The morphosyntactic structure of the Äiwoo verb

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Abstract

In the Oceanic language Äiwoo, verb forms can achieve rather extensive complexity, as illustrated in (1)-(2): the former contains 9 morphemes, among which three lexical roots, a voice-related marker repeated three times; the latter, a nominalized form, contains 10 morphemes, among which a causative, a voice marker, a directional suffix and two person markers.

(1) *ki-eâmole-wâtu-i-päko-i-mana-i-i*   *jii=le*
     IPFV-look.AV-COMP-UV.AGR-good-UV.AGR-very-UV.AGR-3AUG 3AUG=DEIC.PROX
     'They have to look after them properly'

(2) *de-nâ-wâ-singä-eâ-wâ-nee-mi=ä=ne*
     BN:thing-IRR-CAUS-lie-UV-DIR2-1MIN-2AUG=CV=DEIC.PROX
     'The thing I want to deceive you with'

All the Äiwoo data this thesis builds on derives from the documentational/descriptive and theoretical work of Åshild Næss. The main object of research of this thesis is precisely the morphosyntactic complexity of Äiwoo verb forms. I inquire into issues of affix order and the internal structure of these forms: which affixes are there, what is their behaviour, why are they in the order in which we find them, and how can their organization best be described and accounted for? Do complex verb forms have inner hierarchical structures, or are they built differently, e.g. following an arbitrary linear template, where different morphemes are assigned each to a specific slot? I argue that the behaviour and distribution of almost all morphemes occurring in Äiwoo verb forms can be accounted for on the basis of independent syntactic and semantic principles – apart from a single one, the circumstantial voice marker, realised as =*ä* in (2).

The present work aims to be of interest to linguists who place themselves both in the typological/functionalist tradition and the formalist/generative one. The questions outlined above have typological significance, as they inform us about what constitutes a possible morphosyntactic (verbal) system, and how complex words can be built; moreover, complex morphosyntactic structures such as these are better studied in e.g. North-American languages, known for their polysynthetic character, and less in Oceanic languages. In order to answer to those questions, I have developed a morphosyntactic model of the Äiwoo verb (and clause) within a generative minimalist framework, which incorporates notions from Distributed Morphology. This thesis constitutes the first study of a language of this geographical region and phylogenetic subgroup in a generative framework.

Acknowledgements

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List of abbreviations

#	number
π	person
φ	person and number
1/2/3	first/second/third person
12	first plus second person
A	more agentive argument of a two-place predicate
ABS	absolutive
ACC	accusative
ADDR	addressee
APPL	applicative
APPR	apprehensive
AOR	aorist (Ancient Greek)
AUG	augmented number
AV	actor voice
BN	bound noun
CAUS	causative
CLF	classifier (Ahtna)
COLL	collective
COM	comitative
COMP	comparative
CORE	core argument of a predicate (Tagalog)
CS	change of state
CV	circumstantial voice
DAT	dative
DEIC	deictic
DEF	definite (Balinese)
DEM	demonstrative
DIR	directional
DIRECT	direct (Plains Cree)
DIST	distal
DU	dual number
ERG	ergative
ETHDAT	ethical dative (Spanish, French)
FUT	future tense
GEN	genitive, general (Äiwoo possessives)
HESIT	hesitation
HOR	horizon of interest (Kabardian)
HORT	hortative
H.SUBJ	human subject (Slave)
INCEPT	inceptive aspect (Sekani)
IND	indicative mood
INS	instrumentalis
INTR	intransitive
INV	inverse
IMP	imperative
IPFV	imperfective
IRR	irrealis
LOC	locative
NEG	negation, negative
NMLZ	nominalizer
O	less agentive argument of a two-place predicate
OBL	oblique
PART	participant
PARTCL	particle
PASS	passive
PFV	perfective
PIE	Proto-Indo-European
PL	plural
POSS	possessive
POT	potential (Adyghe, West Greenlandic)
PREP	preposition
PREV	preverb (Ancient Greek)
PROG	progressive
PROH	prohibitive
PROX	proximal
PRS	present tense
PST	past tense
QUAL	qualifier (Ahtna, Sekani)
RECP	reciprocal (Bemba)
S	only argument of an intransitive predicate
s	"S" perfective-negative (Ahtna)
SBJV	subjunctive mood
SG	singular
SML	simulative (Adyghe)
SUBJ	subject
SURF	surface (Kabardian)
SVC	serial verb construction
THM	thematic prefix (Ahtna)
UA	unit-augmented number
UTEN	utensil possessive class
UV	undergoer voice
UV.AGR	undergoer voice agreement
VC	voice (Tagalog)

