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Verbalizing animal inner speech

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Abstract

This paper investigates narrative sequences where human speakers verbalize non-human animals' imagined thoughts in Finnish. The data contain interviews reporting interspecies encounters in the early-20th-century peasant communities, and conversations from a call-in radio program broadcasted in 2012 where participants describe and explain animal behavior. The study focusses on the grammatical and narrative properties of animal inner speech (AIS). These are analyzed in a cognitive-pragmatic framework concerning reported thoughts, deixis, and intersubjective meaning construal. The results are compared to what we know of language use in Human-Animal interaction. To gain further insight into the role of human language in describing interspecies encounters, the outcome of the analysis is discussed with respect to the biosemiotic notion of perceptual worlds.

Reported AIS was found to co-occur with expressions of animal sensory perception, describing the ways in which animals treat and assess sensory input. In doing so, reported AIS differs from what previous literature has observed concerning reported human thoughts. From a narrative perspective, reported AIS reiterated already provided information and did not contribute to the unfolding of events. AIS was used to share awareness of human experience concerning the plurality of perceptual and semiotic centers in the situation described. As such, it displays certain similarities with language use in situations with co-present animals. The paper sheds light on the linguistic coding of interspecies sharedness in perception and spatial coordination.

Keywords

non-human animals, reported thoughts, fictive interaction, ventriloquizing, deixis, perception, Umwelt

1. Introduction

1.1. Objectives

This paper addresses narrative sequences in Finnish where human language users verbalize non-human animals' imagined thoughts. These are formulated as reported speech and hereafter termed *animal inner speech* (AIS). Example (1), extracted from a radio broadcast concerning wildlife observations, illustrates the type of practice. The speakers E1 and E2 are discussing the distance from which hedgehogs are likely to come to a feeding place.¹

(1) Luontoilta 14.3.2012

¹ In the examples extracted from *Luontoilta* radio broadcasts, the speakers marked with E are participating in the discussion as wildlife experts. Different experts are distinguished with numbers. Speakers identified with C are members of the audience calling in the studio. In dialectal data, presented later on in the paper, R stands for the researcher interviewing the informant, identified with I. The segment including AIS, and other linguistic elements subject to analysis are highlighted in bold letters.

- 1 E1: *tietenki jos se, se on pitkäaikasta ja runsasta ruokintaa niin pikkuhiljaa sinne saattaa*
 'of course if the feeding is continuous and abundant then gradually there may be'
 2 *eksyä sit pikkase kauempaaki joku joku siili [katsomaan*
 'hedgehogs coming from a bit further away to check'
 3 E2: *[nii varmaan ne käyttää samoja reittejä*
 'yeah surely they use the same paths'
 4 *sitte jos, on joku tämmönen siilen, siilin kulkureitti*
 'if, there's a hedgehog, hedgehog trail'
 5 ***ni sitte muutkin siilit huomaa***
 PTCL then other.PL.CLT hedgehog.PL notice.3
 'then the other hedgehogs will also notice'
 6 ***et aha [täst on menty ja helposti lähtee sen-***
 PTCL PTCL here.ELA AUX.3 go.PASS.PTCP.PST and easily go.3SG DEM.GEN
 'like aha ((PASS >)) someone has passed here and easily goes its-'
 7 E3: *[ni ja saattaahan siel olla joku muu ruokkija alueella myöskin*
 'yeah and there may be some other feeder in the same area as well'
 8 *jollonka siin on tämmönen [kytkentä*
 'so there's this kind of a link'
 9 E2: *[aivan*
 'exactly'

E2 confirms E1's description concerning the behavior of hedgehogs living further away and complements it (line 3). E2 then reiterates the already provided information by describing hedgehogs' collective perception and verbalizing their inner speech stemming from sensory input ('notice'): *aha täst on menty* 'aha someone has passed here'.

The analysis is focused on the cognitive-semantic and discursive properties of AIS in short spoken narratives relating events that involve human and non-human participants. The aim is to provide insight into the following questions:

- What linguistic items and constructions are used for conveying animal thoughts? Reported human speech and thought are identified in terms of deictic shift and "syntactic reset" (Vandelanotte, 2023). These grammatical clues are here observed in the context of describing the behavior of a living being who is non-verbal but sentient and capable of bodily coordination.
- How can analyzing reported AIS contribute to our overall understanding of reported thoughts? Reported AIS is compared to what previous research has shown concerning the functions of human speech and thought representation in conversational storytelling (Haakana, 2007), especially in terms of fictive interaction (e. g. Pasqual, 2014).
- What is the position of AIS with regard to ventriloquizing and other practices identified in human language use in interspecies situations? The human speakers reporting AIS show awareness of non-human perception and meaning making. The contexts where AIS occurs are discursively constructed situations of interspecies interaction. By analyzing these against the background of what we know of interaction between co-present human and non-human animals (e. g. Mondémé, 2018; Harjunpää, 2022), we can gain a better understanding of how human speakers make sense of animal behavior in general. This also provides us information on the ways in which actual situations of interaction motivate the *a posteriori* representation of these encounters.

The human language user is hereafter also called *human narrator* or *human speaker*. The non-human participant of the reported situation is referred to as *animal speaker* or *reported animal*, even though there is no reason to think that the animal is described in these sequences as actually speaking aloud.

The animal speaker as such can remain virtual, as the reference can be indefinite (as in 1) or generic (cf. Pasqual & Sandler, 2016:10).

The theoretical and conceptual framework of the paper forms a meeting point for different approaches to the emergence of meaning. This is necessary in view of the aims of the paper which include not only investigating human language forms and their use but also understanding the ways in which interacting with non-human animals shape these. This is actually in line with an early definition of pragmatics by Morris (1938:30), where the study of interpretation is not limited to anthropogenic signs: "Since most, if not, all, signs have as their interpreters living organisms, it is a sufficiently accurate characterization of pragmatics to say that it deals with the biotic aspects of semiosis, that is, with all the psychological, biological, and sociological phenomena which occur in the functioning of signs."

