



Therapy across the Species Divide: Communication, Welfare, and the Ethics of Interpreting Animal Experience

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ABSTRACT

Therapeutic relationships between humans and non-human animals are frequently assessed according to their contribution to human health, emotional functioning and social well-being. Comparatively less attention has been directed toward how the animals involved experience these interactions and how their welfare should shape therapeutic practice. This interdisciplinary narrative review examines human-animal therapeutic relationships through the conceptual framework of interpretative asymmetry, drawing together perspectives from human-animal studies, ethology, animal welfare research and biological approaches to interspecies communication. Cultural representations are considered only as boundary narratives that help demonstrate potential problems associated with projection, idealization and romanticized interpretations of animal behaviour.

Interpretative asymmetry is proposed as a conceptual condition rather than an empirically quantified measure. It refers to an imbalance in who determines the meaning, purpose and conditions of an interspecies encounter. Human participants and professionals typically establish therapeutic objectives, structure the environment and interpret animal behaviour in relation to ideas such as attachment, cooperation, comfort or emotional support. Non-human animals, however, engage through behavioural, sensory and physiological processes that may reflect a range of states, including positive engagement, familiarity, arousal, stress, behavioural inhibition or attempts to avoid conflict. These possibilities cannot always be distinguished through human observation alone.

The review argues that the assessment of animal-assisted interventions and animal-assisted therapy should extend beyond evidence of benefit to human participants. Equal attention should be given to indicators of animal welfare, including the intensity and frequency of work, opportunities for rest and recovery, the ability to move away from unwanted interaction, the preservation of behavioural agency and the competence of handlers and practitioners. Dogs and horses are considered as important applied examples through which these concerns can be examined, while accounts involving wild animals are used to identify the interpretative limits of human assumptions. Recognizing animals as active participants with welfare interests is fundamental to developing more ethically responsible therapeutic relationships across species

KEYWORDS: Human-Animal Relationships; Non-Human Animals; Animal Welfare; Human-Animal Studies; Interspecies Communication; Interpretative Asymmetry; Animal-Assisted Interventions; Animal-Assisted Therapy; Equine-Assisted Interventions; Animal Agency; Affective Labour; Anthropomorphism.

INTRODUCTION

For the purposes of this article, the word “animal” is used to mean a non-human animal unless a different meaning is explicitly indicated. Similarly, “human-animal relationship” refers specifically to an interactional or relational connection between humans and non-human animals. The incorporation of animals into practices intended to support human psychological health, emotional well-being and social functioning has a long history. Historical accounts indicate that such practices were already emerging in the

eighteenth century, including early efforts to involve animals in institutional care and psychiatric environments [1,2]. Animals were expected to encourage emotional engagement among patients and, in some settings, to create opportunities for purposeful activity through feeding, grooming and other forms of daily care [2]. These early arrangements involved different species, ranging from farm animals to animals more commonly kept as companions.

Although animals occupied an important place in these therapeutic environments, their involvement was generally

understood in relation to the outcomes they could produce for human participants. Their role was primarily evaluated according to their usefulness in promoting human recovery, engagement or well-being. This perspective does not necessarily mean that animals were deliberately neglected or subjected to harmful conditions. Nevertheless, prevailing scientific approaches of the nineteenth century offered limited conceptual space for recognizing non-human animals as subjects with distinct emotional lives, social capacities and species-specific interests [3,4].

Early approaches to animal welfare were also largely concerned with physical condition and the maintenance of animals at a level that allowed them to carry out expected functions. Dimensions now considered central to welfare, including behavioural agency, the ability to influence one's surroundings, emotional stability and protection from excessive sensory stimulation, received considerably less systematic attention [4,5]. As a result, the historical development of therapeutic practices involving animals reveals an underlying imbalance: human needs were placed at the centre of the intervention, whereas the animals own perspective was rarely treated as an independent scientific or ethical concern. This imbalance shaped not only the practical organization of therapeutic encounters but also the ways in which communication between humans and other species was understood.

This review uses the concept of interpretative asymmetry to describe this condition. The term is not presented as a measurable statistical construct; rather, it identifies a conceptual and structural inequality embedded within therapeutic human-animal relationships. Interpretative asymmetry arises from an unequal distribution of control over meaning, access to communication and opportunities for agency. Humans usually determine why an interaction takes place, where it occurs and how long it continues. They also interpret the significance of an animal's behaviour within a therapeutic framework. Animals participate in the same encounter through sensory perception, behaviour and physiological responses shaped by their species-specific capacities, but these responses cannot be accessed directly through human language. Their significance must instead be inferred [6].

It represents this relationship as a shared therapeutic environment experienced from unequal positions. Although humans and animals occupy the same interactional setting, they do not possess the same authority over its purpose, organization or interpretation. The objectives, schedule and criteria used to evaluate the encounter are predominantly established by humans. Animal responses subsequently become meaningful largely through human interpretation, while possible welfare effects must be assessed indirectly through behavioural observations, physiological indicators and the broader context of participation [7].

