

Perspectival possessor agreement in Finnish spatial PPs*

Elsi Kaiser & Sandhya Sundaresan

University of Southern California, Stony Brook University

1. Introduction

Perspectival anaphors denote a class of nominal anaphor whose empirical behavior is determined by their sensitivity to the mental or spatial perspective of some salient individual (Sundaresan 2021). The antecedent of the anaphor, and thus by transitivity the anaphor itself, must denote this individual. Relatively recent work on this phenomenon (see e.g. Nishigauchi 2014, Sundaresan 2018 & Charnavel 2019) has argued that the perspective denoted by such an anaphor must be syntactically represented. Sundaresan 2018, 2021 argues, for instance, that the anaphor is bound by a c-commanding perspectival pronoun which itself is introduced in the specifier of a perspective-encoding head.

A fundamental challenge to this line of analysis is the paucity of overt evidence for either the perspectival head or the perspectival pronoun (though see Spadine 2019 for compelling evidence to this end from Tigrinya). All else being equal, this is an unexpected outcome if we assume that syntax may feed morphology (cf. Chomsky 2001, et seq.).

In this paper, we argue that while this pattern may be tendential, it is not universal. Our argument rests on the experimentally corroborated novel observation that possessor agreement in spatial PPs in Standard Finnish expones the perspectival head. These results show not only that perspective-holding must indeed be syntactically realized but also serve to support the syntactic model of perspectival anaphora described above. These results further imply that the tendential crosslinguistic silence of the perspectival pronoun and head has nothing to do with these elements not being syntactically encoded in the first place and must, thus, be for independent reasons.

2. Background: Possession in Finnish

In Standard Finnish, possession is represented by a possessive pronoun in genitive case (POSSR) which co-occurs with a possessive suffix (PX) that indexes the person and

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number of the POSSR (1).^{1,2} The overtness of the POSSR is conditioned by its person. In the first and second person, POSSR is optionally overt and may be pro-dropped, but in the third person, its overtness is conditioned by the presence of a local c-commanding subject (see e.g. Hakulinen & Karlsson 1988, Vilkkumäki 1996, Nelson 1998, see also Paunonen 1995). In the presence of a local c-commanding subject which is interpreted as the possessor, third-person POSSR is obligatorily silent (e.g. Vilkkumäki 1996, Nelson 1998).

- (1) (Minun) uusi kirja-ni / hänen uusi kirja-nsa
 (My) new.NOM book.NOM-PX.1SG / {his/her} new.NOM book.NOM-PX.3SG
 ‘my new book’ / ‘his/her new book’

When a third-person POSSR is overt, the local subject is not interpreted as the possessor (Nelson 1998, see also Kaiser 2003). The null vs. overt distinction is orthogonal to the claims we make in this paper, and thus we will not discuss it further. We mention it here only to showcase, first, that the (c)overtness of the POSSR is itself indicative of restrictions on its referent and, second, that the PX can serve as a window into the properties of the POSSR (and, by transitivity, its referent) in cases where the POSSR is silent.

2.1 Spatial PPs

We test PPs with spatial prepositions like *takana* ‘behind’ and *edessä* ‘in front’, shown in (2a-b) in predicative position. The PX is suffixed on the preposition following the POSSR.

- (2) a. Puu on (sinun) takana-si.
 tree.NOM is (your) behind-PX.2SG
 ‘(The) tree is behind you.’
 b. Puu on hänen takana-an.
 tree.NOM is his/her behind-PX.3SG
 ‘(The) tree is behind him/her.’

These PPs can also occur prenominal, as in (3)-(4) in participial constructions (*lauseenvastikkeet*, e.g. Kiparsky 2018 on ‘direct participles’, see Nelson 2012 on what she calls -VA structures). Here, we test these kinds of prenominal structures in particular.³

- (3) (Sinun_i) takana-si_i oleva puu
 You.GEN behind-PX.2SG be.PTC.NOM tree.NOM
 ‘behind of you being tree’ ~ tree behind you

¹ While some dialects have possessives without PXs (e.g. Paunonen 1995, Kaiser 2018c), we look at standard Finnish, where possessives contain PXs, and null or overt POSSR. 3SG.PX is realized as [-nsA] or [-An].