The question(s) to answer, how to answer, and why

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1.1 Introduction

This thesis has as its main object of research the verbal morphosyntax of the Oceanic language Äiwoo ([æiwoː]), which can achieve rather extensive complexity. For example, person and number seem to be marked in a number of different places: before the aspect marker (1), after it (2), with a suffix (3), with a combination of suffixes indexing both arguments (4), or with what could be analysed as a portmanteau morpheme (5)[1] (throughout the whole thesis, numbered sentences with no language specification are in Äiwoo, whereas any other language will be specified in the relevant example; the right-aligned labels identify the sentences in the data corpus, so that e.g. (4) is the 448th sentence in the text "Moliki").

(1) *me-ki-vevaale-wâ=to=wâ* (Nyiwakena nyigena 204)
1AUG-IPFV-wait-DIR2=CS=DEIC.DIST
'We wait'

(2) *dowâlili lâ ki-li-pevaale-mä=to=wâ* (Nyiwakena nyigena 206)
child DEIC.DIST IPFV-**3AUG**-wait-DIR1=CS=DEIC.DIST
'The children are waiting'

(3) *ku-wâ-nubo-wâ-ngege-nyii-**no*** (Nyilieteina 415)
IPFV-CAUS-die-UV-straight-UV.AGR–**1MIN**
'I kill it straight away'

(4) *dä-sime i-pu-mä dä wosa-eke-nyi-wâ-**gu-mu**=wâ* (Moliki 448)
some-person PFV-go-DIR1 some hurt.UV-fast-UV.AGR-DIR2-**3MIN-2MIN**=DEIC.DIST
'Did someone come and hurt you?'

(5) *tumo ku-weo-mä=kaa ku-wo-potaa-mana-i-**gu**=ngaa* (Moliki 288)
father.1MIN IPFV-go-DIR1=FUT IPFV-go-search.UV-very-UV.AGR-**3MIN>1MIN**=FUT
'My father will come back and look very hard for me'

Complex patterns are not only found in the person marking system. Verb forms often include more than one lexical root, as can be seen in (3)-(5) above and (6)-(8) below, where the roots are in bold type; moreover, the different lexical roots can be interwoven with valence/voice-related morphemes, such as voice markers in (3) and (6) or applicatives (the comitative morpheme in (8), and a different one not shown here; see chapter 3, section 3.4.2).

(6) *ki-**eâmole**-wâtu-i-**päko**-i-**mana**-i-i jii=le* (Education 48)
IPFV-**look.AV**-COMP-UV.AGR-**good**-UV.AGR-**very**-UV.AGR-3AUG 3AUG=DEIC.PROX
'They have to look after them properly'

(7) *ki-**vaavee**-eopu-**päko**-usi-mä gelivito-de jii* (Nuts and fruits 182)
IPFV-**show.UV-also-good-again**-DIR1 mother-12AUG 3AUG
'Our parents should show us properly again [how to prepare it]'

(8) *ki-**ngâbo**-i-**woli**-kâ-mu=wâ* (Nyeliwânubona toponu 130)
IPFV-**dive**-COM-**go.down**-DIR3-2MIN=DEIC.DIST
'You dive down with it'

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[1] In chapter 6 I propose an alternative analysis of this structure as containing both a suffix *-gu* and a -∅ suffix, the latter marking a 1MIN O argument.

In addition to applicative suffixes, there is also a morphological causative prefix *wâ-* which can occur within the complex verb form. Finally, a whole verb can be rendered into a nominalized structure, functionally equivalent to a relative clause. Both of these features are shown in (9).