The figure presents a conceptual model developed by the authors to summarize the central argument of this review. It illustrates how humans and animals participate in a common therapeutic context while occupying different positions in relation to control, interpretation and the visibility of welfare. The therapeutic purpose and conditions of interaction are principally human-defined. In contrast, the animal's experience becomes available to human decision-making only through interpreted signals, making careful attention to behavioural, physiological and contextual evidence essential [8].

Human perceptions of animal behaviour are frequently influenced by emotional expectations, social values and culturally shaped ideas about companionship, trust or support. Such interpretations may, at times, give insufficient attention to the biological foundations and species-specific characteristics of animal communication [6,7]. Evidence from ethology and biological research suggests that animals involved in therapeutic settings are not simply passive features of the environment. They respond to human presence and behaviour through dynamic social, behavioural and physiological processes [8,9]. Human interaction can influence stress-related responses, activity associated with the hypothalamic-pituitary-adrenal axis and physiological mechanisms linked to social affiliation and attachment [9,10,11]. However, participation may also involve experiences that are less readily recognized, including excessive stimulation, persistent arousal, tension or conflicts between competing motivations. These conditions may remain difficult to detect, particularly when observers lack the knowledge required to interpret subtle species-specific signals [12,13].

Taken together, these considerations suggest that therapeutic human-animal relationships should be examined from a broader perspective than human therapeutic outcomes alone. Questions of communication, welfare and animal subjectivity are equally important when assessing the ethical character of these interactions. A central issue is whether therapeutic relationships can reasonably be described as reciprocal or whether apparent reciprocity is often constructed primarily through human interpretations of animal behaviour and presumed intention [3,14,15].

This review examines therapeutic human-animal relationships as asymmetrical forms of interspecies interaction in which therapeutic benefit, communication, welfare and interpretation are closely interconnected. Its purpose is not to determine the clinical effectiveness of animal-assisted interventions or animal-assisted therapy (AAI/AAT). Instead, the review considers how therapeutic value is defined and interpreted by humans and how this process may obscure, simplify or misrepresent the biological requirements and welfare interests of the animals involved.

By bringing together perspectives from human–animal studies, animal welfare science, ethology and interspecies communication, the article seeks to provide a broader framework for understanding both the potential value of therapeutic relationships and the consequences that participation may have for non-human animals [16].

METHODS

It developed as a narrative, interdisciplinary literature review. The review brings together scholarship on animal-assisted interventions and animal-assisted therapy (AAI/AAT), animal welfare, interspecies communication, cognitive ethology and human–animal studies. To support the conceptual discussion, a limited number of documentary and cultural materials concerning human–animal relationships were also considered. These materials were used as illustrative examples rather than as evidence for therapeutic effectiveness or animal welfare outcomes [17–21].

Literature identification was carried out between January and April 2026 using Web of Science, Scopus and Google Scholar. No publication-year limits were imposed because the subject required engagement with literature from different historical periods and disciplinary traditions. The search incorporated combinations of terms including *animal-assisted therapy*, *animal-assisted intervention*, *therapy dog welfare*, *equine-assisted interventions*, *animal welfare*, *interspecies communication*, *human–animal bond*, *anthropomorphism*, *cognitive ethology*, *therapeutic relationships* and *cross-species interaction*. Given the interdisciplinary scope of the article, relevant literature from sociology, philosophy, animal studies and human–animal studies was also examined where it contributed directly to the conceptual questions addressed in the review [22,23].

The search process was purposive and iterative rather than exhaustive. Database results were not used to establish a fixed numerical sample of publications. Instead, potentially relevant records were initially assessed through their titles and abstracts, followed by examination of the full text when the source appeared relevant to the objectives of the study. Important publications identified during this process were also used to locate additional literature through backward and forward citation searching. This approach allowed the review to follow conceptual connections across disciplines while remaining focused on the central questions concerning interpretation, communication and welfare in therapeutic human–animal encounters [24].

Sources were included when they addressed one or more of four principal areas: (i) therapeutic or supportive relationships between humans and animals; (ii) welfare-related concerns in AAI/AAT, including stress, behavioural agency and workload; (iii) interspecies communication, animal behaviour and ethological interpretation; and (iv) theoretical discussions of anthropocentrism, human control,

affective labour and the human interpretation of animal behaviour. Peer-reviewed journal articles, academic books and scholarly book chapters were considered. Publications concerned exclusively with clinical outcomes in human participants were included only when necessary to establish the broader context of AAI/AAT. Evidence of human benefit alone was not regarded as adequate for evaluating the welfare implications of animal participation. Priority was given to studies and conceptual contributions that made it possible to consider human outcomes alongside questions of animal experience, communication and welfare [25–29].

Because the purpose of the article is interpretative and conceptual, the review was not undertaken as a systematic review or meta-analysis. Its objective was to identify and examine major interpretative tensions within therapeutic human–animal relationships and to connect insights from humanistic scholarship with findings and perspectives from ethology, animal welfare science and biological research. Consequently, the methodology did not follow PRISMA procedures, and no quantitative pooling of findings, effect-size calculations or statistical tests of interpretative asymmetry were performed [30].