² Abbreviations: NOM nominative, GEN genitive, ILL illative, ELA elative, PTC participial structure, SG singular.

³ Independent of anaphors and spatial prepositions, the syntactic properties of Finnish infinitival and participial structures are not yet fully understood, and remain an important question for future work. We used what Kiparsky calls ‘direct participles’ and Nelson called -VA participles (see (i) for an example without a spatial preposition). We acknowledge the need for more work on the syntactic details of these structures.

- (i) tule-va ja mene-vä hallitus
 come-PTC.NOM and go-PTC.NOM government.NOM
 ‘the incoming and the departing government’ (from Kiparsky 2018)

- (4) (hänen_i) takana-an_i oleva puu
 {his/her} behind-PX.3SG be.PTC.NOM tree.NOM
 ‘behind of him/her being tree’ ~ tree behind him/her

2.2 Spatial perspective of the POSSR & why Finnish is special

Spatial prepositions have been observed to be ambiguous w.r.t. whose spatial perspective they describe (Kuno 1987, Sells 1987, Rooryck & Vanden Wyngaerd 2011, Sundaresan & Pearson 2014, among others.). Consider now a scenario where Ali and I (the speaker) are facing one another. Ali’s left is thus my right and Ali’s right is my left. If I were now to utter the English sentence in (5), which involves a spatial PP *to his left* with the overt POSSR *his* referring to Ali, whose perspective does *left* encode?

- (5) Ali_i placed the laptop to his_i left.

In English, the choice seems to be ambiguous. Example (5) may be licitly uttered in a scenario where Ali’s laptop is to Ali’s left as well as in one where it is to my left. In other languages, e.g. Dutch (Rooryck & Vanden Wyngaerd 2011), Norwegian (Lødrup 2007) and Tamil (Sundaresan 2012, Sundaresan & Pearson 2014), the use of an anaphoric vs. pronominal possessor conditions this choice; the anaphor necessarily picks out the spatial perspective of the anaphor’s antecedent (e.g. *Ali* in (5)) and the pronoun is underspecified.⁴

A distinguishing property of the Finnish POSSR constructions under consideration here is the presence of the PX indexing the phi-features of the possessor. This allows us to ask not only whether the choice of spatial perspective conditions the choice of POSSR, but also whether it conditions the choice of the corresponding PX, in Finnish. This, in turn, can shed light into the grammatical representation of spatial perspective in Finnish and beyond.

3. Experiment

We asked 12 adult native Finnish speakers to rate how well sentences like (6) match different perspectival configurations. We tested four configurations: images that match (i) only the possessor’s perspective, (ii) only the speaker’s perspective, (iii) both the possessor’s and the speaker’s perspective, (iv) neither perspective (see Section 3.1).

- (6) Jussi pitää takana-an olevasta huonekasvista.
 Jussi.NOM likes behind-PX.3SG being.PTC.ELA houseplant.ELA
 ‘Jussi likes the houseplant behind him.’

3.1 Design and procedure

Each trial consisted of an image, a sentence and a rating scale, as in Fig.1. It was explained

⁴ A question that arises is what happens when the anaphoric antecedent is, in fact, also the speaker. As we elaborate later, the use of a dedicated perspectival anaphoric form in a language is reserved for an anaphor that is typically 3rd person. Such anaphors have been observed to describe an *obviated* perspective, with the obviation being evaluated relative to the utterance context speaker. In other words, such anaphors encode perspective *shift*, away from the default perspective (the speaker’s). See Sundaresan 2021 for details.

at the start that one of the characters in each image – namely the one with the speech bubble – is the speaker, and that the sentence below the image indicates what the speaker says.

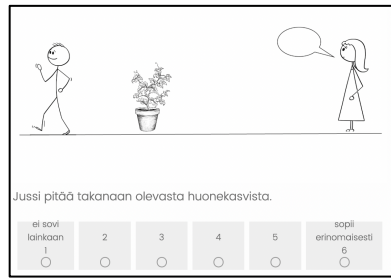


Figure 1. Sample screenshot

The main study was preceded by three example items, which made clear that the speaker was talking about the depicted situation. Each image included one male and one female character, and thus it was always clear who the name in the sentence refers to (e.g. who is Jussi in Figure 1a). Names were not repeated; each item used a different name.