(9) *de-nâ-wâ-**singä**-eâ-wâ-nee-mi=ä=ne*   (Marriage ceremony 39)
     BN:thing-IRR-CAUS-**lie**-UV-DIR2-1MIN-2AUG=CV=DEIC.PROX
     'The thing I want to deceive you with' ('to deceive' is here lit. 'make you lie')

In this thesis I investigate how these fairly complex forms are built in the grammar. This inquiry can be divided coarsely into two main strands. First is the more strictly descriptive one: how many morphemes (or classes of morphemes) are there, what do they do, how do they interact with each other, and what are the constraints on their respective order? Second, from a more theoretically-oriented perspective: given a description of these complex data, how can they best be accounted for? A crucial question in this regard is whether the affix order in Äiwoo is arbitrary, i.e. one needs to stipulate a linear template where individual "slots" in a strict order are filled by certain (classes of) morphemes, or whether the affix order follows from independent principles of syntax and semantics, and can therefore be predicted on the basis of these. This is the question of "templatic" vs "layered" morphology, which will be elaborated on in section 1.2 and 1.3.

    In order to answer these questions, I propose an analysis of the Äiwoo verbal system within a generative minimalist framework (Chomsky 1995, 2000, 2001), exploiting also theoretical tools from Distributed Morphology (Halle & Marantz 1993, Harley & Noyer 1999). I show that by adopting a non-lexicalist approach, in which complex words are built by the syntax (i.e. in the same way that complex phrases or constituents are), the organization and behaviour of the different morphemes can be predicted, and follows from independent syntactic and semantic principles. Through the rest of this introductory chapter, I present in more depth the main research question of the thesis (section 1.2), as well as the theoretical background regarding the templatic vs layered morphology issue (section 1.3). In section 1.4 I discuss the relevance and significance of this thesis, and highlight which chapters will be more interesting respectively for typology-oriented and/or generative-oriented readers. The last two sections contain a short presentation of the Äiwoo language (section 1.5) and some terminological notes (1.6).

1.2   RESEARCH QUESTION AND AIMS

As presented above, the main topic of this thesis are the morphosyntactic and structural properties of verbal and verb-related morphemes in the Oceanic language Äiwoo. I restrict the domain of the investigation to what is referred to in Næss (2015a) as the verb phrase[2], including a series of clitics delimiting it on the right edge (for more details, see chapter 2). Sentences (1)-(9) above are already an illustration of the potential complexity Äiwoo verb forms can achieve. Consider also (10), with 4 lexical roots interspersed with voice-related morphology (the undergoer voice agreement suffix *-nyii/-i*; the last clitic *=pwâ* is as yet not identified), and (11), where the person/number features of the S argument ('they two') are marked in two different places, with plurality marked before the verb roots (*lu-* 3AUG) and duality after them (*-le* 'unit-augmented'; see section 1.6 below for clarifications about the number terminology).

(10) ***siwo**-lâ-**doo**-nyii-**päko**-i=ja=pwâ*   (Nyiveina benuwää 112)
      hold.UV-go.out-**like.that**-UV.AGR-**good**-UV.AGR=HORT=?
      'Can you hold it out properly like that?'

(11) *ku-**lu**-pu-woli-ute-**le***   (Dolphin 49)
      IPFV-**3AUG**-go-go.down-again-**UA**
      'They two went back down'

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[2] This term is to be taken as pre-theoretical, and not as the same concept as the VP or *v*P in generative syntax.

The morphemes on the very right edge of the verb forms in several of the examples presented so far are analyzed as clitics because in certain contexts they do not attach to the verb form itself, but to an overt A argument: in (12), this is the noun *gite* 'his brother'; in (13), this is the whole bracketed phrase meaning 'the person sitting in the boat' (this sentence is from a text about a fishing technique requiring two people, one in the boat and one who dives). The distribution of arguments in Äiwoo, be it full NPs/DPs, pronouns or person affixes on the verb, is rather complex, and will be explored in more detail especially in chapters 3 and 5.

