



Investigating sound patterns in interspecies interaction

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ABSTRACT

The humanities and social sciences are currently experiencing an “animal turn”, where new research perspectives on communicative resources have begun to flourish, and where new theoretical insights have helped language research situate itself in broader more-than-human debates. In this growing field, perspectives are being developed on the role of language for the way organisms are intertwined with their environments. This Special Issue focuses on vocal communication specifically. Vocal conduct in human-animal interactions is still under-explored, despite it being one of the core modalities for the joint enactment of the human-nonhuman relationship. The contributions to this Special Issue grasp the opportunity for a renewed and rigorous exploration of sound-based interaction between humans and animals, including the diversity of auditory resources used. In this introduction, we trace the research leading up to this point and provide an overview of individual contributions to the Special Issue.

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1. New approaches to language in interactions between humans and (other) animals

The humanities and social sciences are currently experiencing an “animal turn” (e.g., Haraway, 2007; Derrida, 2008), where new interdisciplinary perspectives bring “an alternative outlook on knowledge production that does not only include animals, but places them centre stage as key actors in the innumerable modes of *being in*, and *making sense of*, the world” (Andersson Cederholm et al., 2014, 6). Inspired by similar interests, a new agenda has evolved in linguistics (e.g., Pennycook, 2018; Cornips, 2022; Rasenberg et al., 2023; Cornips et al., 2024), with scholars increasingly aiming to traverse “the final frontier” of the linguistic research agenda (Cornips, 2019) and looking to establish a “new research programme for the language sciences” (Rasenberg et al., 2023, 310). Among the sub-disciplines of linguistics and communication studies where such work has emerged are ecolinguistics (e.g. Stibbe, 2012; Cook and Sealey, 2017; Zhdanova et al., 2021), human-animal communication (e.g., Plec, 2013; Kulick, 2017; van der Zee and Guo, 2024), and the emerging field of animal linguistics (Berthet et al., 2023; Schlenker et al., 2023; Suzuki, 2024).

In line with the animal turn, new approaches to communicative resources have begun to flourish, including *interspecies* (and *haptic*) *sociality* (Mondémé, 2020, 2023b), *inclusive linguistics* (Cornips, 2019, 2022), and *interspecies pragmatics* (Peltola, 2023, 110, Peltola and Simonen, 2024). To understand the relationships between human and non-human animals and their intertwining social and semiotic worlds, studies in these areas draw on prior concepts including that of *companion species* by Haraway, and that of *Umwelt* by von Uexküll (2010/1934) (see also Kull's (1998) *semiosphere* and Adams' (2016) *enviro-*

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organisms). These theoretical insights have helped language research situate its work in broader more-than-human debates and develop perspectives on the role of language in the way organisms are intertwined with their environments, connected to each other and, in a quite fundamental sense, formed by these relations.

As part of the move to an interspecies focus, linguists have begun to revisit the long-held assumption that language separates humans from other animals in an inherent way. Despite ongoing debates regarding the differences and similarities between human and animal cognitive and linguistic capacities, it has now been established that “the human’s linguistic ability is constituted by a multiplicity of factors, which are shared to one degree or another with other species” (Barón Birchenall, 2016, 22; see paper for an overview). A central area where shared factors have been explored is the infrastructure of communicative interaction – the same infrastructure that is suggested to be the basis for the emergence of language (Levinson, 2022). The basic organizational mechanism of human conversation is sequence organization. Rudimentary forms of sequence organization have been attested among nonhuman primates and birds (Heesen et al., 2022; Logue and Stivers, 2012; Mondada and Meguerditchian, 2022; Pika et al., 2018; Rossano and Liebal, 2014; van Boekholt et al., 2025). While there is no agreement on whether the similarities with human interaction are homologous (indicating an evolutionary continuity between these structures and more complex turn-taking and interaction) or only converging, the sharing of some forms of sequence organization and interactional resources can also be examined in situ in interactions between humans and other animals, specifically, in how they accomplish complex cooperative actions together (Mondémé 2022, 2023a). This has made interspecies interaction a fruitful topic particularly in ethnomethodological conversation analysis, which is equipped to analyze the coordination of social encounters and the sequential organization of social actions in their interactional ecologies, both verbally and bodily.