We tested four spatial configurations (four conditions). The study contained eight target sentences (similar to (6)). For each target, four images were created (Fig.2). We used a Latin Square design so that each participant saw all eight targets (two per condition), but only saw each target once, to avoid repetition. This small-scale study contained eight targets and twelve fillers, for a total of twenty trials. Targets used *takana* ‘behind’ and *edessä* ‘in front’, as well as a variety of verbs. In future work, it will be helpful to verify whether the results replicate with a larger set of items and participants.

Figures 2a-b provide examples of the two critical configurations: (i) images that match only the possessor’s perspective and (ii) images that match only the speaker’s perspective. When paired with a sentence like (6), Figure 2a only matches the possessor’s perspective: The houseplant is behind Jussi from his perspective. However, from the perspective of the speaker, the plant is between her and Jussi, thus (ignoring Jussi’s orientation), in front of Jussi from the speaker’s perspective, not behind Jussi. In contrast, when paired with (6), Figure 2b only matches the speaker’s perspective: The houseplant is behind Jussi from the speaker’s perspective, but in front of Jussi from his own perspective.

We also included two control conditions. In the ‘both’ perspective condition, exemplified in Figure 2c, the image matches both the speaker’s and Jussi’s perspectives for a sentence like (6). The houseplant is behind Jussi from Jussi’s perspective and it is also behind Jussi from the speaker’s perspective. In the ‘neither’ perspective condition, shown in Figure 2d, the houseplant is not behind Jussi from Jussi’s own perspective and it is also not behind Jussi from the speaker’s perspective. Thus, this final condition acts as an attention check: If participants are attending to the task and paying attention, they should consistently give low match ratings in the ‘neither’ condition.

4. Results

Participants’ mean match ratings are in Figure 3. Recall that the lowest possible rating is 1, indicating that the sentence does not match the scene at all. The highest possible rating is 6, indicating that the sentence matches the scene very well. As Fig.3 shows, images depicting the *possessor’s perspective* are rated very highly, receiving an average rating of 5.17 out of 6, while images depicting the *speaker’s perspective* are rated much lower, and

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receive an average rating of only 1.42 out of 6. Participants rate the possessor's perspective as a significantly better match than the speaker's perspective ($t = 12.3$, $p < .001$).

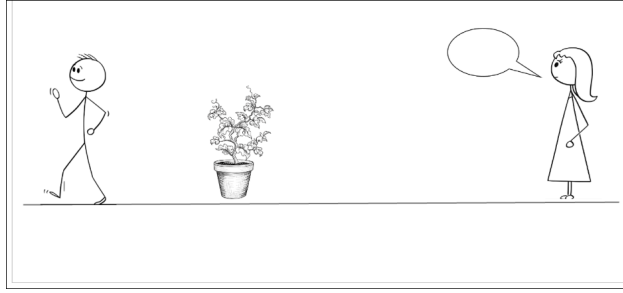


Figure 2a (above). Image depicting POSSR perspective for (6)

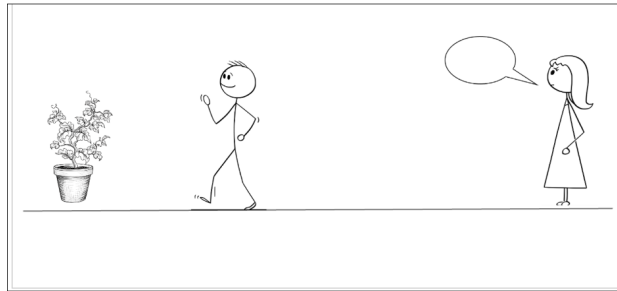


Figure 2b (above). Image depicting the speaker perspective for (6)

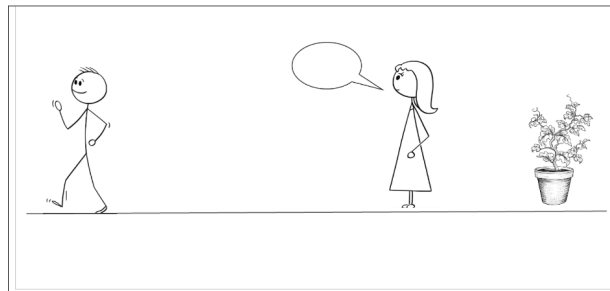


Figure 2c (above). Image matching both the speaker's and Jussi's perspectives for (6)

