

Possession and syntactic categories: An argument from Äiwoo

Giovanni Roversi¹

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Abstract

This paper argues that possession is syntactically category-flexible. While it is clear that in many languages possession is mostly grounded in and operates in the nominal extended projection (Szabolcsi 1983; Kayne 1993), I show that this cannot be universal. The empirical part of this article is a case study of Äiwoo, which I argue has an inherently verbal counterpart of English 's, an abstract transitive verb I label POSS. This verb can be used by itself to form clausal possession: 'I POSS this boat' \approx 'this boat is mine.' Possessed DPs also contain the verb POSS: the object of this verb is extracted, forming a relative clause. Informally, 'my boat' really is 'the boat_i [that I POSS _____]' \approx 'the boat that is mine.' Given this, Äiwoo simply lacks true nominal possessives. The theoretical consequence is that possession can be mapped onto different syntactic categories in different languages. This is a welcome result, as it makes the syntax-semantics mapping as flexible as it needs to be: if possession is just a tool to assert that a certain relation holds between two entities, nothing in our theory of grammar predicts that such a notion should only be limited to a specific syntactic category.

Keywords Possession \cdot HAVE \cdot Syntactic categories \cdot Austronesian \cdot Oceanic \cdot Voice \cdot Object agreement

1 Introduction

1.1 Possession and syntactic categories

This paper is about how possession is mapped onto syntactic categories crosslinguistically. In general, "possession" is essentially a way to assert that some kind of asymmetric relation holds between two entities. In English and many other languages,

G. Roversi groversi@mit.edu

¹ Department of Linguistics and Philosophy, Massachusetts Institute of Technology, Cambridge, MA, USA

the main syntactic tool at one's disposal to express possession—if not the only one, depending on one's analysis of *of*, *have*, and so on—is a functional head that is part of the nominal extended projection (a D head in the classic analysis; Abney 1987; Chomsky 1995):¹

(1) Possession as part of the nominal extended projection



A rather obvious thought at this point is that a D head is not the only syntactic tool human languages have to put two nominal constituents in some asymmetric relation with each other. A clear alternative would be something like a transitive verb (2). One could conceive of a verb, which I abstractly call "POSS" here, that would take the possessor as its external argument and the possessum as its internal argument, but that would otherwise have the exact same semantics—whatever that may be—as the nominal head in (1): $[POSS] = [is]^2$.

(2) Possession as part of the verbal extended projection



One can then ask the (empirical) question of how possession is mapped onto syntactic categories cross-linguistically, that is, whether we actually do find a verb like (2) in natural languages. At first glance, a potential candidate for this would be English *have* or its cross-linguistic equivalents, including related structures like 'be at' and so on (henceforth collectively referred to as HAVE). However, an influential family of analyses (Szabolcsi 1981, 1983, 1994; Freeze 1992; Kayne 1993) argue that the various types of clausal possession structures (HAVE, BE AT, etc.) are not in fact an instance of (2), but rather derive from an underlying nonverbal constituent more akin to the one in (1) (a DP for Szabolcsi, a PP for Freeze, a mixed category DP/PP for Kayne). The strongest of these claims, Freeze's (1992), maintains that this is a syntactic universal: *all* clausal possession, cross-linguistically, has the same underlying structure.³ This has several advantages and merits: (i) it accounts for a number of par-

¹The tree in (1) is meant to be a simplified/abbreviated structure, with room for more intermediate projections between NP and D. The same applies to the tree in (2).

 $^{^{2}}$ For now I abstract away from the difference between relating two DPs, as in (2), and relating a DP and an NP, as in (1). This issue is taken up in Sect. 7.

 $^{^{3}}$ However, Freeze acknowledges that clausal possession in Hungarian cannot be derived from this universal structure, and sets it thus aside; see fn. 23 and Sect. 8. An anonymous reviewer points out how taking Freeze at face value, we already had at least two distinct syntactic categories possession could be formed from (D, and P in Hungarian), so Äiwoo would be contributing to the same point by adding a third one (V).

ticular properties of HAVE, which are otherwise unexplained under a view where it is a simple run-of-the-mill transitive verb; (ii) it reduces surface-level cross-linguistic variation to a universal structure (restricting the space of alternatives for the learner).

However, even if we accept this kind of reductionist analysis of HAVE, it would still be a mystery *why* the universalist claim should hold. That is: why should we not expect to find a structure like (2) in one language or another? After all, there is absolutely nothing ill-formed about it. It is a transitive verb taking two arguments and expressing the fact that some kind of relation holds between them. Moreover, it would be just another instance of parallelism between clausal and nominal structures, with the possessor and the possessum hierarchically ordered like external and internal arguments. In fact, Szabolcsi's (1981, 1983) original arguments were precisely in this direction, highlighting how possessors are similar to clausal subjects in various ways. In other words: even if the universalist claim were empirically true, our theories have no principled way to prevent something like (2) from existing, so we wouldn't be in a position to understand *why* this universal should hold (see Boneh and Sichel 2010 for a similar point).

In this paper, I offer an empirical argument that (2) does in fact exist. I present a case study from the Äiwoo language, where I show that a verbal POSS not only exists but is, in fact, the only way at all to express possession in the language. Äiwoo simply lacks any possession head that's part of the nominal extended projection, like (1). I propose that Äiwoo POSS has exactly the argument structure outlined above, with the semantics very approximately sketched in (3). A couple concrete examples are given in (4). To stay maximally neutral and avoid any associations with HAVE, I stick to the label POSS (in fact, I argue that POSS is different from HAVE in important ways; see below).⁴ Sentence (4a) showcases POSS used as a transitive verb in a standard main clause (OVS order). In (4b), we see POSS in its DP-internal use.

- (3) $[(2)] \approx$ 'POSSESSUM is POSSESSOR's.'
- (4) a. [boat enge]_O nogo [Pita]_S.⁵
 boat this POSS:TO Peter
 'This boat is Peter's.'^(E) Lit. 'Peter POSS this boat.'
 - b. [boat [nogo Pita]_{RC}]_{DP} i-wâ=nâ.
 boat POSS:TO Peter ASP-go=DIST
 'Peter's boat left.'^(E) Lit. '[The boat_i [that Peter POSS __i]] left.'

⁴I discuss the relation between the translation 'DP is POSSESSOR's' and the underlying transitive Äiwoo syntax in Sect. 1.4. For more details about the semantics of POSS and its relation to HAVE, see Sect. 7.

⁵I adopt the working Äiwoo orthography that is also used in other recent published literature (Næss 2006 et seq.) and the dictionary (Næss 2017). Most symbols have their predictable IPA value, with the exception of $\langle \ddot{a} \rangle = /\alpha - p/$, $\langle \dot{j} \rangle = /^{p} dg/$, $\langle ng \rangle = /n/$, $\langle ng \rangle = /n/$. All voiced stops are prenasalized (/^mb, ⁿd, ⁿdg, ⁿg/).

The abbreviations follow the Leipzig Glossing Rules, plus: 12 = first person inclusive, ASP = aspect, AUG = augmented number, AV = Actor Voice, BN = bound noun, CNJ = conjunct order, DIR = directional, DR = drinks (possessive class), FO = food (possessive class), GE = generic (possessive class), IC = initial change, LO = locational (possessive class), MIN = minimal number, TA = transitive animate, TAM = tense/aspect/mood, TO = tools and utensils (possessive class), UA = unit-augmented number, UNM = unmarked case, UV = Undergoer Voice.

At first glance, the possessed DP in (4b) does not seem striking in any particular way. In the rest of the paper, however, I offer empirical arguments for an analysis of this DP as containing a relative clause where the object (the possessum) has been extracted, as indicated in the free translation and bracketing. I argue that, in fact, all possessed DPs in Äiwoo contain a relative clause of this kind. Since the only possession-related item in the language is a verb, the only way to create a possessed DP is through relativization. The two main arguments will be based on the pattern of φ -marking and a voice morphology pattern; crucially, both patterns are identical in possessive constructions and in transitive verbs in Undergoer Voice, and different in intransitives, transitive verbs in Actor Voice, and nominal predicates.

The existence of Äiwoo POSS bears on our understanding of the cross-linguistic mapping of possession onto syntactic categories. Following Szabolcsi (1983), Freeze (1992), and Kayne (1993), we know that certain examples of clausal possession (HAVE) actually derive from underlying nonverbal structures. However, the Äiwoo case cannot be reduced to this, because it is the other way around: instead of build-ing clausal possession from a nonverbal constituent, the basic structure is a transitive clause, and possessed DPs are built out of that. This is thus a clear instance of an inherently verbal possessive structure. Given what our theory of UG allows, the Äiwoo structure is, in fact, something we *should* expect to exist. Its absence from natural languages, rather, would be a mysterious gap.

The consequence of the existence of Äiwoo POSS is that a better theory of grammar holds the mapping of possession onto syntactic categories to be flexible, on a language-specific basis. In fact, a similar idea is entertained by Adger (2013). Based on syntactic differences between Scottish Gaelic and several other languages, he considers the possibility that the functional head that encodes (certain types of) possession, which he labels P or more specifically P_{poss} , might extend into the nominal projection in some languages and into the verbal projection in others.⁶ Here, I present explicit empirical arguments that this must indeed be the case.

The core empirical part of the paper (Sects. 3-5) has the general structure of an extended "If it walks like a duck, and it quacks like a duck, ..." argument: my procedure will be to demonstrate that Äiwoo transitive verbs in Undergoer Voice show some particular phenomenon P and then that P also happens in the exact same way in the possessive system.

1.2 Background about the language

Äiwoo is an Oceanic (Austronesian) language spoken in the Solomon Islands, more specifically on the Reef Islands in the Temotu Province, with about 8400 speakers (Ross and Næss 2007). The data this work builds on consists of a corpus of natural speech (approximately 75,000 words) collected over several fieldwork trips (2004–2018) by Åshild Næss, whom I thank for making it available to me. During the review process for this paper, it became possible for me to conduct a small amount of fieldwork over Zoom with one native speaker, Mr. Luke Gitakulu, thus supplementing the corpus data on a few crucial missing points. Data points marked with ^(E) have

⁶A similar idea, based on data from Tuparí, is discussed by Singerman (2018), who proposes that negation can "live" in either type of extended projection depending on the specific language.

been elicited by me; those marked with ^(M) come from a translation of the Gospel of Mark; unmarked ones are from Næss's corpus.

Äiwoo is an underresearched language, and there is no published grammar. This paper builds on and extends the available description and analysis of the language, mostly carried out by Åshild Næss (Næss 2006, 2015, 2018, 2021b; Ross and Næss 2007; Næss and Boerger 2008; among others). I proceed now to present a few background facts about the grammar of the language, indispensable for following the argumentation of this paper.

First, a few terminological remarks. Throughout the text, I use the terms "subject" and "object" in a loosely defined pretheoretical sense, equivalent respectively to "external argument" and "internal argument." Moreover, Äiwoo has a so-called minimal-augmented number system (Næss 2006). Simplifying coarsely, the number labels "minimal," "unit-augmented," and "augmented" loosely correspond to "singular," "dual," and "plural" respectively. The interested reader can refer to Corbett (2000), Cysouw (2003), Harbour (2016), and references therein for more details about minimal-augmented number systems. Finally, like other Austronesian languages, Äiwoo has a symmetrical voice system (Næss 2015). The main contrast is between Actor Voice (AV) and Undergoer Voice (UV); to avoid clutter, I will only gloss voice when relevant.⁷

AV and UV clauses are illustrated in (5) and (6) respectively. Word order is fairly strict: the pivot—the subject in AV, the object in UV—is sentence-initial. AV has SVO order (5a), and the verb carries person/number prefixes (5b). Intransitive verbs also pattern like AV ones (of course, without an object). UV has OVS order (6a), and the verb carries person/number suffixes instead of prefixes (6b). The position of the nonpivot argument—the object in AV, the subject in UV—is asymmetrical with respect to a template-like series of particles that cliticize phonologically to the left, here represented by the TAM clitic =*to*. AV has S V=CL O order (5), whereas UV has O V S=CL order (6). (Äiwoo shows frequent dropping of nominal arguments, as long as the reference is recoverable from the discourse.)