Documentary and cultural materials included in the discussion were treated separately from the scientific literature. They were not used as empirical evidence concerning the effectiveness of animal-assisted therapy or the welfare consequences of therapeutic participation. Their function was limited to illustrating boundary cases in which human emotional expectations, symbolic meanings or culturally established narratives can influence the interpretation of relationships with animals. These examples were therefore examined for what they reveal about human processes of meaning-making rather than for their capacity to demonstrate therapeutic outcomes [31].

This distinction is central to the methodological framework of the article. The primary focus is the interpretative process through which humans understand, categorize and assign significance to non-human animal behaviour within therapeutic and relational settings. All figures presented in the article are original conceptual illustrations prepared by the authors. They were developed to visually integrate and summarize the principal arguments arising from the literature and do not reproduce or adapt any individual figure from previously published work [32].

HUMAN–ANIMAL THERAPEUTIC RELATIONSHIPS: HISTORICAL AND CONCEPTUAL BACKGROUND

The involvement of non-human animals in activities intended to support human health and well-being developed from a longstanding recognition that relationships with other living beings could have emotional and social value. Reports from the eighteenth and nineteenth centuries described how the presence and care of animals could encourage participation

in daily activities, lessen isolation and promote engagement among people living in institutional and psychiatric settings [1,2]. Over time, relationships with animals began to acquire significance beyond work, agriculture or companionship, gradually becoming associated with emotional support and opportunities for therapeutic engagement.

The more formal development of contemporary animal-assisted interventions, however, largely followed a human-centred logic. Animals were commonly understood as facilitators whose presence could improve human well-being, encourage participation or support particular therapeutic objectives. Their contribution was therefore usually judged according to changes observed in human participants, making human benefit the dominant measure of therapeutic value [16]. Within this framework, considerably less attention was initially given to what participation might mean for the animals themselves.

The growth of modern ethology, cognitive ethology and animal welfare science gradually broadened this perspective. Increasing attention was directed towards the social capacities, emotional experiences and welfare needs of animals participating in human-centred activities [4,5]. This shift challenged the assumption that animals in therapeutic settings could be understood simply as passive instruments. Instead, they came to be recognized as living participants whose responses are shaped by individual characteristics, species-specific communication systems, previous experiences and changing environmental conditions.

The history of human relationships with animals also reveals a persistent combination of care and control. Affection does not necessarily eliminate asymmetry. Animals may be valued, protected and emotionally significant while humans continue to determine their movement, environment, social roles and conditions of participation. From this perspective, the asymmetry considered in the present review extends beyond the possibility that humans may incorrectly interpret animal behaviour. It is also embedded in the structure of relationships in which humans establish the spaces animals occupy, define their expected roles and decide which forms of behaviour are acceptable. Emotional attachment may therefore coexist with substantial human authority over an animal's body, activities and social position [17]. Related theoretical perspectives have further questioned whether domesticated animals should be regarded solely in terms of their usefulness or understood as participants in shared interspecies communities with interests that deserve recognition [18]. Therapeutic encounters must consequently be situated within this wider history of human-defined roles. An animal may be cared for and valued while still having limited influence over whether, when and how it participates in an activity designed by humans [33].

More recent approaches increasingly emphasize relationships

and interactions rather than describing animals primarily in terms of their "use." This change in perspective has implications for both language and practice. The words used to characterize animals and their involvement can influence what humans consider relevant about their behaviour, needs and experiences. How a relationship is described helps establish the conceptual frame through which that relationship is subsequently understood [19]. Describing an animal as a therapeutic resource, partner or participant, for example, can encourage different assumptions about agency, responsibility and welfare [34].

The concept of a human-animal relationship is therefore central to the present discussion. A relationship involves both an actual connection and the process through which shared encounters acquire meaning. In interspecies contexts, these two dimensions cannot easily be separated because humans must interpret animal behaviour through conceptual frameworks that originate largely from human experience and understanding [3,15,20]. The relationship is thus never simply observed; it is also continuously interpreted.

This interpretative process creates important challenges. Research on communication across species indicates that human readings of animal behaviour can be affected by anthropomorphic assumptions and by limited awareness of the biological significance of particular signals. A willingness to remain close, the absence of visible avoidance or behaviour interpreted as affiliative may be taken as evidence that an animal welcomes or reciprocates an interaction. Yet such responses can have several other explanations. Habituation, learned tolerance, dependence on a particular environment and strategies aimed at reducing conflict may produce outwardly similar patterns of behaviour [7,21]. For this reason, apparent cooperation cannot automatically be treated as evidence of positive experience or freely expressed participation [35].

Within AAI/AAT, the same structural imbalance can also be examined through the idea of affective labour. Animals may contribute to therapeutic processes not only through trained tasks or physical presence but also through forms of interaction that help people feel calm, secure, socially connected or emotionally supported. Their presence may facilitate communication and contribute to the regulation of emotional states. These contributions are generally recognized when beneficial changes occur for human participants. The demands associated with producing such outcomes for the animal, however, may be more difficult to identify. Repeated exposure to unfamiliar people, the need to tolerate close contact, sustained behavioural regulation, fatigue and limited opportunities to withdraw may not be equally visible within assessments focused primarily on human outcomes [36].