For anyone observing or participating in interspecies interactions, in particular with pets, it is easy to see that the participants often engage in coherent and mutually adjusted courses of action. Although not directly suggesting biological or cognitive similarity, convergences in how humans and nonhumans respond to each other evidence that the parties have recurrent, procedural methods for organizing joint behavior (Laurier et al., 2006; Goode, 2007; Mondémé, 2022). Examining interactional patterns in authentic situations instead of focusing on species-specific abilities makes it possible to approach communication in a systematic way without depending on evidence of “the (ontological) properties of agents or the intentional character of their behavior” (Mondémé, 2022, 77). This type of analysis is necessarily multimodal, exploring parties’ visual, haptic, kinesic, and vocal trajectories, and aims at discovering how parties coordinate their encounters and, thereby, degrees of mutual intelligibility.

Interaction-focused work on interspecies encounters has pursued several lines of enquiry. These include shared meaning-making and how intersubjectivity is negotiated in interspecies contexts, often with a particular focus on multimodality (Mondémé, 2020, 2023b; Peltola and Simonen, 2024). As is the case for much research on interspecies interaction, dogs have received the most attention, most probably due to their attested bond with humans (Prato-Previde et al., 2003), their specialized social skills (Kaminski and Marshall-Pescini, 2014), and the prevalence of dogs as companion animals in many countries (e.g., Rowan and Kartal, 2018; Anderson et al., 2023; Brill et al., 2024). For example, Goode’s (2007) seminal ethnographic study of his own playing with his companion dog explores how the orderliness of their play is affected by temporality and location, but also more generally by the type of human and canine relationship (‘companion’ and ‘working’). Citing Michalko (1999), Goode discusses how, in contrast to his and his dog’s playful interactions, dog-guides and their visually impaired humans are engaged in ‘a constant conversation’ (p. 111) and become “two in one” (Michalko 1999: 91, cited in Goode, 2007: 110). By comparison, play interaction between human and ‘companion’ dog appears to be less focused on consequential outcomes and more on affect (pp. 110–112). More recent studies have also investigated the interaction between visually impaired people and guide dogs (Mondémé, 2014), who Due (2023) refers to as an ‘interspecies assemblage’ (p. 3). Due shows that during daily tasks, such as walking towards and handling an obstacle, human and dog combine their senses (dog: visual; human: tactile, auditory) to navigate their environment. Both Mondémé (2020; 2023b) and Due (2023) draw on Goodwin’s (2017) concept of haptic sociality to conceptualize the mediated interspecies connection that allows for tactile communication between the two partners.

Related to intersubjectivity is the interactional negotiation and joint social construction of relations between species, which research on interspecies interaction has also been interested in. A number of early studies (Bergmann, 1988; Roberts, 2004; Tannen, 2004; Torres Cajo and Bahlo, 2016) show how humans draw on their companion animals as discursive resources to manage human interactions. For example, by addressing a comment to a co-present animal, humans can deliver praise or criticism to other humans, handle conflicts with them, enact social identities, or simply introduce a new topic of conversation. In their discussion on other-orientation in interaction, Deppermann and Schmidt (2016) make reference to animal-directed talk, using the example of a falconer who entertains his audience by speaking to an owl as if to a human. Here, animal-directed talk is designed as if for the animal but in reality includes only humans in its interactional purpose. For such purposes, speakers can relate to animal participants with what Deppermann and Schmidt conceptualize as ‘imagined partner orientation’ (p. 384), that is, the talk addressed to the recipient ascribes to them verbal competence that is imaginary, serving the speaker’s performance to the audience.