(12) *nye-ângâ*   *i-wagu-kä*   [*gite*]ₐ=*jo*=*wâ*   (Tewaki 65)
      BN:manner-DEM-DIST   PFV-say.UV-DIR3   man's.brother.3MIN=PROG=DEIC.DIST
      'His brother said that'

(13) *ngaama* *lâ*   *ba*   *i-kää*   [*me-ki-tokoli-woli-mä*
      if   DEIC.DIST   NEG   PFV-know.UV   BN:person-IPFV-sit-go.down-DIR1

      ngä   *botu*]ₐ=*gu*=*nâ*   (Nyeliwânubona toponu 141)
      LOC.PREP   boat=NEG=DEIC.DIST
      'If the one sitting in the boat doesn't know [(that you are in the water) then you will drown]'

Amidst all the complexity shown above, some of the morphemes seem to be problematic with regards to expected affix order and the templatic vs layered morphology distinction, which will be explained more in depth in the section 1.3. For example, while one expects voice and valence-related morphology to be closest to the stem or even fused to it (Bybee 1985), the circumstantial voice marker =*ä* in (9), repeated here as (14), is a clitic at the very right edge of the verb phrase.

(14) *de-nâ-wâ-singä-eâ-wâ-nee-mi*=*ä*=*ne*   (Marriage ceremony 39)
      BN:thing-IRR-CAUS-lie-UV-DIR2-1MIN-2AUG=**CV**=DEIC.PROX
      'The thing I want to deceive you with' ('to deceive' is here lit. 'make you lie')

Moreover, person marking appears both in the form of prefixes (1)-(2), suffixes (14), and split between prefix and suffix position (11) (although *-le* is not strictly speaking a person marker, it participates in marking the number features of the S argument). Finally, aspect/mood is marked by a prefix (*ku-* 'imperfective' in (11), *i-* 'perfective' in (12), *nâ-* 'irrealis' in (14)), but TAM-related information is also encoded in the right-edge clitics, such as =*jo* 'progressive' in (12) and the future clitic =*Caa*, not shown here[3].

As briefly introduced in the previous section, two important notions I will exploit are those of "layered" and "templatic" morphology (see section 1.3 below for a more thorough exposition). Coarsely described, the former consists of hierarchical structures, where morphemes are added one by one to an increasingly complex root/stem. If word-internal structures are hierarchical in nature, one can expect independent principles (of e.g. syntax and semantics) to apply. Therefore, the behaviour and order of the affixes can be expected to be accounted on the basis of these principles. On the other hand, "templatic" morphological systems have been described not in terms of hierarchical structures, but purely linear ones. One can visualize a template as a linear string of "slots", each filled by a given morpheme or a class of morphemes in paradigmatic alternation. Given that the positions are only specified linearly, we cannot expect the linear order to abide by any independent principles; templatic morphosyntactic systems in fact often show seemingly arbitrary affix order, with no deeper explanation than a merely descriptive one. In this thesis I will investigate how feasible a layered morphology-type analysis is for the Äiwoo verb. In other words, I will try to determine which parts of the Äiwoo verbal morphology are possible to explain based on independent principles – i.e. morphosyntactic hierarchical structures and semantic scope relationships – and which parts, on the contrary, must follow an arbitrarily stipulated linear order (in other words, where the layered morphology analysis has to "give up").

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[3] At this point the reader should bear in mind that sentences (10)-(13) are only meant to give an illustration of the complexity of the morphosyntax of verb forms in Äiwoo, and not as a precise presentation of the phenomena that will be investigated. A more thorough exposition will be given in chapters 2 and 3.

In order to answer these questions, I draw on data collected on a number of field trips (between 2004 and 2015) by Åshild Næss; the 2015 material is available at the Endangered Languages Archive (ELAR)[4]. The largest part of the data consists of free elicitation, then transcribed, glossed and annotated in the software Fieldwork Language Explorer (FLEx)[5]. The whole corpus amounts to 75 texts of variable length – between 15 and 1069 lines – and different genres (traditional stories and legends, explanations of aspects of the local life or older traditions, narrations of recent events, etc.). Due to the method of data collection, there are not many "clean" minimal or near-minimal pairs in the corpus. Throughout the thesis, I have therefore attempted to select sentences that are illustrative of the phenomenon under discussion without having at the same time too many confounding factors, at least to the best of what was practically possible.