Recognizing this asymmetry does not mean that animal-

assisted interventions or animal-assisted therapy are inherently harmful, nor does it deny the possibility that animals may experience positive, familiar or rewarding interactions with humans. Rather, it draws attention to the conditions under which therapeutic value is produced. One participant generally establishes the purpose of the encounter and determines how success will be evaluated, whereas the other contributes through behavioural, sensory and physiological processes that must be interpreted indirectly. Such circumstances make welfare-sensitive observation and assessment particularly important [22,23,24].

Contemporary discussion of therapeutic human-animal relationships therefore requires a perspective capable of connecting humanistic questions about meaning, power and interpretation with biological and ethological knowledge about communication, behaviour and welfare. Bringing these approaches together makes it possible to consider therapeutic benefit without treating human outcomes as the only relevant measure of value. It also directs attention toward the effects of participation on animals, including their capacity to communicate discomfort, exercise agency, respond to environmental demands and experience interactions according to their own species-specific needs. Such an integrated framework provides a broader basis for understanding therapeutic relationships across species and for evaluating the responsibilities they create for human practitioners and caregivers [37].

Communication, Interpretation, and Asymmetry in Interspecies Relationships

A major difficulty in examining therapeutic relationships between humans and non-human animals lies in the nature of communication across species. Humans cannot access animal experience directly and therefore rely on observable behaviour, bodily responses and contextual information to infer what an animal may be communicating. These inferences are often shaped by human emotional expectations, social experience and cultural ideas about relationships. As a result, animal behaviour may be interpreted in strongly human

terms, creating a risk of anthropomorphism or of assigning meanings that do not adequately reflect the biological or behavioural significance of a particular response [6,7]. **Table 1** presents a concise series of examples illustrating how an apparently straightforward human interpretation may differ from other ethologically plausible explanations.

Table 1 is intended as a guide to interpretative caution rather than as a diagnostic framework. It does not suggest that human interpretations are always incorrect, nor does it imply that ethological knowledge provides complete access to an animal's subjective state. The meaning of behaviour depends on the circumstances in which it occurs, the animal's learning history, current motivation and the degree of choice available during the interaction. The central concern, therefore, is not that meaningful understanding between species is impossible. Rather, the difficulty arises when a human emotional reading is treated as sufficient proof that an animal is comfortable, willing to participate or experiencing an interaction as reciprocal [38].

This issue has particular relevance in therapeutic contexts because the success of an interaction is commonly assessed according to outcomes observed in humans. Reduced distress, improved emotional well-being, greater motivation, enhanced social engagement or an increased sense of safety may all be regarded as positive outcomes of contact with an animal. However, beneficial effects for the human participant do not, by themselves, establish how the animal experiences the same interaction. A therapeutic encounter may be experienced differently by each participant, and improvement on the human side cannot automatically be taken as evidence of a positive or mutually beneficial relationship [39].

Ethological research indicates that communication depends on complex signalling processes that may involve visual displays, vocal or other acoustic cues, chemical information and physical contact [25]. The significance of these signals is influenced by species-specific sensory capacities and by the environmental and social circumstances in which

Table 1: Interpretative asymmetry between common human readings and alternative ethological readings of non-human animal behaviour.

Observed Behaviour/Situation	Common Human Reading	Alternative or Overlooked Ethological Reading
Approach or proximity-seeking	Affection, trust or attachment	Contact-seeking, learned expectation, social referencing or reward anticipation
Remaining still or quiet	Calm acceptance	Inhibition, uncertainty, fatigue or passive coping
Yawning, lip licking or head turning	Patience, gentleness or relaxation	Appeasement, tension regulation or mild stress signalling
Sustained gaze or following the handler	Bonding, loyalty or focused attention	Monitoring, handler orientation, arousal or learned response
Tolerance of touch or close contact	Comfort, consent or emotional closeness	Habituation, learned tolerance, constrained choice or limited withdrawal
Withdrawal, avoidance or low responsiveness	Disinterest, stubbornness or serenity	Discomfort, overload, fatigue or need for distance