The main framework for analyzing reported AIS stems from a cognitive linguistic view of intersubjectivity and embodiment in meaning construction. Semantic intersubjectivity, i. e. the conceptual construal of perspective-taking, is understood to be deeply rooted in language use in real-time interaction, as explained and illustrated e. g. by Verhagen (2005) and Pasqual (2014). Furthermore, linguistic meaning, as any other type of meaning for that matter, arises from the interactions between an embodied organism and the patterns for meaningful perception and action, called *affordances* (Gibson, 1979), provided by the environment (Johnson, 2018). The focus is thus on the construal of meaning-in-context, which places the present study in the realm of Cognitive Pragmatics (Schmid, 2012; Panther, 2022). The observations concerning AIS are furthermore compared with the results of interactional linguistic research concerning reported human speech and thoughts, the syntax of spoken Finnish, and Human-Animal interaction. The outcome is finally discussed with respect to the biosemiotic notion of *perceptual worlds* (see 1.3). The aim of this is to gain in-depth insight into situations where human language is employed to seek understanding of the embodied behavior of non-human beings.

1.2. Data and methodology

The analysis is based on 51 AIS occurrences. They have been collected from the Finnish Dialect Syntax Archives (SA) (36 occurrences) and a call-in radio program called *Luontoilta* 'Nature night' (15 occurrences). The two datasets were chosen so as to represent talk about animals in spontaneous or semi-spontaneous settings.

The AIS instances were identified as cases of direct reported thought on grammatical grounds, following earlier research concerning the grammar of speech representation (e. g. Vandelanotte, 2023). Observing sentence types and the use of discourse markers allowed to bring to light the syntactic reset that points to direct reported speech or thought. Analyzing the use of demonstrative and temporal expressions made it possible to locate the deictic shift that also sets the reported thoughts apart from the surrounding talk. In addition to this, the lexical semantics of the complement-taking predicate that precedes the segment expressing AIS and the NPs referring to the participants of the interspecies encounter were analyzed. The aim here was to tease out the particularities of the described interspecies interaction, namely the context in which AIS was introduced in the narrative and the degree to which the participants of the encounter were overtly present in the conceptualization.

The SA is a corpus of recorded and transcribed interviews from the 1960s with people born at the end of the 19th or at the beginning of the 20th century. In this study, the dataset was limited to include only

Eastern Finnish dialects, for practical reasons. After this delimitation, the corpus contained 49 interviews. The approximate length of each interview is 1 hour. The interviewed speakers mostly talk about the rural day-to-day life in the past, e.g., how different home and farm chores were conducted. AIS most often occurs in narratives that describe hunting forest wildlife or working with domestic animals.

In *Luontoilta*, radio listeners ask a panel of wildlife experts questions arising from their nature observations. The three shows included in the corpus were broadcasted in 2012. The total length of this part of the corpus is 5 hours 12 minutes. In this data set, reported AIS occurs in narratives describing and explaining animal behavior. While the data retrieved from the SA show that reporting AIS was a resource for speaking about other living creatures in a peasant society, the *Luontoilta* conversations testify that verbalizing animal thoughts remains a means for 21st-century human speakers to make sense of non-human behavior.

The animals whose thoughts are most often reported are dog, brown bear, elk, and capercaillie. Nearly all found AIS patterns include reference to mammals or birds; only one example of fish and insect inner speech was found. This does not necessarily mean that AIS is reserved for speaking about certain kinds of living beings but mainly shows the species most often talked about in this specific dataset.

In most cases, 40 out of 51, AIS is presented as occurring in a situation where the reported animal shares the same space with a human. In 14 of these occurrences, the human is somehow hidden. These mostly come from hunters' stories.

1.3. Theoretical and notional background

Humans speaking for animals was identified in American English family conversation data by Tannen (2004) who called this *ventriloquizing*. She described it as a discursive strategy where talking through co-present pet dogs served as a resource for accomplishing interactional goals among humans, e. g. moderating criticism or complaint or otherwise preventing the outbreak of a potential conflict. In the domestic setting, talking through the voice of a dog was also a means for linguistically representing the human and non-human participants of the situation as a family. Later, Mondémé (2018:XII–XV) observed the same type of practice in domestic interactions in French. She further underlined the role of multimodal phenomena occurring in parallel. The human speakers resorted to ventriloquism when seeking to make sense of a dog's bodily manifestations. The AIS observed in the present study is related to conversational ventriloquism, in the sense that it also translates imagined animal thoughts into human language. The data is however remarkably different, since it does not only involve pets and family setting. Most importantly, the reported animal is not present at the moment when AIS is produced. The human narrators depict retrospectively their everyday encounters with non-domestic and domestic animals. Interestingly, they do this by adopting the perspective of another subject of conceptualization, the non-human animal, and by representing the situation of interspecies interaction through their thoughts. AIS makes manifest the intersubjective meaning construction in human language (Verhagen 2005) going beyond human-to-human setting.

The studied instances of AIS are semiotically speaking cases of *demonstrated* discourse (Spronck & Nikitina, 2019:143–144) The utterances labelled as AIS stand for the thoughts that the human speaker imagines occurring in the reported situation, based on the animal speaker's behavior. They are in this sense *representations* of thoughts (Vandelanotte, 2023). As with reported human speech and thought

(Haakana, 2007:160), representing AIS is irrespective of whether the described situation, let alone the reported thoughts, ever actually took place.

Reporting speech or thoughts sets up a relationship between two events – the one that is demonstrated and the current speech event. Spronck & Nikitina (2019) use the term *perception event* for the event in which the reported speech was perceived. In the case of AIS, this would be the event in which the animal behavior motivating the imagined thoughts was perceived. In the light of the present data, using the term *perception* for this is, however, more complicated since the event perceived by the human participant is also an event of animal perception, as shown in the analysis. This is why I reserve the term *perception* for the reported animal perception.

The link between the two events, i. e. the event of animal speaking to themselves and the event of human narrator reporting this inner speech, is a deictic relationship. I adopt here a cognitive, embodied view of deictic and spatial items (p. ex. Diessel & Coventry, 2020): the human narrator connects their origo, the centre of a coordinate system, grounded by their own body, with the spatio-temporal position of the reported animal.