- (5) Actor Voice: S V=CL O, φ -prefixes a. [John]_S i-epave=to [sii]_O. John ASP-cook.AV=TAM fish 'John has cooked fish.'^(E)
 - b. i-li-epave=to sii. ASP-**3AUG**-cook.AV=TAM fish 'They have cooked fish.'^(E)
- (6) Undergoer Voice: O V S=CL, φ -suffixes
 - a. [sii]_O i-epavi [John]_S=to. fish ASP-cook.UV John=TAM 'John has cooked the fish.'^(E)

⁷The voice morphology itself is highly idiosyncratic and often not segmentable, so I gloss it as fused to the verb stem itself (see Roversi 2019, Sect. 3.2 for discussion).

b. sii i-epavi-i=to.
 fish ASP-cook.UV-3AUG=TAM
 'They have cooked the fish.'^(E)

I assume that in UV the subject is base-generated above and asymmetrically ccommands the object, despite the surface OVS word order, which I assume to be a result of later movements. See Roversi (2024a) for a detailed argument based on binding.

1.3 Äiwoo possessives: A first surface description

The Äiwoo possessive system shows an alienability split, as do many languages of the same family and geographical area (Lynch et al. 2002, Sect. 2.7). In the Oceanist literature, the two different constructions used with the two groups of roots are commonly referred to as "direct possession" (for inalienable roots) and "indirect possession" (for alienable roots). Here, I will use the less language-specific terms "inalienable" and "alienable."

Inalienably possessed roots take a suffix indexing the possessor's φ -features, attached directly to the root itself. This group consists, chiefly, of kinship terms and body parts. Some inflected forms of 'father' are in (7).⁸

There is no noninflected/nonpossessed form of inalienable roots. Alienably possessed roots cannot take a possessor suffix directly. Instead, as shown in (8), they are followed by a possessive classifier, taking (almost) the same paradigm of suffixes seen on the inalienably possessed roots. See Appendix A for full paradigms.

(7)	Inalienably possessed roots				
	tumo -mu	tumo -de	tumwä	tumwä -i	
	father-2MIN	father-12AUG	father.3MIN	father-3AUG	
	'Your father'	'Our.INCL father'	'His/her father'	'Yheir father'	
(8)	Alienably poss	essed roots			
	a. nenu na	-mu			
	coconut PO	SS:FO-2MIN			
	'Your coco	nut'			
	b. nenu na	-i			
	coconut PO	SS:FO-3AUG			
	'Their coco	onut'			
	c. nenu nu	mo -mu			
	coconut PO	SS:DR-2MIN			
	'Your coco	nut'			

⁸Äiwoo pronouns and agreement markers do not make any gender distinctions. In this paper, I will consistently translate 3MIN forms as '*s/he*' and 'his/her', instead of a gender-neutral 'they(.SG)' (Bjorkman 2017; Conrod 2019, 2022a,b). Because of the nature of the data under discussion, the reader would face the task of reliably distinguishing between 'they.SG hit them.PL' and 'they.PL hit them.SG,' 'their.SG dog' and 'their.PL dog' and 'their.SG dogs,' and so on. I choose the variants 's/he' and 'his/her' as a clearly less than optimal solution for improved readability, despite the fact that they may actively contribute to enforcing a strictly binary conception of social gender. I thank Kirby Conrod (p.c.) for precious advice about this.

- d. nenu numä-i
 coconut POSS:DR-3AUG
 'Their coconut'
- e. nenu no**-mu** coconut POSS:GE**-2MIN** 'Your coconut'
- f. nenu no-i coconut POSS:GE-**3AUG** 'Their coconut'

There are six possessive classifiers, whose use depends on the intended construal of the relation between the possessor and the possessum.⁹ For example, the coconut in (8a, b) is one that the speaker construes as edible, the one in (8c, d) is one that is intended to be drinkable (at the stage where one drinks the coconut water), and the one in (8e, f) only has more generic possession semantics (e.g. it could be a piece of decoration). The six classifiers are: (i) general; (ii) food; (iii) drinks; (iv) betel nuts and related objects; (v) tools and utensils; (vi) "real estate" and other locational nouns (houses, gardens, beaches, etc.).

1.4 The empirical proposal in a nutshell

The core claim of this paper is that despite the relatively familiar appearances of the possessive elements in (7) and (8), Äiwoo really only has one abstract possession verb, which I label POSS. This predicate is at the base of every possessive construction in the language, whether DP-internal (possessed DPs, both alienable and inalienable) or predicative (i.e. conveying meanings like 'I have DP' or 'DP is mine'). In other words: unlike more familiar languages, Äiwoo does not have possessive pronouns/ determiners like *my/mine*, anything like a Saxon genitive construction, or anything like a verb HAVE.

I argue that POSS is a transitive UV verb, which lacks an AV counterpart. This is not unique to POSS: other verbs are also not attested as having an AV form, such as *kää* 'know' and *te* 'see' (Roversi 2024b; Næss 2024). POSS takes the possessor as its external argument and the possessum as its internal argument (9); the optional modifier slot is explained below.



⁹Despite the term "classifier," these are only used to express possession, and not for example in combination with numerals as in many East Asian and Southeast Asian languages (Aikhenvald 2000; among others).

Given its transitive argument structure, it might be tempting to conceptualize POSS as the Äiwoo translation of HAVE. However, this would be inaccurate, and I explicitly refrain from doing so. The main reason is that HAVE poses a definiteness restriction on its object that POSS does not share. An English sentence like Alex has the boat is simply infelicitous under the standard ownership reading of HAVE, and can in fact only have a temporary possession reading (roughly, 'the boat is available to Alex (at a contextually salient time)'). Differently from HAVE, Äiwoo POSS has no trouble with definite objects; see Sect. 7 for a more detailed discussion. English does not have a clear example of a transitive possession verb that works like POSS in being compatible with a definite object. There exists no hypothetical verb *nave* such that [Alex naves the boat] = [the boat is Alex's].¹⁰ Therefore, in this paper I will mostlyuse translations like 'DP is POSSESSOR's' in the third line of glossed examples, simply because this often happens to be the most idiomatic or natural translation in English. However, it ought to be explicit that this translation is not meant to be reflective of Aiwoo syntax. Although Aiwoo POSS is most readily translated into English with an intransitive/copular construction, it is a fully transitive verb.

I propose that POSS can combine with nominals in two ways. In addition to taking a DP as its object, it can be modified by nominal roots, creating morphosyntactically complex predicates with the meaning 'POSS.as.{...}.' The possessive classifiers in (8) are the spell-out of POSS when modified by six different roots carrying various semantics ('POSS.as.food,' 'POSS.as.drink,' etc.). I argue that the same structure also underlies the inalienable possessive system: POSS can also be combined with kinship roots and body part roots. Consistently, the result is another array of complex possessive predicates, with the meaning 'POSS.as.son,' 'POSS.as.mother,' etc. What on the surface look like inflected nouns are in reality just null-headed relative clauses: 'my son' is, really, 'the one I have as a son.'

As outlined, possessed DPs like 'my boat' or 'my son' are built through relativization. Intuitively: 'my boat' really has the syntax of 'the boat that is mine/that I possess' (10b).

(10) a. Baseline transitive clause:

 $\llbracket I \text{ POSS.as.tool boat} \rrbracket \approx$ 'the boat is mine'

As anticipated, I argue that the syntax of inalienable possessive constructions is entirely parallel. What looks like an inflected noun (e.g. *ginou* 'son.1MIN' = 'my son') is in fact not a simple noun but a relative clause with a null head. Given a basic UV clause 'I POSS.as.son him' (\approx 'he's my son'), we can extract the theme and create the DP 'he_i [(whom) I POSS.as.son $__i$]' \approx 'my son.'¹¹ An alternative analysis, perhaps superficially more intuitive, would posit the kinship noun as the object of POSS, which gets extracted and heads the relative clause: "my son" would be the reading of

¹⁰Verbs like 'possess' and 'own' wouldn't necessarily be good alternatives, because their semantics are somewhat more restricted than the ones conveyed by the Saxon genitive, for example.

¹¹In fact, I will argue that this is also possible for alienable roots (thus creating predicates like 'POSS.as.dog'). I will show the morphosyntactic evidence for this in Sect. 3.2.3.

the structure 'son_{*i*} [whom I POSS ___*i*].' However, I explicitly argue against such an analysis in Sect. 3.2.2.

2 Syntax and word order

2.1 Word order in UV and possessives

First, let us establish that the syntax and word order of possessive structures is not only compatible with a relative clause-based analysis but in fact exactly what we expect given the syntax of relativization and UV in general. As shown in Sect. 1.2, UV clauses have unmarked O V S=CL order, where =CL identifies a fixed series of clitic-like particles. One of these is the negative particle =gu (Roversi and Næss 2019):

(11) [nuwopa]_O ba i-ve [John]_S=gu. house NEG ASP-buy.UV John=NEG 'John didn't buy the house.'^(E)

Let us now consider possessives. In predicative constructions, when the conveyed meaning is 'POSSESSUM is POSSESSOR's,' the attested word order has the possessum in sentence-initial position and the possessor immediately right-adjacent to the possessive classifier (12). This is expected if we hypothesize that POSS is a UV verb with the possessum as its object and the possessor as its subject: it reduces to OVS order. Moreover, introducing negation confirms that an overt possessor DP is in the same structural position as an overt UV subject, to the left of =gu (13).

- (12) [sapulâu] tä [penyibe]. men's.house POSS:LO old.men
 'The sapulâu house belongs to the elders,' or '... is [the elders'].'
- (13) [lovävei enge ngâgu-de] ba nogo [miluwopa]=gu.
 system this to-12AUG NEG POSS:TO Europeans=NEG
 '[This system/arrangement for us] is not of [the Europeans].'

2.2 Relativization in Äiwoo

Let us now turn to the more common use of possessive classifiers (and inalienably possessed nouns), namely, when these are used within DPs. My claim is that these possessed DPs contain a relative clause. The object of the transitive verb POSS is extracted, and forms the head of the relative clause. In order to show that this is a feasible analysis of possessive structures, let us now look at what relativization in Äiwoo looks like in general. As illustrated in (14a), relative clauses follow their head noun, and have no overt complementizer. As illustrated in (14b), the head noun can also be null (notated here as *pro*, though nothing hinges on this specific choice).¹²

¹²Although I notate relativization with movement arrows in these examples, I do not intend to make any claims as to whether Äiwoo relative clauses are better analyzed as involving A- or Ā-movement (Newman 2023), operator movement specifically (Chomsky 1977; Jackendoff 1977), matching (Lees 1960, 1961; Schachter 1973; Vergnaud 1974; Sauerland 1998), or head raising (Bhatt 2002). In work currently in progress, I am exploring the fine details of relativization and Ā-movement in Äiwoo.

(14) a. [nuwopa [_{RC} → i-ve John]]=kâ mi=olo-mana. house ASP-buy.UV John=DIST BN:one=big-very 'The house that John bought is very big.'^(E)
b. [pro [_{RC} → i-ve-Øⁿ]]=nâ mi=olo-mana. ASP-buy.UV-3MIN=DIST BN:one=big-very 'The one he bought is very big.'^(E)

Turning now back to possessives, once again we see that the word order found in possessive structures is entirely compatible with the expected syntax given a UV-based analysis. If the possessum is the extracted object of the UV verb POSS, then it should be to the left of the possessive marker, and it is. Moreover, if the possessor is the in situ subject of the embedded relative clause (whose verb is POSS), it should be right-adjacent to the possessive marker, and not preceded by any preposition or any other material. This is also borne out, both in alienable (15a) and inalienable structures (15b).

(15) a. nuwopa tä [Meri] house POSS:LO Mary 'Mary's house'

> b. isä [Meri] mother Mary 'Mary's mother'

To summarize: the word order and syntax of possessive constructions is compatible with an analysis of possessives as underlyingly containing a transitive UV predicate.

3 Object agreement and possessum agreement

In this section I show how possessives and UV verbs show identical behavior, specifically in the domain of object agreement. First, here I'll give a concise overview of the argument.

UV verbs have a rather complex agreement system. Object agreement surfaces in only a specific set of combinations of subjects and objects, depending on both arguments' φ -features (16a). In all other cases, the object is realized as a postverbal pronoun (16b); this is an exception to the OVS order found in UV clauses (Roversi 2019, Sect. 6). (In the notation "X > Y," X and Y represent the φ -features of the subject and object respectively.)