This type of talk contrasts with interactions where animals are the main communicative partners, which is the focus of more recent work on interspecies interactions. Here, talk may still be sensitive to other humans as an overhearing audience, but it is primarily addressed to the animal. These analyses investigate talking to animals as intertwined with the range of interactive resources and coordination with the animal, as opposed to envisaging animals solely as a discursive resource for humans. For example, MacMartin et al. (2014) investigate vets’ *I know* responses to animals who express distress during

examinations. Vets' talk - specifically, their prosody - is designed for the animals, while it also manages the expectations of their human clients. Much work in this area has explored the multimodal resources by which both human and nonhuman participants construct each other as partners in interaction. For example, [Mondémé's \(2023b\)](#) analysis of equine assisted therapy sessions reveals how humans and horses enact a "haptic sociality" where the horse's body is interactionally constructed and negotiated, and their actions are treated as meaningful. Also dealing with animals' bodies, [Simonen \(2023\)](#) shows dogs' embodied responses to human actions, such as verbal commands and throwing a ball, and their sensitivity to whether they are the recipient of a human action or not.

Alongside these broader foci on interspecies relationships and interactions, studies have begun to explore the ways in which sharing one's physical and social environment with other species manifests in linguistic terms - not only in the representation of nonhuman animals in different discourses but also in human-animal interactions. Such analyses can invite us to revisit definitions of linguistic categories, as shown, for example, by [Peltola \(2018\)](#) concerning the linguistic animacy scale. Peltola shows that in Finnish, speakers (e.g. when telling about animal encounters) can include animal referents into a joint animate community through the use of modal expressions that present nonhuman animals as independent agents, as well as through open reference that is more typically reserved for human referents. Both practices show that human/nonhuman animacy in language use is a fluid and 'permeable' concept and that using what are characteristically human-reference constructions to talk about animals does not require the described actions to be human-like, as previously claimed (p. 473–474). Taking an interactional approach to referentiality, [Cornips et al. \(2023\)](#) adopt [Stukenbrock's \(2020\)](#) model for socially organized deictic reference to cat-human interactions. They show that cats use a form of spatial reference by establishing, first, a focused interaction with humans; second, directing their attention to the deictic space; and, third, pointing to the referent, for example, with their ears or through gaze or touch. The analysis expands our understanding of deixis, e.g., by showing how its expression depends on what kind of body the actor has.

As part of their multimodal interaction with animals, humans also adapt their talk phonetically and prosodically to animal co-participants, and these adaptations can map in diverse ways onto interspecific orientations in, e.g., grammar and vocabulary. More generally, sounds - be they human or nonhuman - have the potential to be used as shared resources for meaning-making between species. This Special Issue brings together studies that further develop recent conceptual and analytical approaches with a view to increase our understanding of vocal human-animal interaction.

2. Vocal conduct in interspecies interaction

Regarding vocal communication, the boundary between humans and other animals has traditionally been drawn between 'language proper' and other sounds. This can be traced back to Aristotle's *logos*, that is, "speech informed by reason", and *phonē*, that is, "the sound of the voice, which can express pain or pleasure", with non-human animals regarded as possessing only the latter ([Cornips, 2019](#), 14 citing [Meijer, 2017](#)). However, in light of a contemporary understanding of the many ways in which language, cognition, sociality, and the sensing body are intertwined, such a dichotomy cannot be upheld ([Cornips, 2019](#), 17; see also [Mondémé, 2018](#) and this issue).

Vocal conduct in human-animal interactions is still under-explored, despite it being one of the core modalities for the joint enactment of the human-nonhuman relationship - alongside embodied practices such as gaze, movement, and touch. While the study of human-animal communication was initially ignited by an interest in how humans talk to animals, this was soon followed - and perhaps overshadowed - by a growing interest in embodiment and broader questions of animal agency and participation. In response to this shift, and considering recent developments regarding vocalizations in interaction (e.g., [Keevallik and Ogden, 2020](#)), there is an opportunity for a renewed and rigorous exploration of sound-based interaction between humans and animals, including the diversity of auditory resources used.