The animal speaker's origo is imagined because the animal is absent in two different ways. On the one hand, the reported animal is not present in terms of time, therefore the human narrator must lead their interlocutor to a past time setting. On the other hand, even at that past moment the human narrator never heard the reported inner speech nor perceived the described situation through the senses of the animal participant. Bühler (2011 [1934]) calls this type of deixis *imagination-oriented deixis* or *Deixis am Phantasma*. In Bühler's (*ibid.* 141) words: "the narrator leads the hearer into the realm (...) of constructive imagination and treats him to the same deictic words as before so that he may see and hear what can be seen and heard there (and touch, of course, and perhaps even smell and taste things)". Bühler's description of imagination-oriented meaning construction gives us tools for analyzing from a referential point of view a situation where the human narrator adopts the animal speaker's inner voice (see also Diessel & Coventry, 2020). Sensory perception holds a central role in Bühler's account. We will see, at the beginning of the analysis, that describing animal sensory perception is precisely the context in which AIS occurs in the present data. In what follows, I therefore refer to the imagined deictic origo set up in AIS as *perceptual standpoint*.

Reporting AIS belongs to the realm of *fictive interaction*, as it is used "as a frame to structure mental, discursive, and linguistic processes" (Pasqual, 2014:9). Fictive interaction, in turn, is a particular dimension of the fundamental cognitive-linguistic phenomenon of *fictivity* (Pasqual, 2006). Representing events as dialogic processes, and more specifically construing meaning on intersubjective grounds, is an essential way of making sense of the world in humans (cf. Bakhtin, 1981; Verhagen, 2005; Pasqual, 2006, 2014). It is based on a species-specific mode of social cognition that makes it possible to coordinate multiple perspectives on the same situation (e. g. Tomasello, 2019: 64–90).

The entities involved in events that are described through the frame of fictive interaction can be of different kinds, from Speech-act participants to concrete or abstract inanimates. The discursive status of fictive interaction across languages varies remarkably. While in some languages, describing inanimate states or reactions as speech events is conventional (see Spronck & Casartelli, 2021²), in others this is marked, "creative" language use (*ibid.*; Vandelanotte, 2023). Fictive interaction is

² Spronck & Casartelli (2021) accordingly use the term *extended reported speech* to avoid the idea of a metaphor in the concept *fictive*.

observed to have a particular importance in language forms with a limited or nonexistent written use (Pasqual, 2014:83–112; Pasqual & Sandler, 2016:24; see also Laitinen, 1998:99). In Finnish, the grammatical design of reported speech constructions is much less constrained in dialects and other less formal language use than in written standard language, e. g. the reporting verb can be a verb of movement (e. g. Laitinen 2005:89–90; Routarinne 2005:87) (see ex. 3 below).

The present study contributes to our knowledge on how reported thoughts are construed and how they are used. They are observed in a new discourse type, talk about non-human animals. This particular context supports the position according to which reported thought is not to be treated merely as a (sub)type of reported speech but as displaying grammatical properties and discourse functions of its own (Haakana, 2007:151; see also Casartelli et al., to appear). This becomes manifest in data that involve reporting non-verbal participants of interaction, and where reported speech would therefore not be an option, unless resorting to antropomorphic language use. In this sense, AIS is expected to differ from instances of reporting human thoughts, which tend to occur as silent reactions to interlocutor's reported talk (Haakana, 2007). On the other hand, reporting AIS is crucially different from describing inanimate objects' thoughts or speech. Reporting AIS is about representing the imagined thoughts of a living creature whose behavior can be recognized as intentional and meaningful.

Although the data includes human language use, the linguistic phenomenon we are observing exhibit human narrators' awareness of non-human perception and meaning making. This conceptualization of animals as semiotic centers that underlies AIS is best dealt with by viewing the results of the analysis against a biosemiotic background. This can open up perspectives on interspecies coexistence and intertwining human and non-human worlds. I propose to adopt von Uexküll's (2011 [1982]) notion *Umwelt* which refers to species-specific subjective universes where perceptual clues available to the subject are processed into meaning. In humans, these perceptual affordances also generate conceptual meaning construction (Johnson, 2018:626–627). What is perceived and what is meaningful depends on the individual's sensory-motor capacities, needs, and overall spatial existence, as well as the affordances (Gibson 1979), i. e. the potential for perception and action, that the environment accordingly provides. The *Umwelt* of a hedgehog is different from the *Umwelt* of a human. Yet, *Umwelts* need not be considered as isolated and static units. They are shaped by experience and inherently connected to other creatures' subjective worlds, in a network that we can call *semiosphere* (Kull, 1998). In interspecies encounters – just as between conspecifics – participants' behavior and perceptions are synchronized as semiotic-perceptual worlds interconnect (Tønnessen, 2011:79; Magnus, 2014:380). *Semiosphere* is the ground on which intersubjective meaning construal in interspecies interaction rests.

2. Results: Reporting animal thoughts

This section explores the grammatical tools for verbalizing AIS. These are subtle cues for identifying AIS, as they mark the transition from one perceptual standpoint to another. This is manifested in grammar through deictic shift, described in the previous section, accompanied by a syntactic reset, as termed by Vandelanotte (2023). In this discursive repositioning, the reported clause is discharged from any structural constraint that could otherwise concern complement clauses. AIS segments are thus likely to display e. g. features of non-declarative clauses, discourse-markers and other items inclined to convey affect.

These grammatical features speak in favor of analyzing instances of AIS as cases of direct reported speech. One should however note that the limit between direct and indirect speech is not historically and crosslinguistically clear-cut (Spronck & Casartelli, 2021; Vandelanotte, 2023). This is even more so when observing reported speech and thought in spoken interaction (Routarinne, 2005). The different types of speech and thought representation can be arranged on a continuum from direct speech to narrative report of speech acts, following Leech & Short's (2007:276) analysis of presentation of speech in fiction (for Finnish, see Kalliokoski 2005). In this study, deictic shift and syntactic reset were considered as cues for identifying those reported animal thoughts that can be located towards the "direct" end of the continuum. Speakers also use forms of reported animal thought that are marked as indirect. These have not been included in the corpus. Instances of direct reported thought were expected to display more clearly human speakers' construal of AIS, as they allow for the reporting speaker to reduce overt signs of their own presence. Some instances of more indirect methods of representing speech and thought are however brought up during the analysis, as points of comparison for understanding the discourse functions of verbalized AIS.