(16) Object agreement versus pronouns on UV verbs

a. 3MIN > 3AUG: object agreement
i-togulo-gu-i=laa.
ASP-hit.UV-3MIN-3AUG=FUT
'S/he will hit them.'

b. 2MIN > 3AUG: object pronoun i-togulo-mu=waa ijii. ASP-hit.UV-2MIN=FUT 3AUG 'You will hit them.'

An analysis of possessives as containing the UV verb POSS predicts that, in all and only the configurations where UV verbs show object agreement, we should find a suffix indexing the possessum's φ -features. In all other cases, we should find a pronoun doing the same thing. And in fact, this is exactly what we see:

- (17) Possessum agreement versus pronouns in possessive structures
 - a. 3MIN > 3AUG: possessum agreement kuli no-gu-i dog POSS:GE-3MIN-3AUG 'His/her dogs'
 - b. 2MIN > 3AUG: possessum pronoun kuli no-mu ijii dog POSS:GE-2MIN 3AUG 'Your dogs'

I will now present the UV agreement system in detail (Sect. 3.1) and how it is paralleled in possessive constructions, both when the possessum is third person (Sect. 3.2.1) and when it is first/second person, in predicative contexts of the type 'I am yours' (Sect. 3.2.2). This set of facts constitutes a strong argument for the inherently verbal nature of POSS.

3.1 UV verbs: Object agreement

The agreement pattern of UV verbs specifically is relevant because the two voices have different agreement systems. Agreement in AV is rather straightforward: the verb always agrees with the subject, and there is no object agreement whatsoever. On the other hand, as we have seen UV is decidedly more complex in terms of agreement (Næss 2006 et seq.; Roversi 2020). A UV verb always agrees with the subject. In addition, it may agree with the object, depending on the φ -features of both arguments, as schematized in (18).¹³

- (18) Object agreement is found iff:
 - a. Subject = first person; object = second person
 - b. Subject = 3MIN; object = non-3MIN

When there is no object agreement, the object is realized as a full pronoun instead (which might be null for 3MIN). The two different constructions are illustrated below. In (19a, b), both arguments are marked by suffixes on the verb. In (19c, d), only the

¹³More precisely: (18a) only applies to 1MIN/1AUG subjects; unit-augmented subjects block object agreement. I abstract away from this detail in what follows. Moreover, this empirical generalization diverges somewhat from the one described in earlier literature (Næss 2006 et seq.; Roversi 2020), which was based on partially faulty data; I discuss this matter in Appendix B.

subject is, and the object is a pronoun. The difference between object agreement markers and object pronouns is also supported by their placement with respect to the future clitic =Caa.

- (19) a. 1MIN > 2MIN: object agreement i-togulo-nee-mu=waa. ASP-hit.UV-1MIN-2MIN=FUT 'I will hit you.'
 - b. 3MIN > 3AUG: object agreement i-togulo-gu-i=laa. ASP-hit.UV-3MIN-3AUG=FUT 'S/he will hit them.'
 - c. 2MIN > 1MIN: object pronoun i-togulo-mu=waa iu. ASP-hit.UV-2MIN=FUT 1MIN 'You will hit me.'
 - d. 3AUG > 3MIN: object pronoun i-togulo-i=laa (Ø).
 ASP-hit.UV-3AUG=FUT 3MIN 'They will hit him/her.'

Regardless of the analysis of this pattern (see Roversi 2020 for one analysis), what is crucial for this paper is only that the set of configurations that trigger object agreement is exactly the same set that triggers "possessum agreement," which I proceed to discuss now.

3.2 Object agreement in possessives: Possessum agreement

In this section I show how the UV agreement system is replicated in possessive constructions. Whenever object agreement is triggered on UV verbs, in exactly all and only the same configurations we find "possessum agreement" on possessives. Conversely, whenever a UV clause would have an overt object pronoun, in possessive structures we find an overt pronoun indexing the possessum.

3.2.1 Third person possessa

3AUG possessa Within possessed DPs, the possessum can only be third person, not a first/second person pronoun (though see fn. 15). First, let us examine the case of 3AUG possessa.

In a UV clause, whether a 3AUG object is realized as a suffix on the verb or as a pronoun depends on the φ -features of the subject. If this is 3MIN, we'll have an object suffix (20a); otherwise, an object pronoun (20b).

(20) a. 3MIN > 3AUG: object agreement i-togulo-gu-i=laa. ASP-hit.UV-3MIN-3AUG=FUT 'S/he will hit them.' b. 2MIN > 3AUG: object pronoun i-togulo-mu=waa ijii. ASP-hit.UV-2MIN=FUT 3AUG 'You will hit them.'

For possessive structures, our prediction is that if the possessum is 3AUG, we should see it overtly marked, either as a suffix or as a pronoun, depending on the features of the possessor (the subject of our putative POSS verb). This is borne out. The configurations in (20) are replicated for possessive structures in (21) and (22). In 3MIN > 3AUG, a configuration triggering object agreement on UV verbs (20a), we find that possessives carry the exact same type of marking: see (21a) and (22a). In 2MIN > 3AUG, object agreement is blocked on verbs, and the object is realized as a full pronoun (20b). Crucially, this also replicates for possessives: see (21b) and (22b). To highlight the parallel between UV verbal structures and possessive structures, I include an informal rendition of the proposed underlying Äiwoo syntax.

- (21) Alienable possession
 - a. 3MIN > 3AUG: possessum agreement kuli no-gu-i dog POSS:GE-3MIN-3AUG
 'His/her dogs' < [dogs_i [(such that) (s/he) POSS-3MIN-3AUG (them_i)]
 - b. 2MIN > 3AUG: possessum pronoun kuli no-mu ijii dog POSS:GE-2MIN 3AUG
 'Your dogs' < [dogs_i [(such that) (you) POSS-2MIN them_i]
- (22) Inalienable possession
 - a. 3MIN > 3AUG: possessum agreement gino-gu-i son-3MIN-3AUG
 'His/her sons'<[(they_i)[(whom) (s/he) POSS.as.son-3MIN-3AUG (them_i)]
 b. 2MIN > 3AUG: possessum pronoun gino-mu ijii son-2MIN 3AUG

'Your sons' $< [(\text{they}_i) [(\text{whom}) (\text{you}) \text{POSS.as.son-2MIN them}_i]$

(For inalienable possessive structures (22), I argue that what looks like a noun is really a null-headed relative clause. The kinship root is a modifier to POSS and not the object itself being extracted, which is a null pronoun. Ergo, I do not assume the underlying structure of (22a) to be '[sons_i [(whom) (s/he) POSS-3MIN-3AUG (them_i)]].' See Sect. 3.2.2 for arguments.)

3MIN possessa Let us now go back to the possessive data presented initially—with no possessum agreement nor possessum pronouns—and see how it fits into the picture drawn here. The key observation is that the lack of (overt) marking of possessa parallels the lack of (overt) marking of 3MIN arguments in UV verbs. In UV clauses with 3MIN pronominal objects, the 3MIN object pronoun is nearly always dropped. If

the subject is anything other than 3MIN, that's the only overt marking (23a). If both arguments are 3MIN, we see no marking at all (23b).¹⁴

- (23) UV verbs with 3MIN objects
 - a. I-togulo-mu=waa (Ø). ASP-hit.UV-2MIN=FUT 3MIN 'You will hit him/her/it.'
 - b. I-togulo- \mathscr{O}^n =naa (\mathscr{O}). ASP-hit.UV-**3**MIN=FUT **3**MIN 'S/he will hit him/her/it.'

Keeping in mind the parallels subject-possessor and object-possessum, let us now compare (23) to what happens with 3MIN possessa. Across possessive structures, the distribution of null marking—or the absence of marking—is exactly the same as on UV verbs:

(24) Alienable possessives with 3MIN possessa a. kuli no**-mu** (Ø) dog POSS:GE-2MIN 3MIN 'Your dog' < [the dog_i [(such that) (you) POSS-2MIN \emptyset_i] b. kuli no-Øⁿ (Ø) dog POSS:GE-3MIN 3MIN 'His/her dog' < [the dog_i [(such that) (s/he) POSS-**3**MIN \emptyset_i] Inalienable possessives with 3MIN possessa (25)a. gino-mu (Ø) son-2MIN 3MIN 'Your son' < [him_{*i*} [(whom) (you) POSS.as.son-2MIN \emptyset_i] b. gino- \mathcal{Q}^n (\mathcal{Q}) son-3MIN 3MIN 'His/her son' < [him_i [(whom) (s/he) POSS.as.son-**3**MIN \emptyset_i]

3.2.2 First/second person possessa

The kind of marking of 3AUG possessa discussed in the previous section has already been noted: Næss (2018) analyzes it as a (typologically highly unusual) form of number marking on nominals. However, what has not been previously observed is that possessives show the same UV verb–like behavior even when the possessum is *not* third person—something that cannot be covered by Næss's analysis. Within a possessed DP this state of affairs is unlikely to occur, as the possessum (the head of the DP) will be third person.¹⁵ However, if POSS is a run-of-the-mill transitive verb, we

¹⁴See Roversi (2020, Sect. 3.4) for arguments that there is indeed a null 3MIN suffix \emptyset^n , detectable through allomorphic alternations it triggers on certain elements that may follow it, like the future clitic =Caa in (23).

¹⁵We do not know at this stage whether it is possible in Äiwoo to have relative clauses headed by a first/second person pronoun (e.g. 'we_i [who ... __i]'). The prediction is that *iff* it is possible to relativize a first/second person pronoun from a verb like 'hit,' then it should also be possible to do so with POSS, creating DPs like, for example, 'you_i [whom I POSS.as.son __i]' = 'you who are my son.' I thank Sandhya Sundaresan for discussion of this point.

should expect to at least be able to find first/second person possessa in predicative possession constructions, like 'I am/we are {yours, his, ...}' or 'You are {mine, theirs, ...}.' For the sake of the exposition, at this point it is useful to repeat the generalization about the distribution of object agreement (26). In all other cases (2 > 1; 3AUG > any object), the object is realized as a postverbal pronoun. A few illustrative examples of both patterns are in (27) and (28). I proceed then to show how this is also paralleled in possessive structures.

- (26) Generalization: object agreement is found iffa. Subject = first person; object = second person
 - b. Subject = 3MIN; object = non-3MIN
- (27) Object agreement
 - a. i-togulo-**nee-mu**=waa. ASP-hit.UV**-1MIN-2MIN**=FUT 'I will hit you.'
 - b. i-togulo-gu-mu=waa. ASP-hit.UV-3MIN-2MIN=FUT 'S/he will hit you.'
- (28) Object pronoun
 - a. i-togulo-**mu**=waa iu. ASP-hit.UV-**2**MIN=FUT **1**MIN 'You will hit me.'
 - b. i-togulo-i=laa iumu. ASP-hit.UV-**3AUG**=FUT **2MIN** 'They will hit you.'

Possessum agreement In object agreement contexts (1 > 2 'You are mine/ours'; 3MIN > 1/2 'I am/you are his/hers'), we find possessum agreement. This holds across alienables (29) and inalienables (30). For brevity's sake, I only show a few of the possible relevant combinations of φ -features. This specific analysis of (29b) is defended in Sect. 3.2.3; I ask a skeptical reader to accomodate this for the time being.

(29) Alienables

(30)

a.	go känä	ä nou	ı-nee-mu	(1 MIN > 2 MIN)
	because say.	3min pos	SS:GE-1MIN-2	MIN
	'Because s/h	e says that	at you are mine	$(^{(M9:41)} < [I POSS-1MIN-2MIN you]$
b.	(iumu=wâ)	kuli no-	gu-mu.	(3MIN > 2MIN)
	2MIN=DIST	Г dog PO	SS:GE-3MIN-2	MIN
	(Speaking to you]	a dog.) '	You're his dog	' ^(E) < [he POSS.as.dog -3 MIN-2MIN
Ina	lienables			

a. (iumu=wâ) ginou-nee-mu. (1MIN > 2MIN)2MIN=DIST son-1MIN-2MIN

'(You there,) you're my son.' $^{(E)} < [I POSS.as.son-1MIN-2MIN you]$

b. lâ iumu=wâ Gino-une-i-**gu-mu** God. (3MIN > 2MIN)DIST 2MIN=DIST son-true-UV-**3MIN-2MIN** God 'You are the true Son of God.'^(M3:11) < [God POSS.as.son-truly-**3MIN-2MIN** you]

Importantly, this agreement pattern is starkly different from that found on nominal predicates. In Äiwoo, nominal predicates abound, and they behave morphosyntactically like intransitive verbs, taking φ -prefixes. Consider in this respect (31), with ostensibly the same meaning as (30b). Here, this bona fide nominal predicate behaves like an intransitive verb, so there is only subject agreement in the form of a prefix. This contrasts with the subject and object agreement suffixes of (30b), which reflect the UV pattern.