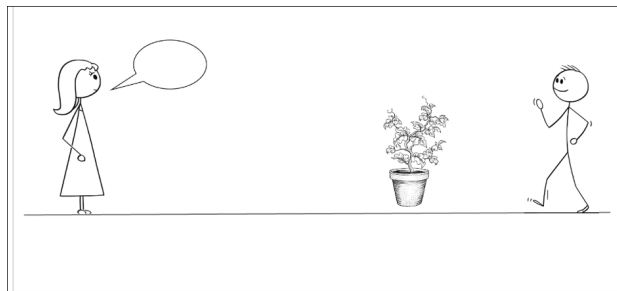


Figure 2d (above). Image that doesn't match either perspective for (6)

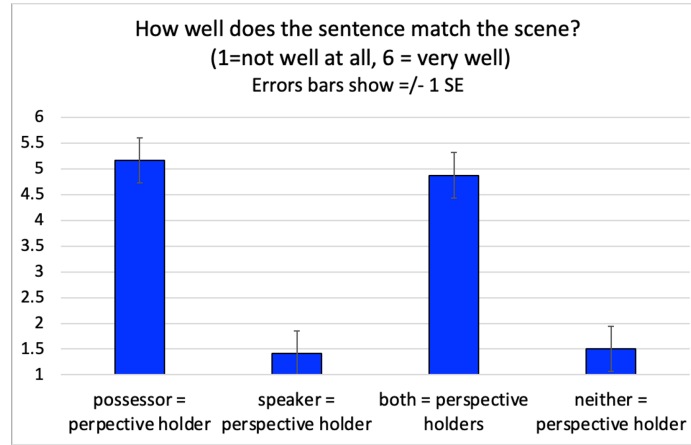


Figure 3. The average match rates for the four conditions

The ‘neither’ condition, where the image does not match the speaker’s or the possessor’s perspective, is rated very low, as expected. This confirms that participants are paying attention to the task. It is worth noting that the condition where the image depicts the speaker’s perspective only is rated as low as the ‘neither’ condition ($t = 0.51$, $p > 0.6$). This provides clear evidence that the spatial PP in sentences like (6) cannot be construed as conveying the speaker’s perspective.

In sum, although the sample size for this preliminary study is small and further work is needed, the results nevertheless point to a clear difference between the conditions, indicating that the spatial PP must track the perspective of the POSSR.

4.1 Ruling out two potential confounds

In the experiment, we opted to test non-contact verbs such as *pitää* ‘to like’ and *ajattelee* ‘to think.’ A reviewer wonders whether these predicates, being themselves (mentally) perspectival, might be influencing the choice of spatial perspective-holder in the target sentences under investigation. While we acknowledge this potential concern, it was nevertheless a conscious design choice that we made given the nature of the experiment.

In particular, to ensure participants’ ratings provide meaningful judgments about a particular sentence, it is important for the four spatial configurations to be in principle plausible. We were concerned that, with many motion-based or contact-based verbs (e.g. *törmätä* ‘to crash’), real-world plausibility may rule out some otherwise acceptable readings. For example, with an image attempting to depict both perspectives (e.g. Fig.2c), a sentence involving ‘crash’ (e.g. *Jussi crashed into the plant behind him*) the reading involving Jussi’s perspective is implausible, given that the speaker is in between him and the plant. Thus, we opted to avoid such verbs.

Crucially, native speaker judgments suggest that the same patterns obtain with non-intensional and non-psych verbs such as *törmätä* ‘to crash’ (7):

- (7) Jussi törmäsi *pro*_i takana-an_{i,*j} olevaan huonekasviin.
 Jussi.NOM crashed *pro* behind-PX.3SG being.ILL houseplant.ILL
 ‘Jussi crashed into the houseplant behind him.’

We take this to show that the presence of a perspective denoting experiencer or attitude-

holder is not influencing the choice of spatial perspective-holder in our sentences. Thus, although further data collection is needed, responses from native speakers suggest the spatial PP tracks the spatial perspective of the POSSR.