At a preliminary stage, in order to get a good overview of how the more complex verb forms are built up, I have employed a script programmed to find the n longest words in any given text, where n could be specified every time[6]. Given that the longest words in any Äiwoo text are most often verbs, these findings provided a good start point to investigate the internal structure of the Äiwoo verb, for example in establishing patterns of affix order. Moreover, I have carried out different types of queries in the FLEx corpus, e.g. searching for all occurrences of given morphemes in order to analyze their behaviour. Finally, in connection with the project "Ergativity in comprehension and production: language typology and processing" at the University of Zürich, I have annotated every single sentence of the corpus for certain syntactic features (essentially, the nature of preverbal DPs/NPs); although not entirely related to my thesis' research question, this in-depth examination of the corpus has proven extremely useful for noticing details and constructions that would have been difficult or impossible to search for in FLEx.

Since Äiwoo is as yet an underresearched language, aspects of its morphosyntax which have received less attention in the published literature will be given a pre-theoretical description in the present thesis, within the typological and descriptive tradition (essentially following the 'Basic Linguistic Theory' framework, cf. Dixon 2009/2012). Moreover, I will make use of the generative framework known as the Minimalist Programme (see e.g. Chomsky 1995, 2000, 2001 or textbooks such as Adger 2003, Koeneman & Zeijlstra 2017) incorporating ideas from Distributed Morphology as well (Halle & Marantz 1993, Harley & Noyer 1999) as a tool for modelling the morphosyntactic phenomena under discussion and inquiring into the questions presented above (see section 1.4 below for details about which chapters are mostly typological-oriented and which mostly generative-oriented). Although the technical implementations will be within this framework, the aim is to answer those questions in a manner that is as generalizable and theory-neutral as possible.

1.3   BUILDING WORDS: LINEAR TEMPLATES AND HIERARCHICAL STRUCTURES

1.3.1   TEMPLATES AS UNMOTIVATED LINEAR ORDER

In the previous sections I have introduced a distinction between morphological systems organized by hierarchical structures ("layered morphology") vs those organized as following a linear template. The term "template" is a relatively common one in the linguistic literature within different subfields, from descriptions of underresearched languages to morphological theory. However, it is often used in a non-technical sense, and definitions or precise characterizations do not abound, something that prompted

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[4] https://elar.soas.ac.uk/Collection/MPI1032004

[5] https://software.sil.org/fieldworks/

[6] I thank Pieter Dhondt for writing this script.

Good (2011: 731) to call it an "undertheorized" term or concept. The concept of template has been used to describe both morphosyntactic patterns, morphophonological ones (such as non-concatenative morphology from e.g. Semitic languages, although this may be argued to be partially morphosyntactic in nature as well; see Good 2016: 9–12 for examples of more strictly morphophonological templates) and purely syntactic ones (e.g. the traditional analysis of German clause structure, based on the linearly-defined positions *Vorfeld* 'front field', *Mittelfeld* 'middle field' and *Nachfeld* 'post field'; see Thiersch 2017); however, in the present work I will ignore the latter two uses.

In the technical sense which I will use here, a template can be thought of as a description of, or a constraint on, the linear ordering of a series of elements (see Good 2016 for a thorough discussion). In the case of morphosyntactic templates, this will apply to the different affixes within a complex word (in the present thesis, verb forms). The central factor for analyzing a given pattern as templatic – in this technical sense – is the *unexpectedness* of the linear ordering of its constituting elements: if, for example, the order of the affixes in a verb cannot be reduced to independent explanations (e.g. semantic scope), but must be stipulated independently, one is dealing with a templatic system (or a "position class systems", cf. Inkelas 1993). This feature is highlighted in the following definition by Good (2016: 7; emphasis mine)[7].