(31) iumu=wâ mu-[Kraes-une]. 2MIN=DIST 2MIN-Christ-true 'You are the true Christ.'^(M8:29)

Possessum pronouns In configurations that block object agreement on UV verbs (2 > 1; 3AUG > any object), the object is realized as a pronoun instead. In this case as well, possessive structures ('I am/we are yours'; 'I/you/we are theirs') behave in the same way, with the possessum being realized as an overt pronoun. Again, I only report a few relevant combinations of φ -features, for alienables in (32) and inalienables in (33).

(32) A	Alienables
--------	------------

1 11101100100			
a. (iu=nge)	devalili no -mu	iu.	(2MIN > 1MIN)
1min=pro	x child POSS:GE-2	MIN 1MIN	
'(Me here,)	I'm your child.'(E) $<$	[you POSS.as.cl	nild-2MIN me]
b. (iumu=wâ) 2MIN=DIST	devalili no -i г child POSS:GE -3 A	iumu. AUG 2MIN	(3AUG > 2MIN)
'(You there,)) you're their child.' (E	$^{)}$ < [they POSS.	as.child-3AUG you]
Inalienables a. (iu=nge)	gino -mu iu.		(2min > 1min)
1MIN=PRO	X son-2MIN 1MIN		

'(Me here,) I'm your son.'^(E) < [you POSS.as.son-2MIN me]

b. (iumu=wâ) tumä-i iumu. (3AUG > 2MIN)2MIN=PROX father-3AUG 2MIN '(You there,) you're their father.'^(E) < [they POSS.as.father-3AUG you]

3.2.3 What POSS can combine with

Data points like (29b), (30b), (32) and (33) importantly teach us what kind of items POSS can combine with syntactically. In (29b) ('You're his dog'), the object is second person as evidenced by the agreement suffix, and therefore, *kuli* 'dog' clearly cannot be the (extracted) theme of POSS. Hence, we have strong evidence for a null-headed

(33)

relative clause analysis: the object is a null pronoun, and the nominal stem 'dog' is a modifier of POSS, thus forming a complex transitive predicate 'POSS.as.dog.' The relative clause is then more faithfully rendered as 'he POSS.as.dog you.' Similarly, in (30b) the inalienably possessed root *gino* 'son' is really being used as a transitive predicate 'POSS.as.son.' (The modifier *une* 'true' and the suffix *-i* are discussed in Sect. 4.) The same logic applies to (32) and (33).

The difference between inalienably possessed roots and all others seems to be that the former must always attach to POSS, forming complex predicates, whereas the latter have this as an option but can also stand alone as nonpossessed nouns. Although both root classes can modify POSS, they differ in whether there is overt morphological material (the possessive classifiers) between the root and the inflection: alienable roots have them, and inalienable ones do not. I assume that this reflects a difference in how much structure POSS is combining with.

For concreteness, here is an implementation following the tenets of Distributed Morphology (Halle and Marantz 1993, 1994), where acategorial roots are first combined with a category head (v, n, etc.). As for the φ -markers, I assume these are the spell-out of a higher head containing an agreement probe (e.g. T) to which the verb head-moves later, not represented here. For inalienables (34a), POSS (with its verbalizer v) combines with a bare root, so the whole constituent is spelled out as one phonological word (as indicated by the arc). Alienable roots cannot combine bare with POSS but instead have a small layer of structure on top of them; in (34b) I notate this as an n head, although this choice isn't crucial to the argument.¹⁶ What's crucial is that this extra layer of structure triggers spell-out and prosodification of the root \sqrt{DOG} as its own phonological word (Sande 2019; Sande et al. 2020). Because the morphological material in v can now not be hosted on the nominal portion, a pos-

- (i) Chamorro (Chung and Ladusaw 2004, 86)
 täi-[amiga ni yä-hu] si Carmen.
 AGR.not.have-friend COMP wh_[OBJ].like-AGR UNM Carmen
 'Carmen has no women friends who I like.'
- (ii) Inuktitut (Yuan to appear: 12)
 [niri-ja-tsaq]-siuq-tunga.
 eat-TR.PTCP-potential-look.for-1SG.S
 'I am looking for something that can be eaten.'

It remains to be seen how permissive a theory of incorporation should be while still descriptively adequate.

¹⁶An anonymous reviewer raises the issue of what kind of structure we see in (34b), where a phrasal constituent (*n*P) incorporates into a head (*v*), contra Baker (1988), for example. Although I'm not committed to very specific details of that structure beyond the existence of some additional layer of structure not shared by (34a), incorporation of phrasal material has been to shown to exist in other languages. Chung and Ladusaw (2004, 86) argue that for the possession verbs *gäi/täi* '(not) have' in Chamorro, "the incorporated object has at least the internal structure of an NP. At the same time, the incorporated object is smaller than DP." They show that the incorporated element can be a noun modified by adjectives, plural marking, relative clauses, and for some speakers even coordinated (modified) nouns; the reader is referred to Chung and Ladusaw's Appendix A for further details about the syntax of incorporation in Chamorro. Moreover, Yuan (to appear, Sect. 3.2.2) shows that incorporated objects in Inuktitut are at least as large as DPs (contra earlier proposals that still held them to be phrasal, but only NPs; Compton and Pittman 2010; Branigan and Wharram 2019). Examples of incorporation of phrasal material in Chamorro and Inuktitut are given in (i) and (ii), with bracketing from the original sources.

sessive classifier is inserted, with a logic reminiscent of *do* support (Chomsky 1957; Lasnik 1981; Bobaljik 1995; Bjorkman 2011; among others).¹⁷



4 The morphology of modifiers

4.1 Voice concord morphology in UV verbs

In this section I describe what I analyze as voice concord morphology, and show that it behaves in the exact same way in UV verbs and in possessives. Äiwoo verbs often showcase complex stems, formed by a main stem (the leftmost one) and one or more modifiers ("nuclear-level verb serialization"; Ross and Næss 2007; Næss and Boerger 2008; Næss 2012 et seq.). When a modifier is attached to a UV verb stem, it takes the suffix *-il-nyii*. This suffixation never happens with AV verbs and intransitives (Roversi 2019; Næss 2021b; Wu et al. 2023). This is illustrated in (35), where I bracket the whole complex stem. When the modifier *mana* 'very' is added to the UV form $\hat{a}\hat{a}$ 'pull,' it carries the *-i* suffix (35a).¹⁸ When it is added to the AV form of the same verb, $\hat{a}w\hat{a}\hat{a}$, it does not (35b).

- (35) a. UV: voice concord ki-[ââ-mana-i]-mu=wâ.
 IPFV-[pull.UV-very-UV]-2MIN=DIST 'You catch a lot (of fish).'
 - b. AV: no voice concord mu-ki-[âwââ-mana]=kâ.
 2MIN-IPFV-[pull.AV-very]=DIST
 'You catch a lot (of fish).'^(E)

(i) ki-[eâmole-wâtu-i-päko-i-mana-i]-i ijii=le.
 IPFV-look.UV-COMP-UV-good-UV-very-UV-3AUG 3AUG=PROX
 'They have to look after them more properly.'

¹⁷This has the consequence that a possessed DP like *kuli no-mu* 'dog POSS:GE-2MIN = your dog' is technically structurally ambiguous between a parse where 'dog' is a noun and the extracted object of POSS ('the dog [that you POSS]') and a null-headed relative parse ('the one [that you POSS.as.dog]').

¹⁸If there are several modifiers, concord must appear on every single one:

The form of this suffix is mostly *-i*. However, some modifiers consistently take the allomorph *-nyii* in the same contexts; the alternation seems to be lexically arbitrary. One such modifier is *mole* 'exactly,' as shown in (36). Moreover, some modifiers consistently never take any suffix, for reasons currently not understood. One of these is *eopu* 'also' (37).

- (36) Modifiers with voice concord as *-nyii*lâ sime-eângâ ba i-[kää-mole-**nyii**]-no=gu.
 DIST person-that NEG ASP-know.UV-exactly-UV-1MIN=NEG
 'I don't know this person exactly.'(M14:70)
- (37) Modifiers with no voice concord kele nunugo-ee i-[viteia-eopu]-mu=dä? here tobacco-PROX ASP-sell.UV-also-2MIN=some 'This tobacco, do you sell some of that too?'

4.2 Modifying possessives: Also voice concord morphology

As foreshadowed above, the distribution of voice concord morphology in possessive constructions is identical to that found in UV verbs. Possessives—both alienables and inalienables—can be modified, and when this happens, the modifiers show the suffix -i (38) or -nyii (39), depending on the specific lexical item. The examples below showcase POSS combined with modifiers both in a DP-internal use ((38a) and (39b)) and when used as a main-clause transitive predicate ((38b) and (39a)). Furthering the parallel, those modifiers like *eopu* 'also' that do not carry voice concord morphology with UV verbs also fail to carry it with possessives (40).

```
(38) POSS-modifier-i
```

- a. nuwopa [to-päko-i]-no kâlâ ngâ ny-ângâ. (Alienable)
 house POSS:LO-good-UV-1MIN there in place-that
 'My real house is over there.'^(E)
 - b. ile sime-enge [Gino-une-i] God. (Inalienable)
 PROX person-PROX son-true-UV God
 'This man is the true Son of God.'^(M15:39) ('God truly-POSS.as.son this person.')

(39) POSS-modifier-nyii

- a. mo molâ [nugu-mole-**nyii**]-ji ile=to. (Alienable) but tradition POSS:TO-exactly-UV-12MIN PROX=TAM 'But this is exactly our tradition.' ('We exactly-POSS this tradition.')
- b. [ginou-mole-nyii]-no i-wä ki-skul Nende. (Inalienable) son-exactly-UV-1MIN ASP-go IPFV-school Santa.Cruz
 'My real son goes to school in Santa Cruz.'^{(E)19}

¹⁹It is not entirely clear what the meaning difference is between *mole* in (39b) and *päko* in (38b).

(40) nuwa nyigaa [na-**eopu**]-de ile Nyiwoo. fruit see.almond POSS:FO-**also**-12AUG PROX Reef.Islands '*Nuwa nyigaa* is also our fruit here in the Reefs.'

Importantly, the presence of voice concord morphology when POSS is modified clearly sets it apart from other nominal modifiers and also from intransitive predicates, including nominal ones. First, note how a modifier used on a nonpossessed noun cannot take voice concord morphology (41a), whereas this is obligatory in the context of POSS (41b):

(41)	Modifiers on nouns versus on POSS		
	a. nuwopa päko(*-i)	b.	nuwopa to- päko-*(i) -no
	house good (-UV)		house POSS:LO-good-UV-1MIN
	'The/a good/real house' (E)		'My real house' ^(E)

Finally, remember that nominal predicates behave morphosyntactically like intransitive verbs, taking φ -prefixes. Like all other predicates, they can also be modified, and then they confirm their intransitive-like behavior: their modifiers do not take the voice concord morphology shown by UV verbs and possessives. Consider again the minimal pair (42a) and (42b). In the former, containing a possessive, the modifier *une* 'true' takes the voice concord suffix *-i*. In the latter, the bona fide noun *Kraes* 'Christ' is used as a predicate; the same modifier *une* here takes no voice concord suffix.

- (42) a. iumu=wâ [Gino-une-i]-gu-mu God. 2MIN=DIST son-true-UV-3MIN-2MIN God
 'You are the true Son of God.'^(M3:11) < [God POSS.as.son-truly you]
 b. iumu=wâ mu-[Kraes-une].
 - 2MIN=DIST **2MIN-**Christ-true 'You are the true Christ.'^(M8:29)

To summarize: all possessive structures, both inalienable and alienable, show the same type of voice concord pattern that only UV verbs have. This follows naturally from an analysis of possessives as (containing) the UV verb POSS.