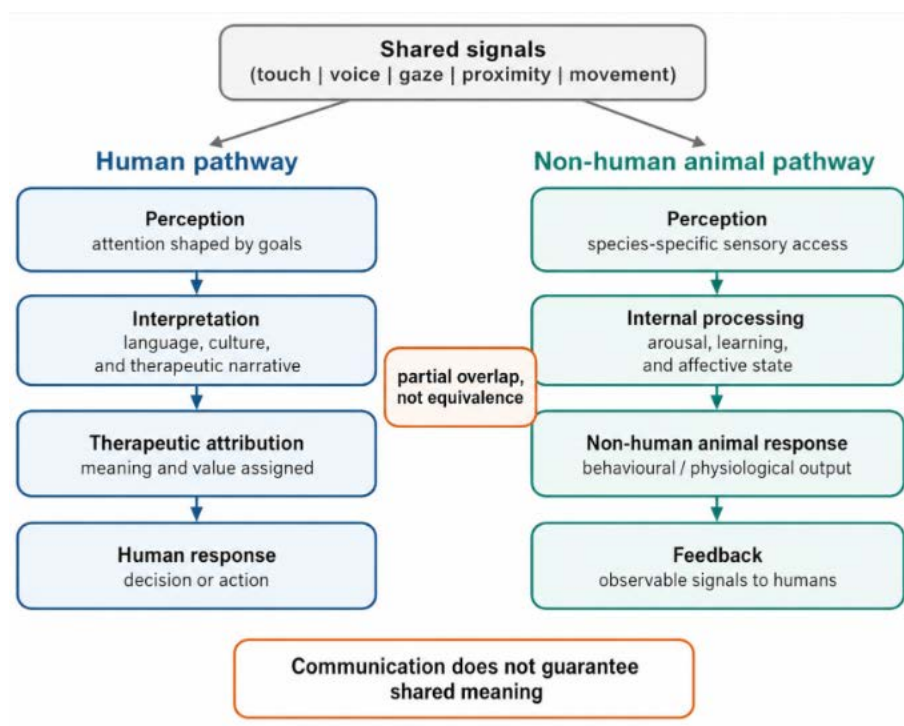


Figure 1: Biological and interpretative levels of cross-species communication in therapeutic interactions.

communication takes place. Humans and animals can therefore share the same physical encounter while perceiving and processing its signals in substantially different ways. Their interpretations may be shaped by different sensory priorities, cognitive processes, emotional states and previous experiences. Figure 1 presents this principle by distinguishing the common interaction from the separate and non-equivalent pathways through which information may be processed by the human and the non-human animal [40].

This conceptual diagram was developed by the authors to illustrate the difference between a shared interaction and shared meaning. The model begins with signals generated within a common social setting but separates the pathways through which those signals are processed by humans and non-human animals. Human interpretation is influenced by language, cultural expectations and therapeutic objectives, whereas information about the animal's experience must be reconstructed indirectly from behavioural, physiological and contextual evidence. Thus, participants may be involved in the same event without necessarily assigning, perceiving or experiencing it in equivalent ways [41].

The challenge is further complicated in species that have spent generations living within environments organized by humans. Dogs, cats and horses, for example, may become highly responsive to human routines, gestures and social expectations. Adaptation to human environments, however, should not be confused with complete agreement between human and animal communication systems. Behaviour that appears to indicate affection, acceptance or willingness may,

in some circumstances, represent a learned response or an adaptive strategy for managing a situation over which the animal has limited control. Habituation, conflict avoidance and attempts to reduce exposure to stressful circumstances can produce behaviours that humans may mistakenly interpret as positive social engagement [12,13].

Interpretative asymmetry is reinforced by the unequal positions humans and animals occupy within the relationship. Humans generally establish the purpose of the interaction, decide its therapeutic relevance and determine the conditions under which participation occurs. They also possess the authority to define and communicate their own accounts of the relationship. Animals cannot provide a linguistic explanation of their experience or directly correct the meaning assigned to their behaviour by human observers. Their responses must instead be translated into human categories and judgments. Therapeutic relationships may therefore operate within an uneven interpretative structure in which human perspectives remain the principal basis for deciding what the interaction means.

Evidence from ethology and biological research nevertheless makes clear that animals are active participants in social encounters with humans. Their bodies and behaviour respond dynamically to social conditions, and human contact may be associated with changes in physiological systems related to stress and social interaction, including cortisol levels, autonomic activity and oxytocin-related processes [9,11]. These findings demonstrate biological responsiveness, but they should not be used as simple proof of reciprocity or emotional attachment as those concepts are

ordinarily understood by humans. Physiological change may arise from several processes, including stress regulation, familiarity, increased predictability, arousal or affiliative interaction. Its interpretation consequently depends on the wider behavioural and environmental context.

For these reasons, the study of therapeutic human-animal relationships requires a cautious approach to interspecies interpretation. Biological evidence and behavioural observation can strengthen understanding, but neither eliminates the limits imposed by differences in communication and subjective experience. A central question is therefore whether human observers are able to recognize animal needs on their own terms or whether those needs continue to be filtered primarily through human assumptions about companionship, attachment, cooperation and emotional reciprocity. Addressing this question is essential for developing therapeutic practices in which the welfare and communicative position of the non-human participant receive attention alongside the benefits experienced by humans.

ANIMAL WELFARE AND THE PROBLEM OF THE “SILENT PARTICIPANT” IN THERAPEUTIC RELATIONSHIPS

Growing attention within animal-assisted interventions has brought greater recognition that therapeutic encounters affect not only human recipients but also the animals involved. Earlier discussions of these practices were largely organized around human outcomes. Animals were commonly viewed as elements that enhanced the therapeutic setting, encouraged participation in treatment or contributed to psychological and emotional well-being. By comparison, the experiences of the animals themselves and the possible welfare consequences of repeated therapeutic participation received considerably less systematic consideration [42,43].

This concern becomes especially important once animals are understood as active contributors to social interaction. They can influence human emotions, behaviour and

patterns of engagement, and they respond continuously to the people and environments around them. At the same time, they cannot explain their experience in a form that humans can directly and unambiguously understand. In this respect, animals may be regarded as “silent participants” in therapeutic relationships. Their presence and responses are evident, but the meaning of those responses is usually established through human observation and interpretation, often within assumptions about trust, attachment, cooperation or emotional reciprocity.