The overall expectation is that the intersubjective construal of the situation as part of a fictive interaction will be manifest in language use (Pasqual & Sandler, 2016:6). I start by analyzing the immediately preceding context of AIS. I then move on to investigating the discursive and referential properties of AIS segments.

2.1. Describing perception

The data suggest a strong tendency (39 out of 51) for reported AIS to co-occur with expressions of sensory perception. In most cases, the context involves sight (15), or the perceptual mode remains unspecified (e. g. noticing) (13) but hearing and smell are also represented. Perception is expressed by a complement-taking perception verb (see Table 1, presenting the complement-taking predicate types) or in the preceding context in a wider sense. Besides perception verbs, predicates referring to cognition are relatively frequent. On the other hand, there is only one occurrence of communication verbs (*sanoa* 'to say'), which suggests a crucial difference with regard to reporting humans in Finnish (see Kuiri, 1984:167; Laitinen, 1998:101).

Perception	22
Cognition	17
Movement	6
Communication	1
No complement-taking predicate	5
Total	51

Table 1. Lexical semantics of the complement-taking predicate

The observed perception verbs mostly belong to the category of verbs encoding uncontrolled sensory experience (e. g. *huomata* 'to notice' [cf. ex. 1], *nähdä* 'to see', *kuulla* 'to hear') indicating a result (see Viberg, 2015: 99–100). The cognition verbs preceding AIS typically describe the state (*tietää* 'to know') or the change of state (*tajuta* 'to figure out') of knowing. Interestingly, the prototypical verb for expressing cognitive process *ajatella* 'to think' is not used, although based on studies concentrating on reported human thoughts this could be expected (see e. g. Barnes & Moss, 2007:127; Haakana, 2007:160–161; see also Kuiri, 1984:167). The semantic types of complement-taking predicates preceding AIS display an inclination towards expressing an outcome. The animal perceives something, and this affects their mental state. Even in the case of perception verbs, the complement does not

refer to the object perceived but describes what the animal, as a consequence, is assumed to think of the sensory input. For example, the extract presented in (1) (*ni sitte muutkin siilit huomaa et aha täst on menty* ‘then other hedgehogs will also notice like aha someone has passed here’) does not encode the olfactive, visual or other sensory stimulus of the hedgehogs’ perception but what these infer from the sensory input. The limit between perception and cognition is, indeed, a complex question, also from a linguistic viewpoint (see e. g. Enghels, 2007:16–22). It is necessary here, too, to not to limit the notion of perception to the event of receiving sensory stimulation but to extend it to the realm of processing and interpreting sensory input.

The reported clause including AIS is linked to the preceding context with the indexical element *et(tä)*, in almost all cases (48 out of 51), e. g. in (1), *huomaa et* ‘notice ET(TÄ)’.³ Depending on the degree of syntactic tightness between units, *et(tä)* can be analyzed either as a complementizer between the clause describing the animal’s cognitive-perceptual processing and the reported clause, or as an evidential particle which does not connect the reported clause to any specific complement-taking predicate. In the present data, the two functional categories overlap. On the one hand, *et(tä)* is in most cases preceded by a clause that can be regarded as a complement-taking predicate (see Table 1). On the other hand, the reported clause displays grammatical properties of a main clause, in what comes to word order and use of particles. In pragmatic terms, the two uses are very similar, as they serve to distinguish the speaker’s position from the evidential source (Laury & Seppänen, 2008).

2.2. The types of utterances

As for the grammatical features of the reported clauses, these are mostly declarative (37 out of 51). In 13 cases, however, AIS takes the form of a self-addressed question (10 occurrences) or a question addressed to a conspecific, i. e. a member of the same species (3 occurrences). In the following example, the semantics of the preceding verb *ihmetellä* ‘to wonder’ foregrounds the subject referent’s feeling about not identifying the perceived object.

(2) SA, Luumäki

- 1 R: *tulikos niit koskaa usiampaa yhtä aikaa, kuvalle, usiampaa teirtä.*
‘were there ever more than one black grouse coming to the lure at the same time’
- 2 I: *no ei niitä ei ei niitä sattunt just ei se. ne tul’ se se tuota*
‘well no they didn’t it didn’t happen really no. they came it’s it’s’
- 3 *se ku kuvalle lentää ni se se silloh heti täyt- paukahtaa ettei*
‘when s/he comes to the lure then you must shoot right away’
- 4 *ei sitä ei sitä passaas siin antaas sen ihmetellä*
NEG.3 EXPL NEG.3 EXPL can.CONNEG PTCL let.INF 3SG wonder.INF
‘you can’t let him/her think too long’
- 5 *et mikä tuo on.*
PTCL Q DEM be.3SG
‘like what is that.’
- 6 *se se huomaa senk- heti se lähtee*
‘s/he s/he notices right away s/he leaves’
- 7 *se n- se huomaa sen kuvan*
‘s/he s/he notices the lure’

³ In linking the reported speech to prior context, the Finnish *et(tä)* shares some similarities with the English *like* (e. g. Romaine & Lange 1991). For practical reasons, I therefore translate *et(tä)* with *like*, in most examples.

8 *et ei tää olekkaa, ei tää ole tavalline.*
'like oh this is not, this is not as usual'

Using question-formed utterances in reporting AIS, such as 'like what is that' in this example (line 5), may be a strategy for highlighting the transition from one perceptual standpoint to another, in addition to the indexical *et(tää)*. In contrast to what happens in reporting human interaction, these animal questions are never part of question-answer pairings, as there is no verbal interaction going on.⁴ However, they always occur in interspecific or conspecific interactive contexts. In example (2), the question arises in a theoretical situation where the bird is observing a lure and the human is observing the bird from a distance. Other contexts for these animal's self-addressed questions are unexpected human-animal encounters and conspecific conflicts. In this respect, AIS may be formed as a question in order to mark a limit between what is accessible to different parties of the situation and what is not. In this example, the bird does not so far identify the object left on their way by the human hunter. In other contexts, the human reporting AIS is described as not having access to the animal perception. The perception and its implications in the animal mind are evoked but the hypothesis about the animal thought is not taken further. For example, the animal is described as seeking to identify something, but we do not know what the result of this identification is (see also Harjunpää, 2021). Finally, a third form of "not accessing" involves a conspecific conflict where parties fail to understand each other's thoughts.