5 φ -morphology on UV verbs and possessives

The φ -marking exponents themselves are also similar in the possessive system and in UV verbs. The core observation is that not only the agreement pattern but also the suffix paradigm found on inalienable stems and possessive classifiers (43) is very similar to the one found on UV verbs (44a), and crucially different from the one found on AV (44b).

(43) a. tumä-i father-3AUG 'Their father'
b. nenu na-i coconut POSS:FO-3AUG 'Their coconut'

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(44)	a.	ki-lââ -i .	(UV)
		IPFV-build.UV-3AUG	
		'They build (it).'	
	b.	ki- li- lâwââ.	(AV/intransitive)
		IPFV- 3AUG-build .AV	
		'They build (something).'	

Let us now take a closer look at the verbal paradigms in both AV and UV (slightly amended from Næss 2015, 74). UV verbs have their subject marked by suffixes (Table 1), whereas AV verbs take prefixes (Table 2; intransitive verbs pattern like AV verbs in this respect). The morphological form itself of the affixes is also different in the two paradigms for almost all first and third person forms, apart from 3MIN \emptyset .

As can be seen from (43) and (44) above, all possessives take a suffix paradigm that is more similar to the UV one than to the AV one. However, the parallel is not perfect, as some forms—only 1MIN and 3MIN forms—deviate from the UV paradigms. In the possessive paradigms, these are most often represented by morphological mutations of the stem itself rather than by segmentable suffixes. I do not have much to say about these mutations, other than highlighting that the locus of the irregularities is strikingly consistent: it is always the same two forms, and almost across all possessive paradigms (with the exception of the BETEL NUT classifier). The full paradigm of the

Table 1 UV agreement suffixes

	MIN	UA	AUG
1	-no, -nee*, -Ø [†]	-ngo-le	-ngo(pu), -ngee*
12	-ji	-de-le	-de
2	-mu	-mi-le	-mi
3	- \mathscr{O}^n , -gu [‡]	-i-le	-i

* The allomorphs *-nee*, *-ngee* are only used before a second person object marker. For details on object agreement and *-ngee* specifically, see Sect. 3.1 and Appendix B.

† 1MIN is only $-\emptyset$ when following the 3MIN subject marker *-gu*.

‡ 3MIN is only -gu when preceding an object marker.

		5 r	
	MIN	UA	AUG
1	i-	mele	me-
12	ji-	dele	de-
2	mu-	mile	mi-
3	(Ø-)	li*le	li*-

Table 2 AV agreement prefixes

* 3AUG *li*- has an allomorph *lu*-, phonologically conditioned.

	MIN	UA	AUG
1	iso	iso-ngo-le	iso-ngo(pu)
12	iso-ji	iso-de-le	iso-de
2	iso-mu	iso-mi-le	iso-mi
3	isä	isä-i-le	isä-i

Table 3 Isä 'mother' (Næss 2021a)

Table 4 POSS:LO (Næss 2006, 273)

	MIN	UA	AUG
1	to	to-ngo-le	to-ngo(pu)
12	to-ji	to-de-le	to-de
2	to-mu	to-mi-le	to-mi
3	tä	tä-i-le	tä-i

inalienably possessed root *isä* 'mother' is shown in Table 3. Apart from 1MIN and 3MIN, the suffix paradigm is identical to the UV verbal paradigm (Table 1). (Other nouns have slightly different alternation patterns, but what is consistent is that only 1MIN and 3MIN do not show overt suffixes.)

As for the possessive classifiers used with alienably possessed nouns, for conciseness I only report the full φ -paradigm for the locational classifier, in Table 4. Once again, 1MIN and 3MIN are the less predictable forms, whereas the rest of the paradigm is the same as the UV verbal paradigm.²⁰ Full paradigms can be found in Appendix A.

Apart from these, the paradigm of φ -suffixes found on possessive forms is the same as the one found on UV verbs, and clearly different from the one found on AV verbs both in terms of position of the affixes and in terms of exponents. Rather than being a simple coincidence, this is predicted by an analysis where possessives are built on the UV verb POSS.

6 Interim summary

Throughout the previous sections, I've argued that Äiwoo has a null transitive possession verb POSS, which only occurs in UV. This verb takes the possessor as its external argument and the possessum as its internal argument. The idea is that POSS is nothing more than a verbal/clausal counterpart of the nominal Saxon genitive (45). Example (45a) represents a fairly standard analysis of the Saxon genitive (Abney 1987; Chomsky 1995). I propose that Äiwoo POSS really just has the same structure (45b), but belongs to the extended verbal projection instead of the nominal one.

²⁰These classifiers also showcase a series of seemingly arbitrary stem alternations, and we find similar ones in the inalienable paradigms. A full analysis of the morphology is beyond the scope of this paper.

(45) a. [DP DP_{POSSESSOR} ['s NP_{POSSESSUM}]] b. [vP DP_{POSSESSOR} [v DP_{POSSESSUM}]]

Äiwoo POSS is always found morphologically fused to some other root. It can either be spelled out as the possessive classifiers (POSS.as.food, POSS.as.drink, etc.), or it can be fused to inalienable roots (POSS.as.son, POSS.as.mother, etc.). This kind of analysis might potentially provide insights for other languages for which similar phenomena have been reported. One example is Chamorro (Chung and Ladusaw 2004), where the verb *gäi* 'have' can incorporate, or be modified by, various nominal roots, creating verbs meaning 'have as pet,' 'have as a child,' and so on. Similar patterns are more common for kinship terms, having been reported for Algonquian, Iroquoian, Uto-Aztecan, and Australian languages (Sapir 1917; Amith and Smith-Stark 1994; Evans 2000; Koenig and Michelson 2010, 2023). See also the typological overview in Bugaeva et al. (2022), under the heading "verbal appositive classifier systems." Finally, perhaps the closest parallel to what I claim for Äiwoo is American Sign Language as analyzed by Abner (2012, 2013). Also in this language, a transitive verbal POSS is the only element with possession-related semantics, so that possessed DPs are built through relativization.²¹

7 Preliminary notes on the semantics of POSS

In this section, I want to offer a speculation about the semantics of POSS and that of HAVE. Purely intuitively, POSS and HAVE are not translational equivalents of each other. A sentence where POSS is used by itself as a transitive predicate is not translated into English with HAVE (46). Conversely, English HAVE is consistently conveyed by Äiwoo speakers by using a possessed DP as the subject of an existential predicate (47). This is a strategy attested cross-linguistically, for example in Nepali and Avar (Stassen 2009, Sect. 4.1).

- (46) boat nugu.boat POSS:TO.1MIN'The boat is mine.'
- (47) [boat nugu]_{DP} i-to. boat POSS:TO.1MIN ASP-exist 'I have a boat.' (Lit. 'A boat of mine exists.')

The idea in this section is to consider whether one could capitalize on the semantics and syntax of POSS to explain why Äiwoo uses the particular construction in (47) to express the equivalent of HAVE, instead of leaving this as a coincidence. However, the reader should note that these ideas are quite speculative and tentative.

Most prominently POSS differs from HAVE is in not sharing the latter's definiteness effect. An old insight in the literature is that HAVE poses some restrictions on

²¹Interestingly, Abner (2012, 2013) proposes that ASL POSS has the opposite argument structure of Äiwoo POSS, with the possessum c-commanding the possessor. An anonymous reviewer highlights how it is an interesting question how and why this is possible, especially given a strict conception of UTAH (Baker 1988). However, I leave this as an issue for future research.

the kind of objects it can take (Keenan 1987; Landman and Partee 1987; Szabolcsi 1994; Iatridou 1995; Partee 1999, 2004; Sæbø 2009). More specifically, there is a definiteness effect, similar to that found with existential predicates (Milsark 1974, 1977; Barwise and Cooper 1981; though see Myler 2016, 328–336 for a critique of the idea that the two effects are the same). Simplifying: under its ordinary ownership reading, HAVE cannot take objects containing a strong quantifier (in the sense of Milsark 1974, 1977), such as definite descriptions, demonstratives, and universal quantifiers (48).

- (48) HAVE's definiteness effect
 - a. Do you see all the antiques in this room? I own/*have them. (Iatridou 1995, 197)
 - b. John has *the/*that/*every sister. (Partee 2004, 282)

According to a number of analyses of this phenomenon (see references above), the fact that HAVE shares this effect with existential predicates is no coincidence but is simply a consequence of the fact that HAVE underlyingly contains an existential predicate.

Differently from HAVE, Äiwoo POSS clearly has no problems taking definite objects. In both (49a, b) the object of POSS (bracketed) is marked by a demonstrative, and thereby it is unambiguously definite. In (50), moreover, the object of POSS is a null pronoun ('it,' referring to a baby), again thereby definite.

(49) POSS with a theme carrying a demonstrative

- a. [täpilo enge] numo.
 bowl this POSS:DR.1MIN
 'This bowl is mine.'^(E) (Lit. 'I POSS this bowl.')
- b. [ile dekilingä enge] nä-ji.
 PROX food this POSS:FO-12MIN
 'This food is ours (mine and yours).' (Lit. 'We (you and I) POSS this food.')
- (50) POSS with a null pronominal object
 nou-de-le mo na-malei-wâ-ngo-le.
 POSS:GE-12AUG-UA but IRR-look.after-DIR3-1AUG-UA
 (Context: A man and his wife can't have children, so he asks a couple to let him adopt their newborn.) 'It will be ours (us three.INCL), but we (two.EXCL) will raise it for you.'

Under the analysis presented in this paper POSS, differently from HAVE, simply lacks any existential import at all. The semantic content of POSS, like other possessive elements attested in more familiar languages (like English 's), would just be that two DPs are in a context-dependent kind of relation with each other (i.e. "possession," in all its semantic variety). Given the classical explanation of the definiteness effect, the fact that POSS does not have an existential predicate inside it would make it compatible with definite objects. Furthermore, since POSS does not contain an existential predicate, to convey something like HAVE an existential predicate simply must be added, as in (47).

The seemingly relatively free definiteness properties of Äiwoo POSS might be a consequence of the size of the nominal constituents it takes as arguments. Consider the traditional analysis for the English Saxon genitive compared to the structure I propose for POSS, repeated in (51). In English, while the possessor is a DP, the possessum is an NP (or at least something smaller than a DP). In Äiwoo, there is no reason to doubt that both the possessor and the possessum can be of the same size.

(51) a. [DP DP_{POSSESSOR} ['s NP_{POSSESSUM}]] b. [vP DP_{POSSESSOR} [v DP_{POSSESSUM}]]

Given the smaller size of the possessum in English, we might expect restrictions on its definiteness value. This, of course, should not be the case in Äiwoo, where both DPs' definiteness should in principle be able to vary freely.²²

8 Theoretical and cross-linguistic implications

This paper's main issue is the mapping between possession and syntactic categories. I have shown that in Äiwoo, DP-internal possession is structurally derived from clausal possession. Such an analysis is potentially significant when seen from the perspective of proposed syntactic universals connected to possessive structures. An influential proposal holds that languages in general do the opposite of Äiwoo: clausal possession, like HAVE, is to be derived from an underlying nonverbal constituent. Important pieces of work arguing in this direction are Freeze (1992), Kayne (1993), and Szabolcsi (1981, 1983, 1994).

In a series of papers, Szabolcsi (1981, 1983, 1994) proposes that Hungarian possessive clauses are derived from an underlying DP constituent. Simplifying: the possessed DP in (52a) has the dative possessor in a high specifier position (ccommanding the possessum), argued to be parallel to that of a clausal subject. From here, the possessor can be extracted, to create a clausal possession structure (52b).

- (52) a. Nominal possession (Szabolcsi 1994, 180; glosses from Myler 2016, Sect. 2.2.1)
 Mari-nak a kalap-ja-i-Ø
 Mari-DAT the hat-POSS-PL-3SG
 'Mari's hats'
 - b. Predicative possession (Szabolcsi 1994, 223; my annotations)

Mari-nak van-nak [$_$ kalap-ja-i- \varnothing]. Mari-DAT be-3PL hat-POSS-PL-3SG 'Mari has hats.'

