trained dogs can distinguish swabs with urine, blood, vaginal fluid and milk (Kiddy *et al.*, 1984) ^[30], achieving up to 80.3% accuracy after just one week of training (Fischer-Tenhagen *et al.*, 2011) ^[24]. These type of highly capable dogs are considered invaluable assets in both public health and security sectors.

Dog Population and Ownership Trends

In India, dog ownership is growing rapidly. In 2018, the owned dog population was approximately 12.58 million, and projections suggest it could reach over 51.53 million by 2028 (Minhas, 2022) ^[35]. Pet ownership is estimated to grow at an annual rate of 12% (Akhter, 2022) ^[1]. However, the ownership landscape is complicated by the presence of community-cared or loosely owned street dogs, particularly in Indian cities. This blurs the lines between ownership and abandonment, complicating regulation and accountability (Sudarshan *et al.*, 2006) ^[43].

Free-Ranging and Stray Dogs: Societal and Public Health Challenges

Free-ranging dogs, those not confined within homes or yards, include street dogs, village dogs, stray dogs, and feral dogs. These animals may or may not have an owner (Hogasen *et al.*, 2013) ^[28]. Globally, the dog population is estimated at around 900 million and rising. Of these, only about 20% are classified as owned and restrained pets (Mathew, 2013; Karthryn *et al.*, 2013) ^[53, 54]. According to another estimate, the global dog population ranges between 900 million to 1 billion, with fewer than 300 million being strays (Dogster, 2025) ^[22].

The presence of free-roaming dogs presents serious challenges for public safety and community well-being. Packs of dogs, particularly feral or un-socialized ones, can become dangerous to pedestrians, children, old people and livestock. Even dogs that are typically friendly may act aggressively when in a group due to instinctual territorial behaviours. In rural or poorly regulated areas, packs have been involved in attacks. For instance, several cases of attacks on children were

reported in Uttar Pradesh (The Hindu, 2018) ^[45].

A civil society report from Delhi revealed that dog attacks result in millions of bite incidents annually. In India, there are seven million reported cases of dog bites each year, along with millions of global rabies-related deaths (Anonymous, 2022) ^[11]. The report also cited that Mahatma Gandhi even believed that the suffering of stray dogs reflects society's failure to care for both its animals and its people.

Irresponsible pet abandonment globally also contribute to free-roaming and stray dogs populations posing a serious threat to public (Belo *et al.*, 2015) ^[13]. These abandoned dogs increase the risk of dog bites, disease transmission, predation of wildlife, traffic accidents, and environmental pollution (Ugbomoiko *et al.*, 2008) ^[48]. Data also suggest varying rates of dog bites by owned dogs, including 43.8% in Tamil Nadu (Charulatha *et al.*, 2021) ^[18] and 11.8% in Bhuj, Gujarat (Bharadva *et al.*, 2015) ^[14]. However, reliable data differentiating bites by owned versus unowned dogs across all Indian states remain scarce or unreported.

The Stray Dog Crisis in India and Assam

India faces an enormous stray dog crisis, with estimates indicating around 62 million stray dogs across the country (Stanley, 2023) ^[41]. The 20th Livestock Census of India (2019) recorded 15.31 million street dogs. Between 2019 and 2022, over 16 million dog bite incidents were reported, an average of nearly 10,000 per day (Koul and Priye, 2023) ^[32]. In 2023 alone, more than 3 million dog bites were recorded, leading to 286 human deaths (Anonymous, 2024) ^[11]. Stray dogs are primary carriers of rabies, contributing to India's high annual rabies death toll of 18,000 to 20,000 and accounting for 30-36% of global rabies fatalities (WHO, 2025) ^[50].

Assam reflects a similar crisis. In Guwahati city alone, the estimated stray dog population ranges from 30,000 to 100,000, depending on the source (The Sentinel, 2018) ^[46]. Although NGOs and local bodies have implemented sterilization and vaccination efforts, these initiatives remain limited in scope. For example, the Guwahati Municipal Corporation, in collaboration with Just Be Friendly, sterilized and vaccinated around 4,500 dogs (The Sentinel, 2021) ^[47]. However, such efforts have been likened to "putting a chilli in a heap of spinach," indicating their minimal impact relative to the scale of the problem. To be effective, these programs require large-scale expansion and support from multiple organizations. Various standardized techniques are available for the sterilization of dogs, but these require technical expertise, financial resources, and trained personnel. Additionally, techniques such as ovariectomy during the early stages of pregnancy (Hafez, 1993) ^[55] or unilateral ovariectomy during the first third of gestation (Bhattacharyya *et al.*, 2005) ^[15] have been reported as effective methods for controlling misalliance or mismating in female dogs.