Important early contributions to our understanding of vocal human-animal interaction were made by Robert Mitchell (e.g., [Mitchell, 2001](#); [Mitchell and Edmonson, 1999](#)), who was one of the first to compare talk directed at animals to talk directed at human infants. Other work along these lines includes [Hirsh-Pasek and Treiman \(1982\)](#), [Burnham et al. \(2002\)](#), [Xu et al. \(2013\)](#), [Gergely et al. \(2017\)](#), [Jeannin et al. \(2017a\)](#), [de Mouzon et al. \(2022\)](#), and [Koós-Hutás et al. \(2025\)](#). These studies identified recurrent features of how humans talk to pets, often in experimental settings. The main vocal similarity with 'baby talk' appears to be high overall pitch ([Mitchell, 2001](#); [Burnham et al., 2002](#); [Jeannin et al., 2017a](#); [de Mouzon et al., 2022](#); [Koós-Hutás et al., 2025](#)), which is found alongside lexical repetitions, short utterances, and under-complex syntax ([Hirsh-Pasek and Treiman, 1982](#); [Mitchell and Edmonson, 1999](#); [Mitchell, 2001](#); [Jeannin et al., 2017a](#); [Koós-Hutás et al., 2025](#)).

An important factor for vocal communication with animals - as for all communication - is the social and physical context and the activities that the parties are engaged in. In many of the above-mentioned studies, this is not in focus. Two exceptions are [Jeannin et al. \(2017a\)](#) and [Koós-Hutás et al. \(2025\)](#). Jeannin et al., who investigate US American women's dog-directed talk in four social conditions (separation, reunion, play, commands), find that high overall pitch is common during reunions between humans and dogs. The reunion condition generally has more pitch variation than other conditions. Low pitch and varying loudness is typical of the separation condition, where human participants were asked to tell the dog to stay in a room on their own. [Jeannin et al. \(2017a\)](#) conclude that 'female dog owners use a high-pitched voice when they want to express praise or affection and a low-pitched voice when they want to control the dog' (pp. 506–507). [Koós-Hutás et al. \(2025\)](#), however, find no change in dog-directed pitch in two experimental conditions (attention getting, language tutoring). While these studies offer important perspectives on the variability of the kind of interactions humans and animals

are engaged in, the papers in this special issue show that the locally emerging environment of such interactions is even more nuanced when it comes to vocal and other meaning-making practices.

Studies on both naturalistic and experimental settings thereby show that humans rely much on vocal practices in interacting with animals and that these practices include adapting the use of vocal resources to the nonhuman recipients in diverse ways. While there has been considerable interest in the degree to which animal recipients are responsive to human talk and its particular design features (e.g., Heleski et al., 2015; Jeannin et al., 2017b; Smith et al., 2018), it is still largely unclear what importance human talk has for animals in different contexts, as well as what are the local interactional motives for humans' use of specific verbal and sound patterns. The papers in this special issue contribute to these lines of enquiry by exploring vocal resources in diverse settings where humans and non-humans interact with one another (and in some cases, animals interact with conspecifics). Although most of the articles focus on human talk, all the studies also employ their analytical tools to capture the animals' activities, mutual orientations, and layers of intersubjectivity present in the interaction. Often this is done by examining how the parties respond to each other's actions, thereby displaying to each other interpretations of what is happening, as these displays contribute to the events and thereby co-construct them.