Current approaches to animal welfare extend well beyond physical health and freedom from illness. Welfare also involves the capacity to experience an environment with an appropriate degree of safety and predictability, opportunities to exercise some control and the possibility of performing behaviours relevant to the species [5,26]. From this perspective, therapeutic participation cannot be classified automatically as either beneficial or harmful. The same interaction may offer positive stimulation under some circumstances while becoming emotionally demanding or sensorially overwhelming under others. Signs potentially associated with excessive demands may include changes in self-regulatory behaviour, persistent panting, frequent yawning, attempts to avoid interaction, reduced exploration or marked behavioural inhibition. Table 2 outlines selected conditions that may support welfare as well as circumstances that may increase welfare-related risk during therapeutic participation [44-47].

Table 2 should be understood as a concise framework for evaluating welfare rather than as a standardized protocol applicable to every animal or therapeutic setting. The effect of participation may differ according to species, individual disposition, learning history, previous experiences, duration and intensity of sessions, predictability of the environment, quality of handling and the extent to which the animal can retain control over social contact. These factors should not be evaluated separately. Workload, autonomy, social exposure and opportunities for recovery interact with one another

Table 2: Welfare-supporting conditions and welfare risks in therapeutic relationships involving non-human animals.

Domain	Welfare-Supporting Condition	Welfare Risk If Poorly Managed
Social contact	Voluntary affiliative interaction	Excessive exposure, forced proximity or social fatigue
Environment and routine	Predictability, safety and species-appropriate setting	Sensory overload, monotony or environmental stress
Workload and recovery	Session limits, rest periods and recovery time	Fatigue, cumulative load or chronic stress
Autonomy and control	Choice, consent cues and possibility of withdrawal	Constrained choice, learned inhibition or passive coping
Handler role	Skilled observation, advocacy and protection	Misreading of signals or inappropriate therapeutic demands
Welfare monitoring	Behavioural indicators and, where feasible, physiological measures	Invisible overload or delayed recognition of discomfort

and together influence the overall welfare consequences of participation [48].

A further difficulty concerns the tendency to assign a single meaning to apparently calm behaviour. Human observers may interpret stillness, compliance or the absence of obvious resistance as evidence that an animal is relaxed and accepting of an interaction. However, ethological interpretation requires greater caution. Similar behavioural patterns can also occur when an animal is attempting to reduce conflict, suppressing behavioural responses, coping with stress or adapting to conditions over which it has limited influence. Reduced expression, avoidance and excessive submissiveness may therefore indicate processes that differ substantially from comfort or voluntary engagement [12,13].

For dogs participating in therapeutic work, welfare assessment should ideally rely on several forms of evidence rather than a single indicator. Physiological measures such as cortisol can provide useful information, but they cannot independently establish whether an individual animal is experiencing an interaction positively or negatively. A broader assessment may include posture and movement, avoidance or approach behaviour, willingness to engage, the quality of interactions with handlers, measures of cardiac activity, opportunities for rest and recovery, and characteristics of the surrounding environment [27]. Such an integrated approach is particularly relevant in situations involving children, medical institutions or unfamiliar participants. In these contexts, improvements in human mood or behaviour may be readily observable, whereas canine tiredness, subtle signs of discomfort or inhibited avoidance can remain unnoticed [49].

Comparable concerns arise in equine-assisted interventions, although the specific demands must be interpreted in relation to equine behaviour and physiology. Horses may take part in activities such as groundwork, therapeutic riding, hippotherapy or equine-assisted psychotherapy. These activities vary considerably in their requirements for movement, physical exertion, social contact and exposure to unfamiliar circumstances. Assessing welfare therefore requires attention to behavioural changes together with autonomic and endocrine responses, posture, locomotor comfort, adequate recovery and the possible cumulative effects of repeated participation [28]. Positive outcomes reported by a human participant cannot, on their own, demonstrate that the horse experiences the same encounter as positive [34].

Research on the biological effects of human-animal interaction further indicates that social contact can influence systems associated with stress regulation and affiliative processes. Changes involving cortisol, oxytocin and autonomic nervous system activity have been reported in relation to interactions between humans and animals [10,11]. Nevertheless, physiological responsiveness should

not be treated as direct confirmation of mutual emotional bonding. Biological changes can reflect several processes, including familiarity, social learning, altered environmental predictability, arousal or mechanisms associated with the regulation of tension. Their meaning must therefore be considered alongside behavioural observations and the circumstances in which the interaction occurs.

The unequal distribution of agency presents an additional welfare concern. Humans usually decide the purpose of the therapeutic activity, arrange its timing and setting, and determine the criteria by which the intervention will be judged. Animals may have much less capacity to alter these conditions or to leave an interaction when it becomes unwanted or demanding. This asymmetry has increased interest in recognizing individual differences when animals are selected and managed for therapeutic work. Temperament, prior experience, behavioural adaptability and the ability to cope with particular forms of social and environmental demand should all be considered when planning participation [29,30].