One of the biggest challenges is the lack of an official stray dog census. Without accurate data, interventions are reactive rather than strategic. Moreover, rural areas are often overlooked, with little to no sterilization or vaccination programs in place. This leaves large segments of the stray population unprotected, perpetuating the risk of rabies transmission and uncontrolled population growth.

Beyond health concerns, stray dogs also impact rural livelihoods. Attacks on livestock are increasingly reported,

such as the 2022 incident involving goats in Chaygaon, Assam (Guha, 2022) ^[26]. Stray dogs are also a major cause of traffic accidents. Nationwide, they account for 58% of animal-related road accidents, (Dash, 2022) ^[21] including in Assam.

Root Causes and Policy Gaps

The issue stems from multiple intertwined factors. The Animal Birth Control (ABC) Rules (2023) emphasize humane sterilization and vaccination to control stray populations. However, weak implementation, limited infrastructure, and scarce funding undermine these mandates. The central government's Grants-in-aid to the Animal Welfare Board of India (AWBI) for the Animal Birth Control (ABC) program dropped from ₹41.17 lakh in 2015-16 to ₹7.35 lakh in 2019-20, of which only ₹2.93 lakh was used, while local governments in India also struggle to raise their own funds (Aredath and Vanak, 2023) ^[12]. From 2021 to 2024, the AWBI has not received a single rupee (Nagpur Today, 2024) ^[37]. Lack of Government support leaving NGOs and civic bodies to struggle with inadequate resources.

Rapid reproduction among unsterilized female dogs exponentially increases stray populations, with one female potentially leading to tens of thousands of descendants within six years. Easy access to food from open garbage dumps supports population growth, intensifying conflicts.

Strategies for Control and Mitigation

Addressing this multifaceted problem requires coordinated, data-driven approaches. Conducting comprehensive stray dog censuses, modelled on successful initiatives like Mumbai's 2024 census, is essential for proper planning and implementation. Regular updates every three to five years can ensure responsiveness and enhance effectiveness to changing dynamics.

Reviving and expanding government grants to support NGOs and municipal efforts is critical. Empowering these groups to carry out Catch-Neuter-Vaccinate-Return (CNVR) programs with at least 70% coverage is a proven strategy to curb population growth humanely.

Establishing well-equipped sterilization centres and deploying mobile veterinary units, particularly in underserved rural and high-density urban areas, can enhance coverage. Public awareness campaigns in regional languages can educate communities on responsible dog feeding, sterilization benefits, and safe coexistence. Improved waste management is crucial to reducing stray dogs' food sources, thereby limiting their population growth.

Risk Mitigation for Public Safety

- Avoid walking alone near groups of stray dogs, especially during early morning or late evening hours when dogs are most active.
- Do not run when confronted by stray dogs, as it may trigger their chase instinct; instead, stay calm and avoid direct eye contact.
- Teach children to remain still and quiet when approached by dogs and to seek help from nearby adults.
- Promptly report aggressive behaviour, dog bites, or suspected rabid dogs to local municipal or animal control authorities for timely intervention.
- Awareness and extension programmes play a critical role in reducing roaming dog populations by educating the

public on responsible pet ownership, the importance of sterilization and vaccination, and the dangers of abandoning pets. These programmes also promote community involvement in Animal Birth Control (ABC) efforts, safe waste disposal, and feeding practices that do not encourage stray congregation, thus contributing to a safer and more humane environment for both humans and animals.

Conclusion

Dogs have been integral to human society for thousands of years, evolving from ancient companions and guardians to modern-day partners in security, therapy, and everyday life. Archaeological and historical evidence reveals their deep-rooted bond with humans across cultures and epochs, underscoring their social, spiritual, and practical roles. However, the contemporary challenges posed by the rising population of stray dogs, particularly in regions like Assam and broader India, highlight urgent needs for humane and strategic management. With accurate data, sustained government support, and community engagement, effective programs such as sterilization, vaccination, and public education can balance animal welfare with public safety. Ultimately, fostering coexistence between humans and dogs can ensure healthier communities and preserve this unique interspecies relationship for generations to come.

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