In an attempt to move away from the one-sided conceptualization of humans directing their talk to animals, and from paralleling it with infant-directed speech, this special issue also encourages methodological and terminological renewal. In research that considers animals as social actors, it is necessary to develop terminology that captures how animals contribute to meaning-making, and how human language may emerge in response to, and as part of this responsiveness be adapted to, animal communicative partners. We therefore propose to move away from one-sided labels such as *animal-directed speech* to terminology that views talk in a more dynamic way. As an example, the notion of *talk-in-interaction* (e.g. Psathas, 1995) has been used in Conversation Analysis to highlight that the communicative situations in which talk occurs are diverse, that interaction is more than just verbal, and that the structure of talk emerges in processes of interaction. In the same vein, we could refer to *talk-in-interspecies-interaction* to emphasize that human talk can orient to and be contextualized and shaped by the co-presence and involvement of nonhuman individuals in the speech situation. Such possible rewordings, alongside concepts such as *trans-species pidgin* (from Kohn, see Jääskeläinen this issue), avoid treating animals as mere targets of (linguistic) action and instead acknowledge their role in the mode and organization of the interaction. Thereby they produce a more inclusive and less predefined view of language while still maintaining it as the object of study. Furthermore, terms such as *vocal action* or *vocal conduct* are neutral with regard to whether they refer to an utterance with a full-blown syntax by a human or a meow by a kitten, while *sound* also leaves unspecified whether the audible signal is produced by vocal organs or other means.

3. Sound patterns

Against this background, the notion of 'sound pattern' (Couper-Kuhlen and Ford, 2004) aims to capture the diversity of the sound resources across the studies in this special issue as well as their complex relation to definitions of language. The studies include sounds produced without involvement of the vocal organs, such as clapping, as well as vocalizations, such as cow's *mmm* or kittens' *meow* – versions of which are also produced by humans, with the particularities of the human vocal tract. These sounds often lie at the fuzzy boundaries between language, sound, and body; in other words, they are *liminal signs* (Dingemanse, 2020; Keevallik and Ogden, 2020; but see Szczepek Reed this issue). The liminality is, on the one hand, between language and non-language, and on the other hand, between communicative means typical to different species. This liminal space allows the parties to approximate each other's communicative ecology. Quite concretely, humans not only adapt their language use and other interactional resources to the situated action of the non-human companions but also adopt their supposed communicative means, for instance, in mirroring their embodied actions or vocalizations – termed *morphism* by Mondémé (2018). Animals' sounds also feature in the conventions of human language, even if on its margins, in vocabulary that manifests sound symbolism, such as words for animal sound and animal calls. This is one example of animal vocalizations making their way to human languages (e.g. Andrason and Akumbu, 2024). Similarly to what has been shown for fully-fledged syntactic utterances (Peltola, 2018, 2023), sound patterns incorporating animal companions can approximate the animals' world of experience, and the papers in this special issue show how this happens in situated courses of action.

4. The studies in this special issue

The collection of papers in this special issue originates in a panel organized at the International Conference of the International Pragmatics Association in 2023 in Brussels, Belgium, entitled "Sound patterns in interactions between human and nonhuman animals". The studies seek to shed light on fundamental issues in the delivery, design, and interpretation of sound resources in interspecies interactions. They explore the composition of different sound patterns and their role in the organization of social action along with other linguistic and embodied resources, the way humans relate to nonhuman sounds, and the way nonhuman animals are vocally engaged as co-participants (with humans or conspecifics) through different sounds and their positioning in the ongoing events. The papers address common and intersecting themes, such as variations in sound patterns, formation of activities or actions (e.g., greetings), displays of affiliation and stance, intersubjectivity and perception, and institutional practices surrounding animals. The focus is on animals close to humans, both in the sense of frequent interaction and a long joint history with the species: dogs, cats, cows, horses.

To explore these topics, the studies make use of a range of broadly interaction-oriented methods, including multimodal conversation analysis combined with acoustic measurements of prosody, sociolinguistic variationist analysis, ethnography, ecolinguistic detecting, analysis of grammar and semantics, and ethological methods, as well as combinations of qualitative and quantitative methods. Through these explorations, the papers open up novel methodological avenues towards understanding interspecies interaction by using (and renewing) approaches in the study of spoken language and sound (see also Ogden and Keevallik this issue).