The data includes only one directive clause encoding AIS (which is also the only occurrence of a communication verb as complement-taking predicate, see above). It describes a fictive command addressed by a dragonfly to another.

Regardless of sentence type, only three of the studied AIS patterns present interactional moves that potentially place the human participant at the position of the addressee. Two of them describe a hunting dog showing the hunter a dead prey or the breathing hole of a seal ('there it is'). The third one is an ambiguous case:

(3) Luontoilta 14.3.2012

- 1 *viimeistään seittemän aikaan niitä [siilejä] pyöri ympäri pihhaa*
at.the.latest seven.GEN around DEM.PL.PART move.around around yard.PART
'around seven, at the latest, they [hedgehogs] started moving around the yard'
- 2 ***että ei-kö sitä ruokaa ala tulla***
PTCL NEG.3SG-Q DET.PART food.PART start.CONNEG come.INF
'like is the food coming or not'

The interrogative utterance could be regarded either as presenting a self-addressed question that gives an expression to the confusion that motivates the animals' behavior ('moving around the yard') or as an indirect request that urges the human feeder to hurry. In any case, in the light of the present data, it is clear that although AIS occurs mostly in narrated situations involving both human and non-human participants, AIS is rarely presented as addressed to a human interlocutor. In Section 2.5, we will see that AIS is also likely not to include overt references to the animal speaker. In other words, in the present data, the fictive interaction represented by reported AIS is not shaped like an imagined human-animal conversation.

⁴ On question-answer pairs in reporting humans, see Spronck & Nikitina (2019:128).

2.3. Particles

We saw that, in AIS, interrogative utterances may give linguistic form to human's conception of the interface between two perceptual standpoints. AIS patterns also contain particles that function in a similar manner. Generally speaking, reported speech and thought constructions are inclined to host discourse markers and expressive prosody (Spronck & Nikitina, 2019:148–149, Vandelanotte, 2023; see also Routarinne, 2005:92). This was the case, e. g. in Barnes & Moss's (2007:129–130) data including reported human thoughts. Particles observed in the present data indicate how the information received through sensory perception is treated by the animal perceiver. In example (1), the response particle *aha* indicates that the information is new and that the perceived event has implications for the reported animal speaker's future actions (Koivisto, 2016:168–174): the hedgehog will follow the same path as the others to find food. *Aha* has a rising pitch on the second syllable (indicated with ↑) which is in line with the function of marking surprise or discovery (Koivisto, 2017a:104).

(1') Luontoilta 14.3.2012

- 1 *ni sitte muutkin siilit huomaa*
PTCL then other.PL.CLT hedgehog.PL notice.3
'then the other hedgehogs will also notice'
- 2 *et a↑ha täst on menty ja helposti lähtee sen-*
PTCL PTCL here.ELA AUX.3 go.PASS.PTCP.PST and easily go.3SG DEM.GEN
'like **aha** ((PASS >)) someone has passed here and easily goes its-''

Example (2') presents another type of particle marking the treatment of the information. The clitic focus particle *-kaa(n)* indicates that the information is dealt with reference to prior expectations (see Vilkuna, 1984). In this context, the information retrieved through sensory perception deviates from what was expected by the bird.

(2') SA, Luumäki

- 1 *se n- se huomaa sen kuvan*
3SG 3SG notice.3SG DET.GEN lure.GEN
's/he s/he notices the lure'
- 2 *et ei tää ole-kaa, ei tää ole tavalline.*
PTCL NEG.3SG DEM be.CONNEG-CLT NEG.3SG DEM be.CONNEG ordinary
'like oh this is not, this is not as usual.'

Other particles observed in the utterances reporting AIS include the response particle *jahaa* (with a rising pitch on the second syllable), which marks the received information as new (Koivisto, 2017b), and the clitic *-hAn*, indicating the status of the information either as already known or as surprising (Laitinen, 2002). All these particles make explicit the transfer from one perceptual standpoint to another. They bring to the fore the imagined animal mind, namely how the animal receives and processes sensory information, and how the animal conceives of the impact this will have on their own actions.

2.4. Deictic elements

The next category of elements concretizing animal speaker's mental and physical presence in the described situation are deictic items. These are demonstrative pronouns such as *tää* 'this' (see example 2, above), demonstrative proadverbs such as *tuol* 'there.ADE' in example (4) (for a presentation of Finnish pro-forms, see e. g. Etelämäki 2009:27–28), or temporal adverbs such as *nyt* 'now' in example (5).

(4) Luontoilta, 15.2.2012

- 1 E: *mutta ylipäätään tommoset alueet minne kerääntyy valtavia määriä*
'but what comes to those areas where huge amounts of'
2 *melkeen m- mitä vaan lintua*
'birds of almost any kind gather'
3 *niin se taas houkuttelee muita lintuja paikalle*
'it will attract other birds to the site'
4 *koska se se tarkoittaa muiden lintujen silmissä*
because DEM DEM mean.3SG other.PL.GEN bird.PL.GEN eye.PL.INE
'because it it looks to their eye'
5 *et tuol on [0:n] turvallista olla että*
PTCL there be.3 O.GEN safe.PART be.INF PTCL
'like it's safe [for 0] to be **there** like'
6 C: *nii*
'yeah'

(5) SA, Mäntyharju

- 1 *minuv veljelläin ol oikei hyvä hevone he ni tuta s(h)e se sano että*
'my brother had a really good horse and so he said'
2 *se on näät vielä niim pyhä että jos sattuu kirroovammaa ni sit se äityy oik(h)ei.*
's/he ((the horse)) is so virtuous that if you happen to curse s/he runs riot.'
3 *mut se ymmärs sen että sillon oli mies, niikun, kiivaspeäl*
but 3SG understand.PST.3SG DEM.GEN COMP then be.PST.3SG man PTCL angry
's/he understood that the man was, like, angry then'
4 *ni se hevonen ymmärs sen,*
PTCL DET horse understand.PST.3SG DEM.GEN
'the horse understood it'
5 *että tota nyt om mies kiivaspeälä*
PTCL PTCL now be.PRS.3SG man angry
'like the man **is** angry **now**'
6 *ni sano se ov vielä näät niim pyhä, he he ettei sellasija sanoja, siitänt.*
'so he ((the brother)) said s/he ((the horse)) is so virtuous, he he that s/he can't tolerate such words.'