Freeze (1992) extends this idea, arguing that this is actually a language universal: in all languages, clausal predicative possession (HAVE and its cross-linguistic equiva-

 $^{^{22}}$ This is related to the issue of "Possessor Dominance" (Chung 2008), the effect by which the global definiteness of a possessed DP (in English) is determined by the definiteness of the possessor (see Woisetschlaeger 1983; Adger 2013, Sects. 5.3–5.4). This effect, however, is not universal, as Chung shows based on data from Māori and Chamorro.

lents, including locative constructions like 'be at') is based on an underlying nonverbal constituent. Freeze proposes that the universal underlying structure is that of a locative PP, where the possessum c-commands the possessee (53a). Different surface structures that semantically correspond to HAVE are derived by moving different constituents to the subject position (spec,IP). To derive HAVE, the possessor moves to the subject position, and P head-moves into I; the so-formed complex head is spelled out as HAVE. This contrasts with Kayne (1993), the main focus of which is to account for HAVE and BE as auxiliary verbs; however, it contains an analysis of possessive HAVE, which is similar in spirit to Freeze's. The proposed underlying structure is (53b). The element notated as D/P is a "prepositional determiner." HAVE is derived by raising the possessor DP to the subject position (passing through spec,DP), and incorporating D/P into the copula BE, which is then spelled out as HAVE. Note that the asymmetric c-command relation between possessor and possessum is the same as Szabolcsi's, and the opposite of Freeze's.



(53) a. Proposed universal underlying structure (Freeze 1992, 558)²³

- LOCATION/POSSESSOR
- b. Proposed underlying structure (elaborated from Kayne 1993, 7)



 $^{^{23}}$ The tree is as shown in Myler (2016, 113), in a slightly modernized version compared to the original. Freeze sets aside the Hungarian structure in (52b), as it cannot be derived from (53a). See also den Dikken (1999) for a proposal as to how to derive the Hungarian construction from Freeze's (1992) structure.

The three approaches just very briefly reviewed can be summarized as in (54), at least for what is relevant to the issues in this paper (X » Y = X c-commands Y).

- (54) Proposed underlying structures for predicative possession
 - a. Szabolcsi (1981, 1983, 1994): DP; possessor » possessum (Hungarianspecific)
 - b. Freeze (1992): PP; possessum » possessor (universal)
 - c. Kayne (1993): DP/PP; possessor » possessum

Freeze's proposal specifically aims to derive all clausal possession from one universal underlying structure. More recently it has been argued that this is untenable. Levinson (2011) analyzes the Icelandic *vera með* 'be with' construction and concludes that it is impossible to derive this construction from Freeze's underlying argument structure (53a). Therefore, that structure cannot be universal. A similar claim is made by Boneh and Sichel (2010), who argue that various possessive constructions in Palestinian Arabic are derived from several different underlying argument structures. They make a theoretical point that's rather similar to mine: these structures *should* be able to exist given what UG allows, so we should not be surprised to find them. Finally, Myler (2016)—based on novel data from closely related varieties of Quechua—also argues that not all possessive constructions across languages can be universally derived from the same underlying structure, contra Freeze (1992) and Kayne (1993).

There is an obvious tension between what I claim and a Freezian/Kaynian universalist approach. Their claim is that clausal possession is derived from a nonclausal constituent (PP or DP). In Äiwoo, the exact opposite happens: DP-internal possession is derived from a transitive clausal structure. Äiwoo is then incompatible with the analyses sketched so far. Freeze's approach is ruled out immediately, because the asymmetric c-command relation between the two arguments is reversed: in Äiwoo, the possessor c-commands the possessum, whereas Freeze assumes the opposite configuration. Moreover, Szabolcsi's and Kayne's analyses are also very hard to square with the Äiwoo evidence. This can be shown schematically as in (55). Szabolcsi and Kayne argue that possessive clauses are derived from an underlying DP; in Äiwoo, the opposite is true. Therefore, a Szabolcsi/Kayne-style analysis of Äiwoo would entail a sort of Duke of York syntactic derivation (55c). The transitive clausal structure I assume to be at the base of possessed DPs would itself derive from a DP. Although such a derivation can plausibly be implemented mechanically, it is unclear to me how it could be motivated.

- (55) Derivational history of possessive structures
 - a. Szabolcsi/Kayne: DP \rightarrow clause
 - b. Äiwoo: clause \rightarrow DP
 - c. Äiwoo under Szabolcsi/Kayne: DP \rightarrow clause \rightarrow DP

Given this tension, the logical possibilities at this point are two. On one hand, we could follow Levinson (2011) and Myler (2016) and conclude that a Szabolcsi/ Freeze/Kayne-style analysis cannot hold universally. Äiwoo is yet another language that cannot be reduced to the same underlying structure proposed for English, Hungarian, and so on. Possession is not universally tied to a specific syntactic category, but may simply vary.

The only logically possible alternative analysis, if we want to maintain a universalist approach, is to entertain the hypothesis that all languages, in fact, work like Äiwoo, and that our analyses of English, Hungarian, and so on are wrong. However, I argue that this is untenable, using the same logic that I used for Äiwoo. I propose that in some languages, possessives *cannot* receive an Äiwoo-style analysis.

The concrete case study I offer is Passamaquoddy (Algonquian; Maine, USA and New Brunswick, Canada), although the same arguments extend to most other Algonquian languages. The data below is based on Francis and Leavitt (2008).²⁴ Passamaquoddy is a useful language to look at in this context because its verbs are highly inflected and, crucially, look rather different in main clauses versus in relative clauses. It then becomes easy to see that possessed DPs simply cannot involve relativization, because the morphology surfacing in possessive constructions is clearly not the same as that on verbs in relative clauses.

First, let us take a look at what possessed DPs look like in Passamaquoddy. In what follows, to aid reading I mark morphology that indexes the possessor's/subject's features with **bold type**, whereas affixes indexing the possessum's/object's features are <u>underlined</u>. In a possessed DP (56), there will be a prefix indexing the possessor (k(t)-second person), and—for certain φ -values—a suffix as well (-*onnu* 1PL).²⁵ Finally, if the noun itself (the possessum) is plural, a plural suffix will be added (here -k). For some nouns, an additional 'possessed' suffix -*om* is optionfally used (56b).

(56) Possessed DPs
a. k-posum-onnu-k
2-cat-1PL-<u>3PROX.PL</u>
'Our.INCL cats'
b. kt-emqan-om-onnu-k
2-spoon-POSS-1PL-<u>3PROX.PL</u>
'Our.INCL spoons'

Crucially, this morphology looks clearly different from that found on verbs in relative clauses. In Passamaquoddy—and most other Algonquian languages—verbs in relative clauses are consistently inflected with so-called "conjunct" morphology (Bloom-field 1946; Brittain 2001; Bruening 2001, 2004; Richards 2004; Cook 2008; Oxford 2014), different from the "independent" morphology found for example on main clause verbs. The conjunct verb form in (57) has the same combination of subject and object as the noun phrases in (56) have possessor and possessum: respectively, 12PL and 3PROX.PL. The difference in morphology between this verb and the possessed nouns is glaring: here we have no prefix, and the two arguments are jointly indexed by one portmanteau suffix. Even the final suffix *-ik*, although similar to the one found on nouns, still shows different morphophonology, and moreover it is optional (something it never is on nouns).²⁶

²⁴The language is also referred to as Malecite/Maliseet or Wolastoqey. These names are often combined with "Passamaquoddy" using a hyphen.

²⁵Across Algonquian, first person inclusive is often formed by using both first person plural morphology and second person morphology.

²⁶Possessive morphology is in fact similar to a type of verbal morphology, but it is the "wrong" type for an Äiwoo-style analysis to work. In fact, it is very similar (though not identical) to "independent" verbal

(57) Relative clause verbs Nemiy-<u>oq(-ik)</u>.
IC.see.TA-<u>12>3.CNJ-3PROX.PL</u>
'We.INCL see <u>them</u>.'/'[The ones] that we.INCL see'

The bottom line is that possessed nouns cannot be reduced in any way to, and cannot contain, clausal structure. An Äiwoo-style analysis of Passamaquoddy possession is untenable, and hence, the Äiwoo possessive construction cannot be universal either.

9 Conclusion

Possession in Oceanic languages, though fairly well-described in the typological literature (Lichtenberk 2009a,b), is largely uncharted territory for generative syntax, especially outside of certain better-studied Polynesian languages (though see den Dikken 2003; Pearce 2010; von Prince 2012, 2016; among others). This paper presents a study of Äiwoo, the empirical contribution of which is to show that all possessive structures in this language involve a transitive UV verb POSS. This includes not only predicative possession (i.e. clausal possession) but also DP-internal possession, which involves relativization. The evidence for this comes from three properties that are identical in possessives and in UV verbs: (i) word order and syntax; (ii) a particular agreement pattern; (iii) voice concord morphology on modifiers.

The theoretical contribution bears on the mapping between possession and syntactic categories. In English, Hungarian, and other better-studied languages, possession is part of the extended nominal projection (e.g. the Saxon genitive), and even what prima facie seem to be instances of clausal/verbal possession (HAVE and similar constructions) has been analyzed as deriving from an underlying nonverbal constituent. I argue that in Äiwoo, in contrast, possession is part of the *verbal* extended projection, to the point that even possessed DPs are derived from (or built on top of) clausal structure. The existence of the Äiwoo structure thus fills a gap predicted by the theory, as there is no principled reason, grounded in UG, why an inherently verbal possessive head should not exist. Moreover, although languages like Äiwoo do exist, it can be shown that not all languages are amenable to an Äiwoo-style analysis. In some other languages, like Passamaquoddy, possessed DPs demonstrably *cannot* contain clausal structure. This further supports the idea that possession cannot be exclusively mapped onto a unique syntactic category, but rather this mapping varies cross-linguistically.

Appendix A: Full possessive paradigms

In this appendix, I report the full φ -paradigms of the possessive classifiers and of various classes of inalienable roots (data from Næss 2006, 2021a). First, Table 5 reports the paradigms for all possessive classifiers. Then, Tables 6–8 show various types of

inflection. The reason is diachronic, as this inflectional morphology originates from nominalizations in Pre-Proto-Algonquian (Goddard 1974, 2007; Proulx 1982; Oxford 2024b), but at the synchronic level the two morphological sets are nonetheless distinct.

	GENERAL	FOOD	DRINK	BETEL NUT	UTENSILS	LOCATION
1min	nou	nugo	numo	da-no	nugu	to
12min	nou-ji	nä-ji	numo-ji	dä-ji	nugu-ji	to-ji
2min	no-mu	na-mu	numo-mu	da-mu	nugu-mu	to-mu
3min	no	na	numä	da	nogo	tä
1ua	nou-ngo-le	nugo-ngo-le	numo-ngo-le	da-ngo-le	nugu-ngo-le	to-ngo-le
12UA	nou-de-le	nä-de-le	numo-de-le	dä-de-le	nugu-de-le	to-de-le
2ua	no-mi-le	nä-mi-le	numo-mi-le	dä-mi-le	nugu-mi-le	to-mi-le
3ua	no-i-le	na-i-le	numä-i-le	da-i-le	nogo-i-le	tä-i-le
1AUG	nou-ngo(pu)	nugo-ngo(pu)	numo-ngo(pu)	da-ngo(pu)	nugu-ngo(pu)	to-ngo(pu)
12aug	nou-de	nä-de	numo-de	dä-de	nugu-de	to-de
2aug	no-mi	nä-mi	numo-mi	dä-mi	nugu-mi	to-mi
3aug	no-i	na-i	numä-i	da-i	nogo-i	tä-i

 Table 5
 Possessive classifiers, full paradigm (Næss 2006, 273)

Table 6 1 = 12 = 2 = 3 ('body')

	MIN	UA	AUG
1	nyisi	nyisi-ngo-le	nyisi-ngo(pu)
12	nyisi-ji	nyisi-de-le	nyisi-de
2	nyisi-mu	nyisi-mi-le	nyisi-mi
3	nyisi	nyisi-i-le	nyisi-i

Table 7 $\{1, 12\} \neq \{2, 3\}$ ('daughter')

	MIN	UA	AUG	
1	sipeu	sipeu-ngo-le	sipeu-ngo(pu)	
12	sipeu-ji	sipeu-de-le	sipeu-de	
2	sipe-mu	sipe-mi-le	sipe-mi	
3	sipe	sipe-i-le	sipe-i	

inalienable root paradigms. Almost all of these paradigms show an alternation between two different stems. The distribution of these two stems can be characterized in terms of person features (58); number does not seem to play a role. Apart from pattern (58a), all these are also found in inalienable root paradigms.