(15)   **Template:** An analytical device used to characterize the linear realization of a linguistic constitu-ent whose *linear stipulations are unexpected* from the point of view of a given linguist's approach to linguistic analysis.

Due to this unexpected or unpredictable linearization, in templatic systems "it is difficult or impossible to analyze the formation of such complex words as the addition of affixes one by one to a stem. [...] [E]ach affix has its position in the string and optional affixes are slotted into this string, at the appropriate point in the sequence, as required" (Spencer 1991: 208). Importantly, in his definition Good opens for the possibility that whether a given order of elements is unexpected or not depends on the analysis: what may be unexpected in a given framework may also be entirely predictable in a different one.

Given the potential morphosyntactic complexity in Äiwoo verb forms (such as those shown earlier) it is then interesting to investigate how the relatively long strings of morphemes are put together. On one side, they could be organized by hierarchical principles, i.e. with the addition of one morpheme at the time creating a more and more complex structure; the hierarchical structure would derive from independent semantic or syntactic factors. On the other side, if no such independent explanation(s) can be found, one would have to argue that the Äiwoo verb follows a linear template. In the next section, I present these two main types of morphosyntactic organization.

1.3.2   Layered morphology and templatic morphology

In a seminal article, Simpson & Withgott (1986) introduce the distinction between "layered morphology" and "templatic morphology". The former term describes morphosyntactic systems where affixes are added one by one (hierarchically) to a base, and their order can be predicted by independent factors such as syntax or semantics; these types of systems are perhaps the one which are most likely to be familiar to most linguists, and can be visualized with e.g. tree structures. As opposed to this, the latter term describes morphosyntactic systems where the linear order of the affixes has to be stipulated: these systems are best visualized as a rigidly ordered series of "slots", all (non-obligatorily) filled by a given set of morphemes; morphemes belonging to the same set (i.e. assigned to the same slot) cannot co-occur.

An illustration of layered morphology can be made with the English word *conceptualization*. The nominal root *concept* is made into an adjective by the suffix *-(u)al*; this adjectival stem then is made

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[7] This definition is formulated so to apply to non-morphosyntactic templates as well; as previously stated, in this section I will only focus on morphosyntactic ones.

into a verb by the causativizing suffix *-iz(e)*; this stem is then turned into a noun again, by the suffix *-ation*. The whole derivation is modelled by the tree in (16)[8]. The order of the affixes depends on (and reflects) the internal structure of the word; therefore, it is possible to explain the order on the basis of independent principles, in this case syntactic and semantic ones.

(16)

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                        N
                  V        -ation
              A      -iz(e)
          N      -ual
       concept
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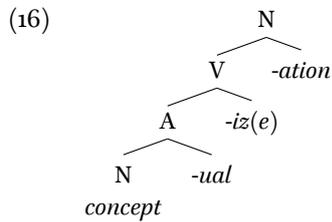
On the other hand, the verb form in (17) (Kari 1989: 441) is an illustration of what is typically considered to be templatic morphology (see, however, Rice 2000 who argues that Athapaskan[9] languages in fact display layered morphology; see also below). Each morpheme is labelled with a subscript indicating its linear slot (and sub-slot, for those with both a number and a letter), following a highly elaborate model consisting of 30 positions in addition to the root. It is not relevant here to explain in depth Kari's analysis, or present what each morpheme does or is; for the current discussion, it is sufficient to see how these positions do not necessarily seem to follow from syntactic or semantic principles: for example, notions of aspect and polarity are marked in three different places (the three markers glossed IPFV.NEG), and more lexical information is encoded by the root, by "thematic" prefixes and by "qualifiers".