Finnish demonstrative system is threefold, marking the distance between the viewpoint holder and the referent, more precisely the referent's location with respect to the viewpoint holder's dynamic sphere of attention (Laury, 1997). The choice between proximal and distal demonstratives depends on the speaker's conceptualization of the speech situation, and not so much on predetermined spatial relations (see also Diessel & Coventry, 2020). Demonstratives are used to construe a perspective and to create a context (see Laury, 1997:58–62). The speaker using demonstrative forms is thus not only the source of perception but also the locus of mental processing. In the studied instances of AIS all three types of demonstratives are at use. The reported animal speakers distinguish their peripersonal and extrapersonal spheres. It means that the animal referents are presented as capable of conceptualizing the spatial surroundings and interacting with entities within it in different manners.

In (4), the animal speaker ('the other birds') uses the demonstrative proadverb *tuol* 'there' to point to a region that is in cognitive and social terms outside their current sphere (Laury, 1997:58–59).⁵ In order to encode "outsideness" of something, the "inside" sphere most also be implicitly present. This is what *tuol* does: it sets up a temporary perceptual standpoint from which the area attracting birds is observed and assessed. This is made manifest in the preceding context through reference to the observing birds' eyes.

In (5), the human narrator first describes the thoughts of the horse with indirect reported discourse (line 3), without displacing the perceptual standpoint, and only then speaks the inner words of the animal speaker (line 5). The temporal markers and the tense are obviously not the same: *sillon* 'then' vs. *nyt* 'now'; past vs. dramatic present (see Laitinen, 1998:100). We observed already in example (1) that AIS did not provide any new information on the event, and it did not contribute to the narrative progression as such. AIS rather elaborates what has already been stated and, through expressions marking the passage from one perceptual standpoint to another, highlights the intersubjective construal of the situation.

2.5. Reference to participants

The studied AIS segments include no explicit reference to the animal speaker themselves. In other words, there are no overt 1st person references in the reported clause. The animal speaker's own actions or experiences are displayed through open-reference forms, such as the zero person (4') and the passive (see Peltola, 2018).

(4') Luontoilta, 15.2.2012

- 1 *koska se se tarkottaa muiden lintujen silmissä*
 because DEM DEM mean.3SG other.PL.GEN bird.PL.GEN eye.PL.INE
 'because it it looks to their eye'
- 2 *et tuol on [0:n] turvallista olla että*
 PTCL there be.3 0.GEN safe.PART be.INF PTCL
 'like it's safe [for 0] to be there like'

⁵ If the speaker was to refer anaphorically to *paikka* 'site' (line 3), then they would most likely use the demonstrative proadverb *siel(lä)* 'there'.

In cognitive semantic terms, the animal speaker remains off-stage and implicit, and the perception is described subjectively (e. g. Langacker, 1985, 2008:77; see also Laitinen, 2006), through the perceptual standpoint of the animal, as imagined by the human narrator.

However, there are items that refer overtly to the human participant in the observed AIS segments: the nouns *mies* 'man' (ex. 5), *vihamies* 'enemy', *apu* 'help', *ihminen* 'human' and the pronouns *kumpi* 'which of the two', *toinen* 'one of the two', *nämä* 'these', *(ei) ketään* 'no one'. In these cases, the human narrator is observing themselves or their conspecifics through the eyes, the ears and the physical position of the non-human animal. In all these cases, the human behavior is somehow dispreferred by the non-human animal. In this example, the horse does not tolerate human cursing. In other contexts, the animal (duck, elk, horse) is trying to avoid encountering a human. Interestingly, these nouns are very different from those found in animal ventriloquizing in family settings where vocatives relating to parenthood, such as *Mommy*, were observed (see Tannen, 2004; Mondémé, 2018:XIII-XV).

4. Discussion: Semiotic and perceptual worlds interconnect

We have seen that when humans report animal thoughts, they place the AIS in the context of sensory perception. The animal is described as seeing, hearing, or smelling something, and then reacting through inner speech to the retrieved information. The different linguistic devices – interrogative form, particles, deictic elements – mark a change in perceptual standpoint and indicate how the animal is assumed to treat the sensory input and act upon it. The human participant of the situation can be the object of animal observation, and the AIS can include overt references to the human as well as animal assessments of human behavior. In the studied data, AIS rarely includes words addressed to human participants or explicit references to animal speakers themselves.

These properties of reported AIS can be regarded as means for human speakers to deal with the characteristics of interspecies encounters, namely the asymmetry in verbal interaction. Bringing to the fore that the animal is coordinating their spatial surroundings and interacting with the environment through sensory perception is a way of presenting detailed observations about the behavior and the possible motives of a being who is not expressing them verbally. Moreover, the fact that the AIS is rarely addressed to the human may also be evocative of the human experience in a situation where the other participant does not use verbal language.

Interestingly, however, the data include human inner speech verbalized as if it was addressed to the non-human animal. In these cases, the human speaker is reporting their own thoughts. These sequences serve different narrative function than reported AIS, as shown below, but they can be used as a point of comparison as they also belong to the realm of fictive interspecies interaction. Example (6) is extracted from a conversation concerning an encounter between the speaker (C) and a Northern crested newt. Before this excerpt, C has set out the course of events: She was going to enter her root cellar when the newt fell down to her feet from above the door. She took the newt in her hand and observed them. She has then described in detail the physical appearance of the animal, and the experts have helped her to identify the species. In this extract, she depicts the end of the encounter.