(58) Stem alternation patterns in possessive paradigms

- a. $\{1\} \neq \{12, 2, 3\}$: FOOD (+ possible vowel harmony)
- b. $\{1, 12\} \neq \{2, 3\}$: GENERAL; also Table 7
- c. $\{1, 12, 2\} \neq \{3\}$: DRINK, UTENSILS, LOCATION; also Table 8
- d. 1 = 12 = 2 = 3: BETEL NUT (+ possible vowel harmony); also Table 6

Table 8 $\{1, 12, 2\} \neq \{3\}$

	'Mouth'	'Man's sister'	'Man's brother'	'Maternal uncle'	'Mother'	'Maternal grandma'
	$u\sim e$	$ou \sim e$	$i\sim e^{\ast}$	$u\sim \ddot{a}^{\dagger}$	$o\sim \ddot{a}$	$u \sim o$
1min	nedu	siwou	gisi	giângu	iso	ipebu
12min	nedu-ji	siwou-ji	gisi-ji	giângu-ji	iso-ji	ipebu-ji
2min	nedu-mu	siwou-mu	gisi-mu	giângu-mu	iso-mu	ipebu-mu
3min	nede	siwe	gite	giängä	isä	ipebo
1ua	nedu-ngo-le	siwou-ngo-le	gisi-ngo-le	giângu-ngo-le	iso-ngo-le	ipebu-ngo-le
12ua	nedu-de-le	siwou-de-le	gisi-de-le	giângu-de-le	iso-de-le	ipebu-de-le
2ua	nedu-mi-le	siwou-mi-le	gisi-mi-le	giângu-mi-le	iso-mi-le	ipebu-mi-le
3ua	nede-i-le	siwe-i-le	gite-i-le	giängä-i-le	isä-i-le	ipebo-i-le
1AUG	nedu-ngo(pu)	siwou-ngo(pu)	gisi-ngo(pu)	giângu-ngo(pu)	iso-ngo(pu)	ipebu-ngo(pu)
12aug	nedu-de	siwou-de	gisi-de	giângu-de	iso-de	ipebu-de
2aug	nedu-mi	siwou-mi	gisi-mi	giângu-mi	iso-mi	ipebu-mi
3aug	nede-i	siwe-i	gite-i	giängä-i	isä-i	ipebo-i

* The consonant alternation is predictable, as /t/ and /s/ consistently neutralize to /s/ before /i/.

[†] The vowel alternation in the first syllable ($gi\hat{a} \sim gi\ddot{a}$ -) is predictable in terms of vowel harmony.

Table 6 shows a paradigm where all forms are built on the same stem (58d). In Table 7, on the other hand, we see the pattern in (58b), with first person forms (both exclusive and inclusive) contrasting with second/third person forms. Finally, other nouns show the alternation pattern in (58c), where all participant forms share one stem and third person forms have a different one. Exactly how the two stems are different, however, varies. The consistent generalization is that the final vowel in the third person stem is lower than the one in the participant stem. All known alternations are shown in Table 8.

Appendix B: UV agreement in 1AUG > 2 configurations

In this paper I have proposed the following generalization regarding the distribution of object agreement on UV verbs (repeated from (18)):

- (59) Object agreement is found iff:
 - a. Subject = first person; object = second person
 - b. Subject = 3MIN; object = non-3MIN

As mentioned in Sect. 3.1, this generalization is slightly different from the one proposed in Næss (2006, 2015, et seq.), and analyzed in a Minimalist framework in Roversi (2020). Specifically, the first clause (59a) is different. In those earlier works, the generalization is that only 1MIN > 2 configurations trigger object agreement; 1AUG > 2 configurations block it. However, since then new data has emerged showing that 1AUG > 2 is also one of the configurations that trigger object agreement. The older generalization was formulated on the basis of this one single naturally occurring example:

(60) go ku-wobii-ngopu=to=we iumu, ä jelâ nugu-ngo for IPFV-follow.UV-1AUG=TAM=PROX 2MIN and thing POSS:TO-1AUG i-meli-du-kâ-ngo.
ASP-let.go.UV-all-DIR3-1AUG
'We have left everything to follow you.'^(M10:28) (Lit. 'In order for us to follow you, we have left all our things.')

However, both a small number of naturally occurring attestations and elicited examples, such as (61) and (62), show that 1AUG > 2 configurations do have object agreement. Verb forms like these are also reliably produced and accepted in elicitation contexts.

- (61) i-kää**-ngee-mu.** ASP-know.UV**-1AUG-2MIN** 'We know you.'^(M1:24)
- (62) ki-viteiâ-ngee-mu=to.
 IPFV-sell.UV-1AUG-2MIN=TAM
 'We will sell you' (said by parents to their child as a threat for bad behavior).

As for the form *-ngee* itself, it is reasonable to believe it to be a 1AUG marker. 1MIN has the allomorphs *-no* and *-nee*, where the former is the default and the latter is only used before a second person object marker. 1AUG has *-ngo(pu)* as its default allomorph. Therefore, it seems plausible to assume that *-ngee* would be the 1AUG counterpart of 1MIN *-nee*. Schematically, *-no : -nee = -ngo(pu) : -ngee*.

The original data point (60) shows no object agreement because the first clause, introduced by *go* 'for, so that,' is in fact an object cleft ('[the one we follow] is you'). This is confirmed by the presence of the PROX clitic =*we* intervening between the verb and the object pronoun. Although the proximal/distal clitics = $C\hat{a}/=Ce$ have a rather complex distribution, (i) they do not intervene between a UV verb and a pronominal object, and (ii) they reliably occur in clefting contexts.

This revision of the empirical landscape prompts a reconsideration of the theoretical proposal in Roversi (2020), since this was based on a faulty generalization. In fact, it is not immediately clear to me how to capture the now established distribution of object agreement in Äiwoo within current Minimalist theories of agreement. I leave this interesting puzzle open for future inquiry. However, the broader theoretical claim of Roversi (2020) that probes can have a disjunctive satisfaction condition has since been confirmed by work on other languages. Even just limiting the empirical domain to φ -agreement, Bondarenko and Zompì (2021) analyze agreement in Svan (Kartvelian) as showing disjunctive satisfaction. Moreover, Oxford (2024a) proposes various types of probes with a disjunctive satisfaction condition to model agreement phenomena in a series of Algonquian languages.

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References

- Abner, Natasha. 2012. There once was a verb: The predicative core of possessive and nominalization structures in American Sign Language. PhD diss., University of California, Los Angeles.
- Abner, Natasha. 2013. Gettin' together a POSSe: The primacy of predication in ASL possessives. Sign Language and Linguistics 16(2): 125–156.
- Abney, Steven. 1987. The noun phrase in its sentential aspect. PhD diss., Massachusetts Institute of Technology.
- Adger, David. 2013. A syntax of substance. Cambridge: MIT Press.
- Aikhenvald, Alexandra Y. 2000. *Classifiers: A typology of noun categorization devices*. Oxford: Oxford University Press.
- Amith, Jonathan D., and Thomas C. Smith-Stark. 1994. Predicate nominal and transitive verbal expressions of interpersonal relations. *Linguistics* 32(3): 511–548. https://doi.org/10.1515/ling.1994.32.3.511.
- Baker, Mark C. 1988. *Incorporation: A theory of grammatical function changing*. Chicago: University of Chicago Press.
- Barwise, Jon, and Robin Cooper. 1981. Generalized quantifiers and natural language. *Linguistics and Philosophy* 4(2): 159–219. https://doi.org/10.1007/BF00350139.
- Bhatt, Rajesh. 2002. The raising analysis of relative clauses: Evidence from adjectival modification. Natural Language Semantics 10(1): 43–90. https://doi.org/10.1023/A:1015536226396.
- Bjorkman, Bronwyn. 2011. BE-ing default: The morphosyntax of auxiliaries. PhD diss., Massachusetts Institute of Technology. https://dspace.mit.edu/handle/1721.1/68911.
- Bjorkman, Bronwyn. 2017. Singular *they* and the syntactic representation of gender in English. *Glossa: A Journal of General Linguistics* 2(1): 1–80. https://doi.org/10.5334/gjgl.374.
- Bloomfield, Leonard. 1946. Algonquian. In *Linguistic structures of Native America*, ed. Harry Hoijer, 85–129. New York: Viking Fund Publications in Anthropology.
- Bobaljik, Jonathan David. 1995. Morphosyntax: The syntax of verbal inflection. PhD diss., Massachusetts Institute of Technology. https://dspace.mit.edu/handle/1721.1/11351.
- Bondarenko, Tatiana, and Stanislao Zompì. 2021. Leftover agreement: Spelling out Kartvelian number. Proceedings of WCCFL 38: 65–73.
- Boneh, Nora, and Ivy Sichel. 2010. Deconstructing possession. *Natural Language and Linguistic Theory* 28(1): 1–40. http://www.jstor.org/stable/40608169.
- Branigan, Phil, and Douglas Wharram. 2019. A syntax for semantic incorporation: Generating low-scope indefinite objects in Inuktitut. *Glossa: A Journal of General Linguistics* 4(1): 92. https://doi.org/10. 5334/gjgl.834.

- Brittain, Julie. 2001. The morphosyntax of the Algonquian conjunct verb: A minimalist approach. New York: Garland.
- Bruening, Benjamin. 2001. Syntax at the edge: Cross-clausal phenomena and the syntax of Passamaquoddy. PhD diss., Massachusetts Institute of Technology.
- Bruening, Benjamin. 2004. Two types of wh-scope marking in Passamaquoddy. *Natural Language and Linguistic Theory* 22(2): 229–305. https://doi.org/10.1023/B:NALA.0000015793.52445.4e.
- Bugaeva, Anna, Johanna Nichols, and Balthasar Bickel. 2022. Appositive possession in Ainu and around the Pacific. *Linguistic Typology* 26(1): 43–88. https://doi.org/10.1515/lingty-2021-2079.
- Chomsky, Noam. 1957. Syntactic structures. The Hague: Mouton and Co.
- Chomsky, Noam. 1977. On Wh-movement. In *Formal syntax*, eds. Peter Culicover, Thomas Wasow, and Adrian Akmajian, 71–132. New York: Academic Press.
- Chomsky, Noam. 1995. The Minimalist Program. Cambridge: MIT Press.
- Chung, Sandra. 2008. Possessors and definiteness effects in two Austronesian languages. In *Quantifica*tion: A cross-linguistic perspective, ed. Lisa Matthewson, 179–224. Bingley: Emerald.
- Chung, Sandra, and William A. Ladusaw. 2004. Restriction and saturation. Cambridge: MIT Press.
- Compton, Richard, and Christine Pittman. 2010. Word-formation by phase in Inuit. *Lingua* 120(9): 2167–2192. https://doi.org/10.1016/j.lingua.2010.03.012.
- Conrod, Kirby. 2019. Pronouns raising and emerging. PhD diss., University of Washington.
- Conrod, Kirby. 2022a. Abolishing gender on D. Canadian Journal of Linguistics/Revue canadienne de linguistique 67(3): 216–241. https://doi.org/10.1017/cnj.2022.27.
- Conrod, Kirby. 2022b. Variation in English gendered pronouns: Analysis and recommendations for ethics in linguistics. *Journal of Language and Sexuality* 11(2): 141–164. https://doi.org/10.1075/jls.20026. con.
- Cook, Clare. 2008. The syntax and semantics of clause-typing in Plains Cree. PhD diss., University of British Columbia.
- Corbett, Greville G. 2000. Number. Cambridge: Cambridge University Press. https://doi.org/10.1017/ CBO9781139164344.
- Cysouw, Michael. 2003. The paradigmatic structure of person marking. Oxford: Oxford University Press.
- den Dikken, Marcel. 1999. On the structural representation of possession and agreement: The case of (anti-)agreement in Hungarian possessed nominal phrases. In *Crossing boundaries*, ed. István Kenesei, 137–178. Amsterdam: Benjamins.
- den Dikken, Marcel. 2003. The structure of the noun phrase in Rotuman. Munich: LINCOM Europa.
- Evans, Nicholas. 2000. Kinship verbs. In Approaches to the typology of word classes, eds. Petra M. Vogel and Bernard Comrie, 103–172. Berlin: De Gruyter Mouton. https://doi.org/10.1515/9783110806120. 103.
- Francis, David A., and Robert M. Leavitt. 2008. Peskotomuhkati Wolastoqewi latuwewakon: A Passamaquoddy-Maliseet dictionary. Orono: University of Maine Press. https://pmportal.org/ browse-dictionary.
- Freeze, Ray. 1992. Existentials and other locatives. Language 68(3): 553-595. https://doi.org/10.2307/ 415794.
- Goddard, Ives. 1974. Remarks on the Algonquian independent indicative. International Journal of American Linguistics 40(4): 317–327. https://doi.org/10.1086/465328.
- Goddard, Ives. 2007. Reconstruction and history of the independent indicative. *Papers of the Algonquian Conference* 38: 207–271. https://ojs.library.carleton.ca/index.php/ALGQP/article/view/339.
- Halle, Morris, and Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In *The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, eds. Ken Hale and Samuel Jay Keyser, 111–176. Cambridge: MIT Press.
- Halle, Morris, and Alec Marantz. 1994. Some key features of Distributed Morphology. MIT Working Papers in Linguistics 21: 275–288.
- Harbour, Daniel. 2016. Impossible persons. Cambridge: MIT Press.
- Iatridou, Sabine. 1995. To have and have not: On the deconstruction approach. *Proceedings of WCCFL* 14: 185–201.
- Jackendoff, Ray. 1977. X-syntax. Cambridge: MIT Press.
- Kayne, Richard S. 1993. Toward a modular theory of auxiliary selection. Studia Linguistica 47(1): 3-31.
- Keenan, Edward L. 1987. A semantic definition of "Indefinite NP." In *The representation of (in)definite*ness, eds. Eric J. Reuland and Alice G. B. ter Meulen, 286–317. Cambridge: MIT Press.
- Koenig, Jean-Pierre, and Karin Michelson. 2010. Argument structure of Oneida kinship terms. International Journal of American Linguistics 76(2): 169–205. https://doi.org/10.1086/652265.