Four papers investigate how human participants design sound patterns by adapting them to the context and the recipient. **Peltola, Wu and Grandgeorge** explore the impact of proximity on human-dog interactions as well as the linguistic concepts of meaning and referentiality as they are communicated via vocal and embodied resources. They find that children make more effort to be close to dogs than vice versa, and that proximity manifests in children's vocal delivery, specifically their overall pitch. With regard to referentiality, the authors argue that dogs' barks can carry both affective and referential meaning, for example, with regard to the location of a ball; and that children playing with dogs can create indexical as well as iconic references for dogs through sounds such as clicking, whispering, and changes in pitch, but also through embodied movements such as pointing. The contribution makes a nuanced argument for combining rigorous quantitative and qualitative methods and for the use of naturally-occurring data when studying human-animal interaction.

Mitchell, Howard, Saylor and Minor examine humans' attempts to get dogs' attention during play in a video-recorded experimental setting. What the authors refer to as attention-getting devices (AGDs) include calling the dog's name as well as oral but non-verbal (whistling, kisses, clicks) and bodily sounds, such as hand claps, thigh slaps and finger snaps. The study shows that humans use such devices mostly when the dog is not attending to the human, in other words, they are using them to get the dogs' attention. However, they find that AGDs were not very effective in getting the dog to attend to the human or inducing them to play. The authors discuss the unsuccessfulness of attention-getting as related to the activity of playing, in which the dogs can be highly self-directed and orient more to objects and embodied movements than to sound.

Jääskeläinen investigates archive materials of historical Finnish cattle calls, drawing on previous linguistic work on conative animal calls and on the notion of 'trans-species pidgin'. She argues that cattle calls display human attempts to make language forms more accessible to nonhumans. For example, a 'parlando' manner of vocalizing allows for an uninterrupted speech flow, and loudness and pitch increase the audibility of the calls. Jääskeläinen analyses the musical as well as the linguistic characteristics of cattle calls and focuses specifically on the phonetic features of interjections, which include trills and clicks. The author discusses the conventionalized use of calls for specific animal groups (for example, cows vs. calves) and the factors influencing such conventionalization (such as species, landscapes, weather, distance, and visibility). Jääskeläinen argues that cattle calls function as indexical signs, with the voice acting as the most obviously animal-oriented modality.

Szczepek Reed describes three kinds of speech sounds found in German and English human-horse interactions (riding, riding lessons, lunging). The focus is on clicks, trills, and variants of /ho:/. The analysis reveals the interactional role of these vocalizations: for example, clicks are used to mobilize horses to move faster or with more energy, while /ho:/variants are used to encourage horses to calm or slow down. The paper shows regional variation for trills, which are used for the opposite purpose in German and UK English speaking communities (speed up vs. slow down). Horse-directed vocalizations are found to be highly flexible with regard to their prosodic and phonetic features while also having highly conventionalized meanings for specific human-horse pairs or communities. This arbitrary but conventionalized form-meaning relationship makes them part of an interspecies language.

Three papers focus on animals' sound patterns and humans' (and to some extent animal conspecifics') responses to them. **Norrthon and Nilsson** align with an inclusive linguistics paradigm by mapping out how humans make sense of animals' vocalizations (horses, dogs, cats) and how they show affiliation in responding to them. The authors use multimodal interaction analysis to examine both the vocalizations and the embodied activities that vocalizations are part of. The animals' vocalizations intertwine with movement and gaze towards conspecifics, humans, or objects in space, and humans orient to animals' vocalizations as meaningful elements of this orientation. Humans' responses include designating a particular quality to the animal's vocalization (e.g., a "sigh"), verbalizing knowledge of the animal's experience, matching their sound, and performing concrete actions such as filling a food bowl. In some cases, the animals initiate actions towards the human, while in all cases, their vocalizations mobilize (attempts at) human affiliation across species boundaries.