(6) Luontoilta 13.6.2012

- 1 C: *ni mä laitoin sen sinne samaan paikkaan mistä se tippu*
'so I put them back there where they fell'

- 2 E1: *m[m*
'mm'
- 3 C: *[ja sinne se meni ja se oli aika semmosta sanotaan nyt*
'and there they went and it was kind of let's say'
- 4 *puolenvälin syyskuuta että o[li semmost jo aika kosteetaki*
'mid-september so it was already kind of humid'
- 5 E1: *[joo*
'right'
- 6 C: ***[mä aattelin et me sinne kököttää***
1SG think.PRET.1SG PTCL go.IMP.2SG to.there stay.still
'I thought like go on go there'
- 7 E1: *[joo*
'right'
- 8 C: ***että ku sieltä tulitki***
PTCL PTCL from.there come.2SG.CLT
'since you came from there'
- 9 E2: *[(no se on) ihan oikein*
'(that's) good'
- 10 E1: *[joo no siis niillähän on nehän tota käy (.) ne on itse asiassa maaeläimiä*
'yeah so they have actually they like go they are actually terrestrial animals'
- 11 *vaikka useimmiten ne nähdään vedessä ja se tap- se johtuu [siitä et*
'although they are mostly seen in water and that hap- that's because'
- 12 C: *[nii joo*
'right'
- 13 E1: *niil on keväällä kutuaika ja sillon ne (.) kutee ve[dessä ja*
'their spawning period is in spring and that's when they spawn in water and'
- 14 C: *[ahaa*
'aha'
- 15 E1: *nää toukkavaiheet elää vedessä*
'and the larvae live in water'
- ((36 seconds omitted))
- 16 C: *mut mä näin tän syksyllä*
'but I saw this one in autumn'
- 17 E3: *syksyll[ä*
'in autumn'
- 18 E2: *[mut keväällä se pitäis olla*
'but it should be in spring'
- 19 C: *[oli hyvin hämärää tota syksy ja tota*
'it was very dark autumn and so'
- 20 ***mä aattelin et no mee siit talvehtimaa***
1SG think.PRET.1SG PTCL go.IMP.2SG PTCL from.there overwinter.INF.ILL
'I thought like go on to overwinter'
- 21 ***et meet sit samaan paikkaan***
PTCL go. 2SG PTCL same.ILL place.ILL
'so you'll go to the same place'
- 22 *ku se oli putos siihen kellarin matolle siihen ulkopuolelle sieltä kellarikaton välistä*
'because they were fell there on the cellar carpet there outside from the gap in the cellar roof'

As with reported AIS (see examples 1 and 4), the speaker first states what happened without resorting to reported inner speech (line 1). She then reformulates the same content, now reporting her own

thoughts in the situation. Later, she returns to this same point within the narrated event and again reports her own thoughts at that moment.

On the other hand, the narrative function of reported human thoughts is different from that of reported AIS, which in this paper were observed to describe how the animal treats sensory input and reacts to it. Reported human thoughts are also silent reactions, but they serve to evaluate narrated events (Haakana, 2007). This can also be observed in the example above, where the human speaker is assessing her own actions during the interspecies encounter. As shown on lines 20–21, C reports her own thoughts a second time following E2’s and E3’s turns that could call into question the information C has provided concerning the season of observation. C supports her claim (‘the season of observation was autumn’) by describing herself at the moment of the encounter as thinking about the place where the newt was going to spend the winter. The expression *mä aattelin et* ‘I thought’, which precedes both sequences of reported inner speech (lines 6 and 20), is used, not only for relating past thoughts, but also for conveying evaluative or affective stance (Laury, Helasvuo & Rauma, 2020). The descriptive verb *kököttää* ‘stay still’ is highly affective, as such (see NS). Moreover, the degree of affectivity is reinforced by the fact that the speaker’s reported thoughts are formulated as addressed to the specific newt, whereas the rest of the talk describes the animal in the third person singular or plural, often through generic references (lines 10–15). This creates a contrast between the intersubjective construal of the inner speech, apt to convey affect, and the objective tone of its surroundings.

Two of the utterances presenting C’s thoughts are formulated as directives (lines 6 and 20). The other two utterances are in the indicative mood (lines 8 and 21). They serve to account for the directive content, as the speaker explains why it is in the interest of the animal interlocutor to act accordingly. Considering the fact that the animal has been described as falling accidentally from the cellar roof and that the human participant has reportedly caught the newt in her hand, brought them into bright light and handled them so as to identify the species, it is likely that the two imperative utterances encode a permission. In other words, the speaker describes her own alignment with what she assumes the newt would want to do. The two imperative constructions reiterate the same partly schematic syntactic pattern (see Jääskeläinen 2021):

go.IMP.2SG	+	place.LOC/ELA ‘Where to? From where?’	+	verbe.ILL ‘To do what?’
<i>me</i> ‘go’		<i>sinne</i> ‘(to) there’		<i>kököttää</i> ‘to stay still (15escry.)’
<i>mee</i> ‘go’		<i>siit</i> ‘from there’		<i>talvehtimaa</i> ‘to overwinter’

Table 2. The syntactic pattern of directives addressed to a newt

Jääskeläinen (2021) investigated the use of Finnish interjections that are specifically used for addressing domestic animals (e.g. *tse* for calling a dog). Analyzing her data with the tools provided by Construction Grammar, she identified a variety of patterns in which the functionally different interjections occur and which through their situational specialization make manifest the different everyday actions in which humans and animals have engaged together, especially in peasant communities (feeding, working, moving from one place to another etc.).

In these directives addressed to a newt, there are no interjections, and the interspecies situation is not routine in the same manner as those involved in the constructions that Jääskeläinen has studied. Yet, the repetition of the syntactic pattern and the use of the imperative (see Mitchell, 2001) in these

utterances may manifest the human speaker's aspiration to reach a semiotic level that can be shared with the non-human participant, in a way comparable to what has been observed in data with humans speaking to co-present animals (Mondémé, 2018; Jääskeläinen, 2021; Harjunpää, 2022), or at least to perform a conventional way of speaking to non-human animals. Since these imperative utterances are most of all part of a narrative addressed to human interlocutors, the specific way of fictively addressing an animal is also to be understood as a rhetorical device serving to distinguish the intersubjective dimension of the reported situation from the objective description. This intertwining of two ways of construing the interspecies encounter is characteristic of narratives of nature observation (see Peltola, 2018, 2021).

In the studied AIS sequences, on the contrary, there are no signs of adjusting to what is assumed to be the semiotic level accessible to the animal, phenomenon named "morphism" by Mondémé (2018). Unlike utterances addressed to a co-present animal, those reporting the fictive thoughts of non-present non-human creature do not display e. g. imitation of animal's vocalizations or other semiotic or structural modifications or simplifications. This may indicate that representing imagined animal thoughts does not necessitate as much distancing from human speakers as hypothesizing about animal's communicative practices.