Finally, as noted earlier, the overtness or silence of the POSSR in our target sentences was found to be orthogonal to the perspective that such sentences encode. We have noted above that whether a third person POSSR is null or overt depends on whether it has a local c-commanding antecedent. Native speaker intuitions suggest that a sentence like (8), where the possessor is overt due to the antecedent not being in a c-commanding position, is still subject to the perspectival requirement that it reflect the spatial perspective of the POSSR.

- (8) Aion lahjoittaa Jussille hänen takana-an olevan huonekasvin.
Will.SG1 gift Jussi.ALL his behind-PX.3SG be-PTC.ACC houseplant.ACC
'I will donate to Jussi the houseplant behind him.'

5. Proposal

In Section 2.1, we noted that languages vary in their perspective-encoding strategies. For the case of spatial perspective, depicted in spatial PPs, DPs or participles like the ones under investigation, we saw that some languages allow the possessor to alternate between a pronoun or anaphor, which in turn restricts the choice of perspective-holder in different ways. The use of a dedicated perspectival anaphor, in particular, ensures that the spatial perspective described is that of the antecedent of this anaphor. Perspectival anaphors crosslinguistically also tend to be overwhelmingly 3rd person – i.e. typically take exclusively 1st or 2nd person antecedents – thus, this restriction typically also entails that the depicted spatial perspective of the utterance is not that of the (utterance-)speaker.⁵

We have seen that the use of the (3rd person) Finnish POSSR in a spatial predication ensures that the spatial perspective described by this predication is that of the antecedent of the POSSR, and not that of the speaker. The results of our experiment for Finnish are thus descriptively entirely consistent with an analysis of the POSSR as being a perspectival anaphor of this kind. Further support for this conclusion comes from the observation in Kaiser 2018a, 2018b (and references cited therein) that the POSSR *hän* 's/he' may be used logophorically in Free Indirect Discourse (FID).

Being an anaphor, POSSR must itself be locally bound by a c-commanding nominal. Following the arguments in Sundaresan 2018 & Charnavel 2019, we propose that it is bound by a silent perspectival pronoun (or *pro*) which is merged in the specifier of a perspectival head, call it *Persp*. This *pro* must refer to a salient perspective-holder with respect to the spatial predication in question – here, the spatial PP.⁶

Where does the PX fit in, in this model? We take the fact that the PX in Finnish indexes the person and number of the POSSR to mean that the PX is a phi-probe that Agrees with the POSSR for these features. While this is compatible with PX being an agreement-marker

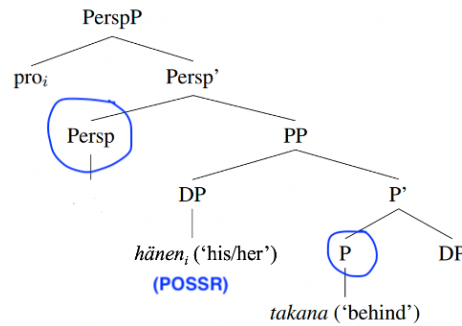
⁵ While some perspectival anaphors are person insensitive, i.e. take 1st, 2nd and 3rd person antecedents – *ziji* in Chinese is a notable example – no perspectival anaphor in language seems to allow 1st and/or 2nd person antecedence, but not 3rd (see Sundaresan 2021 and the references cited therein).

⁶ Per Sundaresan 2012, this requirement is implemented by a presuppositional restriction which is baked into the lexical entry of this pronoun. In all other respects, a perspectival pronoun is just like any other pronoun – it bears phi-features and denotes a salient individual who is represented in the sentence or in the salient discourse. See Sundaresan 2012 for further detail and discussion.

(cf. Anderson 2005:235-239), a (phi-probing) anaphor (e.g. Trosterud 1993) or a hybrid of both (Toivonen 2000), we will assume here that PX is an agreement marker.