Harjunpää and Szczepek Reed focus on how humans prosodically match animal vocalizations. Their data consist of a human participant's video recordings of a cat family, in which the human observes and sometimes verbally and bodily interacts with the cat and two kittens. The authors identify matching acoustically (including pitch, octave-shifting, rhythm, duration, intensity and voice quality) and also outline different combinations of imitative resources that the human uses when responding to the cats' vocalizations: the mirroring can be only prosodic, only lexical, or a combination of both. The findings suggest that these resources have different uses in the human's responses to the cats' actions, while prosodic matching always contributes to showing some understanding, and interactionally engaging with, the cats' ongoing activities and experiences. Accordingly, the study discusses matching as not always affiliative but as an interactional infrastructure for coordinating responsive action and as a way to treat the matched vocalization as part of meaningful action on varying levels of intersubjectivity.

Cornips argues for a conceptualization of cows as linguistic actors in cow-human and cow-cow encounters. Aligning with the frameworks of embodied sociolinguistics and multispecies ethnography, the analysis explores the social role of sound variation in inter- and intraspecies greeting sequences. In both contexts, cows' greeting 'mmms' can be more or less

felicitous, as some are met with a response greeting (by either humans or cows) while others are not. The ethnographic data show that cow-human greetings can display considerably more engagement on both sides in the context of a long-term human carer and a cow living in a field than in the context of farmers and cows chained up in a stable. The paper presents and discusses the varying sound patterns that are used in the different greeting sequences: for example, cow's first and/or second greetings appear designed to establish mutual gaze and elicit a response. Sound patterns including the pitch and duration of 'mmm' are conceptualized as practices for interspecies meaning-making.

The collection is complemented by two commentaries, by **Richard Ogden and Leelo Keevalik** and by **Chloé Mondémé**. Ogden and Keevalik discuss complexities in transcription and other representations of animal sounds and human mirroring of those sounds, as well as the challenge of examining and evidencing participation in interaction for the diverse co-present individuals. Mondémé starts with an overview of work on animal semantics, syntax, and pragmatics, providing a history of animals' relation to the study of language and communication, before discussing the present studies in light of a 'grammar of interspecies communication'.

5. Future directions

The study of language and human-animal interaction requires our ongoing advancement of methodological and theoretical solutions, for instance, for discovering more of the animal's role and perspective, and for understanding how joint action and understanding are coordinated interactionally. Detailed multimodal analysis is necessary for uncovering how layers of intersubjectivity are played out in authentic interspecific interactions and for showing how humans and animals coordinate their actions in these situations by using partly shared, partly divergent resources. A specific gap exists in understanding different groups of animals beyond domestic animals.

Another relevant direction is a closer focus on the asymmetries that define human-animal coexistence also in close interactions, even where animals are positively valued and cared for. Here, engagement with the fields of animal rights (Singer, 1975; Regan, 1983), ethics (Garner, 2005; Gruen, 2011), agency (McFarland and Hediger, 2009; Carter and Charles, 2013), and personhood (Francione, 2008; Rowlands, 2019) may be especially relevant. Steps in the direction of exploring asymmetries are taken by some of the papers in this issue in revealing how animals' interests can differ from humans': Peltola et al. show dogs seeking less proximity and less tactile contact than the children playing with them. Mitchell et al. analyze dogs disregarding humans who try to get their attention. The one-sidedness of actions is also shown, for example, in that cows who greet humans are not always responded to (Cornips this issue), while humans' interpretations of, e.g., cats' or horses' experiences (Harjunpää and Szczepek Reed this issue, Norrthon & Nilsson this issue) are more than likely to misrepresent or disregard some aspects of them. Studying the interactional coordination of potential divergences could shed further light on the scope of mutual meaning-making.

Finally, the interplay between sound patterns and the body presents an essential concern for future research, given the haptic nature of much of the interaction between humans and (companion) animals. Fruitful developments are likely to emerge when the challenges of different methods, frameworks, and analytic foci meet to capture human and non-human coexistence.

CRedit authorship contribution statement

Katariina Harjunpää: Conceptualization, Writing – original draft, Writing – review & editing. **Beatrice Szczepek Reed:** Conceptualization, Writing – original draft, Writing – review & editing.

Declaration of competing interest

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