However, AIS sequences display certain other similarities with language use in situations where the animal is co-present. First of all, we can note the presence of interrogative sentences. According to Harjunpää (2021), by addressing questions to animals, humans recognize that the non-human participant is perceiving something but that, at the same time, this perception is not accessible to the human speaker. In AIS, questions fulfill a comparable function. They mark the distinction between coexistent perceptual standpoints and the fact that the participants of the reported situation do not have the same access to information received through sensory input.

Moreover, the fact that AIS is reported in the studied narratives in connection with animal sensory perception is in line with observations on ventriloquism in the presence of animals. Mondémé (2018) notes that fictive reported speech occurs in interspecies situations in the context of bodily manifestations (moving or turning head towards the human speaker, tail wagging etc.) and results from human attempts to make sense of these animal actions. In the studied narratives, AIS and the descriptions of animal perception co-occur with expressions of movement (e. g. in example 2, *tulla* 'to come', *lentää* 'to fly', *lähteä* 'to leave'; in example 3, *pyöriä ympäri pihaa* 'to run around the yard') or marked behavior (e. g. in example 5, *äityä* 'to run riot'). The verbalizations of animal thought construe the situation from the animal's perceptual standpoint so as to make the motivation behind the observed movement or behavior understandable.

Just like the ventriloquism studied in conversational data by Tannen (2004), the instances of AIS found in narrative data are part of human-to-human language use. They contribute to the unfolding of narrated events, as they temporarily move the deictic origo from the actual speech situation and the immediate perceptual standpoint of its participants to an imagined setting where the reported course of events is ongoing and put into words by a non-human observer. This layering of narrative voices (cf. Stukenbrock, 2014) and, accordingly, of viewpoints on the narrated situation (Haakana, 2007:176) is most concretely displayed in narratives where an observation or an event is first reported indirectly, as part of the past-tense narrative, and then reiterated in the present tense, in the form of verbalized animal thoughts. Substantiating the ongoing here-and-now speech act may be a more general discourse function of reported thoughts (see Park 2018). As a narrative strategy, AIS aims to engage

the interlocutors in the reported events by displacing them fictively to the spatio-temporal setting of the narrative and the perceptual standpoint of the animal whose thoughts are verbalized.

However, the role of verbalized AIS is twofold. Besides its rhetorical, narrative function, reported AIS serves to share awareness of the human experience concerning the plurality of perceptual and semiotic centers in the situation described. This appears in a particularly concrete manner in those patterns where the reported utterance takes an interrogative form, as already noted. The awareness of not understanding and not accessing is an important part of interspecies interaction.

The deictic elements present in the utterances expressing AIS attest to human narrators' aspiration to connect the origo of their own subjective orientation with the center of another imagined coordinate system. This creates a layering effect (Stukenbrock, 2014): the voice and the spatial coordinates of the human narrator interact with the deictic center of the other creature. Sensory perception holds a remarkably important position in Bühler's (2011 [1934]:141) description of imagination-oriented deixis (see 1.3 above). In biosemiotic terms, the deictic center maps onto the perceptual and semiotic center of another, hypothetical *Umwelt*.

By using deictic items in the reported inner speech, the human narrator guides the interlocutors in the animal's imagined spheres of attention. With the particles that mark the way in which the animal receives the information retrieved through sensory perception, the human narrator construes an imagined animal mind that processes and interprets perceptual input. The fact that there are no overt references to the animal speaker themselves speaks of subjective construal of the animal's position. In other words, the AIS patterns exhibit sensitivity to situations where the human is not the only center of activity and meaning-making. They attest that human language users experience a certain degree of interspecies sharedness in perception and spatial coordination.

4. Conclusion

By investigating reported AIS in spoken narratives, this paper contributed to our cognitive-pragmatic knowledge of how non-human animal thoughts are construed in human language use. It showed that AIS sequences occur in specific narrative contexts and that they display certain regularities in their form. They are used when human speakers describe within the frame of fictive interaction how animal referent is assumed to make sense of their environment on the basis of their sensory perceptions. They make understandable the observed behavior of a non-verbal being. In this respect, they differ from reported human thoughts that are known to be used for evaluating narrated events. This explains why the prototypical verb used for reporting human thoughts in Finnish, namely *a(j)atella* 'to think', was not observed in reported AIS. *A(j)atella* is a conventionalized marker for evaluative stance and affect in conversation.

Deictic elements present in utterances expressing AIS show that the spatial setting is construed from the perceptual origo of the animal. Interrogative utterances and particles are used to draw a limit between two perceptual standpoints and to mark the status of the information received through sensory input as non-accessible, new or already known. The studied AIS occurrences contain no direct references to the animal speaker. The perceptions and the experiences of the animal are subjectively construed. Moreover, they rarely involve interactional moves putting the human at the position of the

addressee. I proposed this to be a linguistic trace of the experienced asymmetry in verbal communication.

The studied occurrences of AIS are part of human-to-human verbal interaction and, as such, carry a rhetorical function in the unfolding of the narrated events. However, I proposed that another, coexistent functional dimension can be identified. By mapping Bühler's model of *Deixis am Phantasma* on the biosemiotic theory of species-specific but interacting semiotic and perceptual worlds, *Umwelten*, I showed that the AIS sequences construe centers of meaning-making that go beyond human. The human narrator and interlocutors seek to observe and perceive the situation from the animal's perceptual standpoint for different reasons: for hunting, for cooperating, or for understanding the reasons behind observed animal behavior. The non-human animals are presented as engaged in embodied sign processes. They are semiotically speaking *selves* (see Kohn, 2013: 91–92): they are beings to whom entities and events in the world matter. In this sense, the human meaning construction, as observed in reported AIS, acknowledges its roots in the more-than-human network of semiotic processes. Interspecies pragmatics calls for extending the scope of meaning-in-context to the biotic dimension of semiosis.

This paper further contributes to our understanding of the complex mappings between human language forms and sensory experiences, as it raises the question of interspecies sharedness in perception and spatial coordination and the linguistic coding of this sharedness.

Data

Luontoilta. Radio program. Broadcasts used: 15.2.2012, 14.3.2012, 13.6.2012.

SA = Syntaxe Archives. Research Institute for the Languages of Finland and School of Languages and Translation Studies, University of Turku. <http://syntaxarchives.suo.utu.fi>.

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