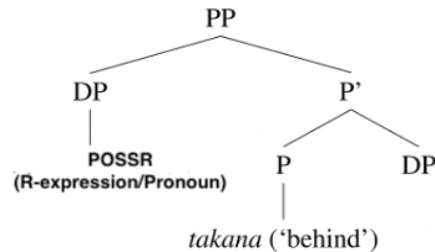
Given the structural requirements of Agree, the PX must occupy a head that stands in a local c-commanding relation to the POSSR. The null hypothesis is that the probe can c-command the goal (downward Agree, e.g. Preminger 2013) or that the goal can c-command the probe (upward Agree, e.g. Zeijlstra 2012): i.e., that the directionality of probing doesn't matter (for arguments that probing can happen in either direction, but is conditioned by independent factors, see Baker 2008, Bjorkman & Zeijlstra 2019). This being the case, PX can instantiate a head that locally c-commands POSSR, or one that is locally c-commanded by it. The simplest candidate for the former option, one that doesn't require the postulation of additional heads, is that the PX encodes the perspectival head, Persp. The simplest candidate for the latter is the preposition which follows the POSSR, as shown below:

(9)



While it is tempting to propose that PX encodes a phi-probe on the spatial P given its surface position as a prepositional suffix, independent evidence argues against this choice. In structures where the anaphoric POSSR is replaced by a pronoun or R-expression, the perspectival *pro* in Spec, Persp should be unable to bind it (Binding Conditions B and C, respectively, Chomsky 1981). Similarly, since perspective-holding requires animacy (Charnavel, 2019, Sundaresan & Pearson 2014), an inanimate POSSR should be incompatible with a perspectival pronominal binder. In these cases, it makes sense to assume that the Persp & perspectival *pro* are simply not projected, as shown below:

(10)



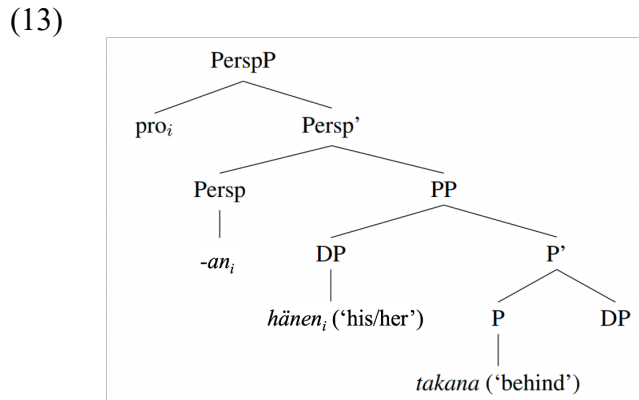
Note that we don't expect such structures to be associated with a lack of perspective altogether. Rather, we predict that, in such cases, the choice of perspective-holder is left unspecified or vague – a prediction that is empirically confirmed.⁷

⁷ Native speakers of Finnish construe (i), which lacks both a POSSR and a PX, as being especially vague:

Now, if the PX is a phi-probe on P, it should in principle be compatible with both structures – the one with the PerspP (9) and the one without (10). However, if PX is the instantiation of Persp, it should be incompatible with the truncated structure in (10). The empirical results are very clear. In spatial constructions where the POSSR is an inanimate pronoun or an R-expression the PX is necessarily absent, as shown below:

- (11) Minä törmäsin lapsen_j / sen takana-(*an_j) olevaan puuhun.
 I.NOM crashed child.GEN/ it.GEN behind-PX.3SG being.ILL tree.ILL
 Intended: ‘I crashed into the tree behind it/the child.’
- (12) Auto_i törmäsi *pro*_i takana-(*an_j) olevaan puuhun.
 Car.NOM crashed *pro* behind-PX.3SG being.ILL tree.ILL
 Intended: ‘The car crashed into the tree behind it.’

Taken together, this means that (6) has the structure in (13). Additional operations – e.g. head-movement – must obtain so that the PX surfaces as a prepositional suffix:



Furthermore, we assume that when POSSR is third person, the clausal subject typically denotes the most salient perspective-holder available for it. As a consequence, the speaker, though also salient, is dispreferred, because it is first person. This explains, first, the subject-POSSR coreference in (6), and second, why spatial perspective must track POSSR, not the speaker. Taken together, these patterns present strong support for the syntacticization of perspective, as proposed in Sundaresan 2012, 2018, 2021, Charnavel 2019, and others.

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 behind be.PTC.NOM houseplant.NOM
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