- Koenig, Jean-Pierre, and Karin Michelson. 2023. Semantic transparency and Oneida morphological parts of speech. *Linguistics* 61: 197–230. https://doi.org/10.1515/ling-2021-0188.
- Landman, Fred, and Barbara H. Partee. 1987. Weak NPs in HAVE sentences. Unpublished abstract, University of Massachusetts Amherst.
- Lasnik, Howard. 1981. Restricting the theory of transformations: A case study. In *Explanation in linguistics: The logical problem of language acquisition*, eds. Norbert Hornstein and David Lightfoot, 152–173. London: Longman.
- Lees, Robert B. 1960. The grammar of English nominalizations. Mouton: The Hague.
- Lees, Robert B. 1961. The constituent structure of noun phrases. American Speech 36(3): 159–168. https:// doi.org/10.2307/453514.
- Levinson, Lisa. 2011. Possessive WITH in Germanic: HAVE and the role of P. Syntax 14(4): 355–393. https://doi.org/10.1111/j.1467-9612.2011.00159.x.
- Lichtenberk, Frantisek. 2009a. Attributive possessive constructions in Oceanic. In *The expression of possession*, ed. William McGregor, 249–291. Berlin: Mouton de Gruyter.
- Lichtenberk, Frantisek. 2009b. Oceanic possessive classifiers. Oceanic Linguistics 48(2): 379–402. https:// doi.org/10.1353/ol.0.0054.
- Lynch, John, Malcolm D. Ross, and Terry Crowley. 2002. The Oceanic languages. Richmond: Curzon.
- Milsark, Gary Lee. 1974. Existential sentences in English. PhD diss., Massachusetts Institute of Technology.
- Milsark, Gary Lee. 1977. Towards an explanation of certain peculiarities of the existential construction in English. *Linguistic Analysis* 3: 1–29.
- Myler, Neil. 2016. Building and interpreting possession sentences. Cambridge: MIT Press.
- Næss, Åshild. 2006. Bound nominal elements in Äiwoo (Reefs): A reappraisal of the "multiple noun class systems." Oceanic Linguistics 45(2): 269–296. http://www.jstor.org/stable/4499965.
- Næss, Åshild. 2012. Cutting and breaking in Äiwoo: Event integration and the complexity of lexical expressions. *Cognitive Linguistics* 23(2): 395–420. https://doi.org/10.1515/cog-2012-0012.
- Næss, Åshild. 2015. Voice at the crossroads: Symmetrical clause alternations in Äiwoo, Reef Islands, Solomon Islands. Oceanic Linguistics 54(1): 270–307. https://muse.jhu.edu/pub/5/article/586715.
- Næss, Åshild. 2017. A short dictionary of Äiwoo. Canberra: Asia-Pacific Linguistics. https://openresearchrepository.anu.edu.au/handle/1885/112469.
- Næss, Åshild. 2018. Plural-marking strategies in Äiwoo. Oceanic Linguistics 57(1): 31–62. http://www.jstor.org/stable/26779820.
- Næss, Åshild. 2021a. Notes on direct possession in Äiwoo. Ms., University of Oslo.
- Næss, Åshild. 2021b. Voice and valency morphology in Äiwoo. Oceanic Linguistics 60(1): 160–198. https://doi.org/10.1353/ol.2021.0005.
- Næss, Åshild. 2024. Voice and transitivity in Äiwoo and Engdewu: A case study in alignment change. Studies in Language 1–36. https://doi.org/10.1075/sl.23034.nae.
- Næss, Åshild, and Brenda H. Boerger. 2008. Reefs-Santa Cruz as Oceanic: Evidence from the verb complex. Oceanic Linguistics 47(1): 185–212. http://www.jstor.org/stable/20172343.
- Newman, Elise. 2023. Probing for the closest DP: A reply to Branan and Erlewine 2022. *Linguistic Inquiry* 1–23. https://doi.org/10.1162/ling_a_00501.
- Oxford, Will. 2014. Microparameters of agreement: A diachronic perspective on Algonquian verb inflection. PhD diss., University of Toronto. https://tspace.library.utoronto.ca/handle/1807/68125.
- Oxford, Will. 2024a. Probe specification and agreement variation: Evidence from the Algonquian inverse. *Linguistic Inquiry* 55(3): 489–535. https://doi.org/10.1162/ling_a_00478.
- Oxford, Will. 2024b. The Algonquian inverse. Oxford: Oxford University Press.
- Partee, Barbara H. 1999. Weak NPs in HAVE sentences. In JFAK, a liber amicorum for Johan van Benthem on the occasion of his 50th birthday, eds. Jelle Gerbrandy, Maarten Marx, Maarten de Rijke, and Yde Venema, 39–57. Amsterdam: University of Amsterdam.
- Partee, Barbara H. 2004. Weak NPs in have-sentences. In *Compositionality in formal semantics*, ed. Barbara H. Partee, 282–291. Oxford: Wiley-Blackwell. https://onlinelibrary.wiley.com/doi/abs/10.1002/ 9780470751305.ch14.
- Pearce, Elizabeth. 2010. Possession syntax in Unua DPs. In Austronesian and theoretical linguistics, eds. Raphael Mercado, Eric Potsdam, and Lisa de Mena Travis, 141–162. Amsterdam: Benjamins. https:// doi.org/10.1075/la.167.10pea.
- Proulx, Paul. 1982. The origin of the absolute verbs of the Algonquian independent order. International Journal of American Linguistics 48(4): 394–411. https://doi.org/10.1086/465749.
- Richards, Norvin. 2004. The syntax of the conjunct and independent orders in Wampanoag. *International Journal of American Linguistics* 70(4): 327–368. https://doi.org/10.1086/429206.

- Ross, Malcolm, and Åshild Næss. 2007. An Oceanic origin for Äiwoo, the language of the Reef Islands? Oceanic Linguistics 46(2): 456–498. http://www.jstor.org/stable/20172324.
- Roversi, Giovanni. 2019. The morphosyntactic structure of the Äiwoo verb. MA thesis, University of Oslo. http://urn.nb.no/URN:NBN:no-72417.
- Roversi, Giovanni. 2020. How to satisfy probes: Person/number hierarchy effects in Äiwoo. *Proceedings* of NELS 50(3): 99–112.
- Roversi, Giovanni. 2024a. Condition C and anti-cataphora in Äiwoo. Talk presented at Generative Linguistics in the Old Word in Asia 14, Chinese University of Hong Kong, March 8, 2024.
- Roversi, Giovanni. 2024b. Exceptional Ā-extraction in Austronesian informs theories of voice systems. Talk presented at CLS 60, University of Chicago, April 27, 2024.
- Roversi, Giovanni, and Åshild Næss. 2019. Jespersen in the Reef Islands: Single versus bipartite negation in Äiwoo. Oceanic Linguistics 58(2): 324–352. https://muse.jhu.edu/pub/5/article/751107.
- Sæbø, Kjell Johan. 2009. Possession and pertinence: The meaning of *have. Natural Language Semantics* 17(4): 369–397. http://www.jstor.org/stable/23748676.
- Sande, Hannah. 2019. A unified account of conditioned phonological alternations: Evidence from Guébie. Language 95(3): 456–497. https://muse.jhu.edu/pub/24/article/733279.
- Sande, Hannah, Peter Jenks, and Sharon Inkelas. 2020. Cophonologies by ph(r)ase. *Natural Language and Linguistic Theory* 38(4): 1211–1261. https://doi.org/10.1007/s11049-020-09467-x.
- Sapir, Edward. 1917. Review of C. C. Uhlenbeck 1916. International Journal of American Linguistics 1: 86–90.
- Sauerland, Uli. 1998. On the making and meaning of chains. PhD diss., Massachusetts Institute of Technology.
- Schachter, Paul. 1973. Focus and relativization. Language 49(1): 19-46. https://doi.org/10.2307/412101.
- Singerman, Adam Roth. 2018. Negation as an exclusively nominal category. *Language* 94(2): 432–467. https://doi.org/10.1353/lan.2018.0022.
- Stassen, Leon. 2009. Predicative possession. Oxford: Oxford University Press.
- Szabolcsi, Anna. 1981. The possessive construction in Hungarian: A configurational category in a nonconfigurational language. Acta Linguistica Academiae Scientiarum Hungaricae 31: 261–289. http:// www.jstor.org/stable/44310514.
- Szabolcsi, Anna. 1983. The possessor that ran away from home. *The Linguistic Review* 3(1): 89–102. https://doi.org/10.1515/tlir.1983.3.1.89.
- Szabolcsi, Anna. 1994. The noun phrase. In *The syntactic structure of Hungarian*, eds. Ferenc Kiefer and Katalin É. Kiss, 179–274. San Diego: Academic Press.
- Vergnaud, Jean-Roger. 1974. French relative clauses. PhD diss., Massachusetts Institute of Technology.
- von Prince, Kilu. 2012. Nominal possession in Daakaka: Transitivizing vs. linking. *Proceedings of AFLA* 18: 156–170.
- von Prince, Kilu. 2016. Alienability as control: The case of Daakaka. Lingua 182: 69–87. https://doi.org/ 10.1016/j.lingua.2015.08.009.
- Woisetschlaeger, Erich. 1983. On the question of definiteness in "an old man's book." *Linguistic Inquiry* 14(1): 137–154. http://www.jstor.org/stable/4178313.
- Wu, Yvette Yi-Chi, Tamisha L. Tan, and Giovanni Roversi. 2023. Syntactic vs. morphological verbal concord across Austronesian. In *Proceedings of TripleAFLA: 9th TripleA workshop for semantic fieldworkers; 29th annual meeting of the Austronesian Formal Linguistics Association*, eds. Vera Hohaus, Jens Hopperdietzel, and Siena Weingartz, 104–118.
- Yuan, Michelle. To appear. Morphological conditions on movement chain resolution: Inuktitut noun incorporation revisited. *Natural Language and Linguistic Theory*.

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