For these reasons, therapeutic human-animal relationships cannot be adequately understood through the narrow image of animals as passive instruments that help deliver treatment. Animals participating in such settings remain biologically, emotionally and socially responsive individuals with welfare requirements that exist independently of the benefits they may provide to humans. Their welfare should therefore be treated as part of the ethical substance of the therapeutic relationship itself, rather than simply as a condition that must be maintained so that positive human outcomes can continue to be achieved. Figure 2 illustrates this principle by presenting welfare as a changing balance in which the consequences of a therapeutic encounter depend on the conditions under which it occurs.

This original conceptual diagram, developed by the authors, represents welfare as a dynamic outcome rather than a fixed characteristic of therapeutic participation. Conditions such as predictable routines, meaningful opportunities for choice, sufficient rest, species-appropriate forms of interaction and competent, attentive handling may contribute to positive welfare. In contrast, excessive demands, unavoidable proximity, inadequate recovery, inaccurate interpretation of behavioural signals and restricted opportunities for withdrawal can increase the likelihood of stress and welfare deterioration. The same therapeutic activity may therefore produce different welfare outcomes depending on how these interacting conditions are managed.

DISCUSSION

Therapeutic relationships between humans and non-human animals have traditionally been discussed mainly in relation to the benefits they may generate for people. Animals may be associated with emotional comfort, social engagement,

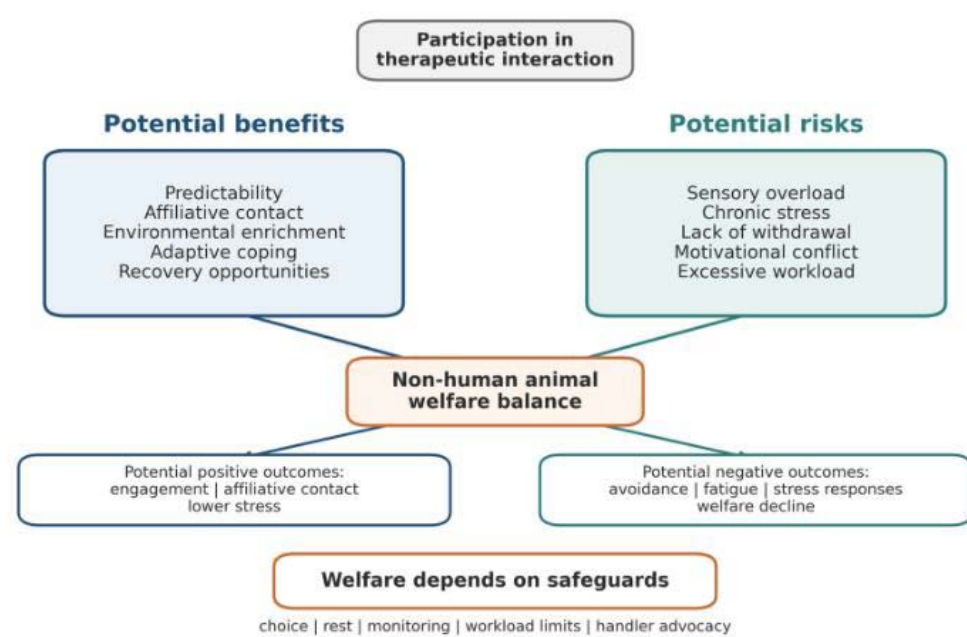


Figure 2: Animal welfare balance in therapeutic relationships.

psychological support and improved quality of life. The findings of the present review, however, suggest that such relationships cannot be adequately evaluated by considering human outcomes alone. Every therapeutic encounter also involves an animal whose behaviour, physiological state and welfare may be affected by the demands of participation [43].

The principal conceptual contribution of this review is the use of interpretative asymmetry to describe a structural characteristic of therapeutic relationships across species. This concept does not deny the possibility of meaningful social bonds between humans and animals. Instead, it draws attention to the unequal distribution of interpretative authority within these encounters. Humans generally establish the objectives of the interaction, organize its physical and temporal conditions, determine expected forms of participation and assign meaning to the animal's responses. The animal remains an active participant, but knowledge of its experience is necessarily filtered through human observation, behavioural assessment and interpretation.

This limitation should not be mistaken for evidence that animals lack emotional or social capacities. Research in ethology and neurobiology has demonstrated that many animals are capable of complex social responsiveness, sensitivity to social and emotional cues and the formation of enduring affiliative relationships [4,6]. Nevertheless, the biological and behavioural processes involved in animal social relationships cannot automatically be translated into human concepts of attachment, trust or emotional reciprocity. Similar outward interactions may arise from different motivational or physiological processes, making caution essential when human meanings are assigned to animal behaviour.

Within this framework, AAI/AAT provides a particularly important setting in which interpretative, communicative and welfare-related inequalities can be examined. The inclusion of this field does not alter the broader conceptual focus of the article; rather, it offers a practical context in which asymmetry becomes especially visible. An animal may assist a person in regulating emotions, encourage social participation or increase motivation, but these outcomes do not independently establish that the animal experiences the encounter as enjoyable, reciprocal or freely chosen. Human therapeutic benefit must therefore be considered alongside evidence concerning the animal's behaviour, physiological responses and the circumstances in which the interaction takes place.

The idea of affective labour provides another way of understanding this imbalance. Animals participating in therapeutic or supportive settings may contribute through their capacity to offer physical presence, facilitate emotional regulation, promote social interaction or create a sense of security. These contributions may be valuable to human participants, yet they can also involve expectations that the animal must repeatedly meet. When this contribution is treated simply as an inherent quality of the animal, the effort associated with sustained social exposure may become less visible. Workload, fatigue, opportunities for agency and individual limits can be overlooked, particularly when an animal is described as a therapeutic "partner" while humans retain almost complete control over the terms of participation [25].

These concerns have direct implications for the design and management of animal-assisted practices. A single welfare protocol cannot be applied without modification across different species, individual animals and therapeutic

environments. However, variation does not eliminate the need for basic safeguards. Decisions concerning participation should account for the individual animal's temperament, age, health and physiological condition, previous experiences, current behavioural state and species-specific requirements. Reasonable limits on workload, sufficient opportunities for rest and recovery, predictable routines and meaningful possibilities to avoid or leave unwanted interactions should form part of responsible practice. Such measures convert the conceptual problem of interpretative asymmetry into a practical obligation: because humans cannot directly access the animal's subjective experience, therapeutic environments should be organized in ways that make discomfort, exhaustion and unwillingness easier to recognize and act upon.

The role of the handler is particularly important in addressing this responsibility. A handler should not function only as a person responsible for facilitating therapeutic outcomes in humans. The handler must also protect the interests of the animal participating in the session. This requires sustained attention to behavioural changes, prevention of excessive or intrusive contact, recognition of conflicting motivations and a willingness to pause, modify or end an interaction when signs indicate that continued participation may compromise welfare. Periodic oversight or consultation with an independent professional knowledgeable in animal behaviour and welfare may provide an additional safeguard against the gradual normalization of subtle stress responses. This may be especially relevant when animals repeatedly participate in emotionally demanding sessions, work with children or vulnerable individuals, or perform within highly structured institutional settings [47]. Ethical discussions of animal-assisted practice have likewise emphasized that animal welfare cannot be considered subordinate to the benefits sought for human participants [48].

Careful interpretation of behavioural and physiological indicators also serves the interests of both parties involved in the therapeutic encounter. When avoidance, behavioural inhibition, fatigue or stress is incorrectly understood as calmness, affection or trust, the consequences may include increased safety risks, reduced quality of the intervention and ethically problematic demands on the animal. By contrast, welfare-sensitive practice may strengthen both safety and the quality of the relationship because the animal is not expected to operate as an unquestioned therapeutic resource. From a One Welfare perspective, animal well-being, human safety and the ethical quality of care are interconnected rather than independent concerns [49].

The cultural boundary narratives considered in this review further illuminate the broader processes through which humans construct meanings around relationships with animals. Their relevance does not lie in providing evidence for the effectiveness of AAI/AAT or for specific welfare outcomes. Instead, they demonstrate how human

expectations may encourage idealization, projection and romanticized readings of animal behaviour, particularly when relationships with wild animals are represented as uncomplicated forms of mutual understanding. These examples therefore contribute to the conceptual argument while remaining distinct from empirical evidence concerning therapeutic practice and animal welfare.

The greater attention to methods capable of examining animal experience through multiple complementary sources of evidence. Particularly valuable studies would combine systematic behavioural assessment and ethograms with physiological measures, including cortisol and heart rate variability, while also considering handler observations, environmental conditions and welfare outcomes over extended periods. Research designs that integrate these dimensions may help distinguish short-term adaptation from sustained positive welfare and provide a more complete understanding of how repeated therapeutic participation affects individual animals. Progress in this area could support the development of therapeutic models in which human benefit is pursued without obscuring the communicative position, agency and welfare needs of the non-human participants.

CONCLUSION

Therapeutic human-animal relationships should not be evaluated solely through the benefits they provide to humans. This review has shown that such relationships are shaped by interpretative asymmetry, whereby humans define therapeutic purposes, control participation and assign meaning to animal behaviour, while animal experiences remain accessible only through indirect behavioural, physiological and contextual evidence. Recognizing this asymmetry does not deny the possibility of meaningful interspecies bonds; instead, it highlights the ethical responsibility to interpret animal participation cautiously. Animal welfare, agency, workload, opportunities for rest and the ability to withdraw should therefore be treated as integral components of therapeutic practice. A multidimensional assessment combining behavioural, physiological and environmental indicators is essential because no single measure can adequately represent an animal's experience. Future research should develop stronger welfare-sensitive methods for understanding animals in therapeutic settings. Ethical human-animal therapy ultimately requires moving beyond the view of animals as therapeutic instruments and recognizing them as active participants whose interests matter independently of human benefit.

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Citation: Schwartz L. "Therapy across the Species Divide: Communication, Welfare, and the Ethics of Interpreting Animal Experience". *American Research Journal of Humanities and Social Sciences*, Vol 11, no. 3, 2026, pp. 100-111.

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