(17)   Ahtna (Athapasksan, Alaska; Kari 1989: 441, glosses adapted from Good 2016: 13)
       naghiziłniige
       na_{1OA}-gh_{4A}-i_{3D}-z_{3D}-i_2-$ł_1$-$niik_{ROOT}$-$\varnothing_{VSF1}$-e_{VSF2}
       THM-QUAL-IPFV.NEG1-S-2SG-CLF-feel-IPFV.NEG2-IPFV.NEG3
       "You have not yet found a fabric-like object"

According to Simpson & Withgott (1986), the existence of hierarchically organized structures such as (16) is precisely what distinguishes layered morphological systems from templatic ones, which produce a flat structure. A word consisting of five morphemes α-β-γ-δ-ε will thus have a different internal structure in the two systems, as illustrated in (18). Note that in a generative framework, structures such as (18b) are disallowed at the level of the syntax proper (while they can be admitted at different levels of representation, e.g. at the interface between syntax and phonology, at least in Distributed Morphology; Halle & Marantz 1993, Harley & Noyer 1999).

(18)   a. Layered morphology: b. Templatic morphology:
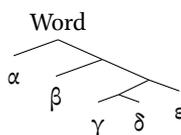
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           Word                                        Word
        α                                         α   β   γ   δ   ε
          β
            γ   δ
                 ε
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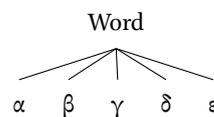
It is important to underline that these two manners of organizing affixes are not to be thought as distinct types of language: a given language will not have either templatic morphology or layered morphology, but may often be found to adopt different strategies for different sub-areas of its grammar (see e.g Mithun 2016: 150–152 and references therein). For example, Rice (2000) argues that in Athapaskan

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[8] This is only meant to be an informal schematization, and not a theoretically informed claim about the morphosyntactic structure of this word.

[9] I follow here Rice's spelling, although the spelling "Athabaskan" is commonly found as well.

languages, the affix order is governed by semantic and scope factors (i.e. layered morphology). However, when semantics cannot govern the order of two elements, then their order may either vary or follow a "default", language-specific templatic ordering (Rice 2000: 125); this is the case if, for example, they do not enter into any scope relationship with each other, i.e. the two scoping possibilities are truth-conditionally equivalent. Similarly, suffixes in Adyghe verb forms have been claimed to be governed by semantic scope, while prefixes have a rigid ordering which does not seem to follow from any syntactic and/or semantic principle (Korotkova & Lander 2010; Arkadiev & Klamer in press).

An opposition between a hierarchical ("tree-like"; (18a)) structure and a flat ("fan-like"; (18b)) one is reminiscent of the distinction made originally by Hale (1983) and the following Government and Binding literature in discussing non-configurational languages like Warlpiri, which were claimed to lack phrase or constituent structures (i.e. only have a flat syntactic structure). A notable difference, however, is that while an allegedly flat syntactic structure in non-configurational languages was taken to be the cause of their more or less free word order, an allegedly flat morphological structure in templatic systems does not result in any free order; on the contrary, templatic morphology produces a strict affix order. Moreover, a connection has been made from templatic vs layered morphology to derivational vs inflectional morphology: according to Stump (1997), in fact, all inflectional morphology is templatic in nature (even in relatively impoverished systems such as English), while derivational morphology can be of both natures. However, for the purpose of this work I will set aside the issue of the distinction between derivation and inflection.

1.3.3   Distinguishing criteria

Simpson & Withgott (1986) identified several criteria to distinguish layered morphology from templatic morphology, which have subsequently been quite influential in the literature. Note that in the original article, these criteria are meant to be definitional of two separate types of morphology; a system is either layered or templatic, and there is nothing in between. However, as presented in the previous paragraph, more recent literature argues that languages will use both principles to build complex words. The criteria which are more relevant to my purposes are summarized in Table 1.1. Through the rest of the section, I discuss each of these criteria, and I argue that the first two are not applicable to the study of the Äiwoo verb, especially due to unclarity regarding the status of the distinction between inflection and derivation in this language.

Table 1.1: Characteristics of layered morphology and templatic morphology (elaborated from Simpson & Withgott 1986: 156; Stump 1997: 218).

	Property	Layered morphology	Templatic morphology
(I)	Zero morphemes ("significative absence")	—	✓
(II)	One head per word	✓	—
(III)	Adjacency Constraint	✓	—
(IV)	No Lookahead Constraint	✓	—

(I) Zero morphemes, or significative absence   According to Simpson & Withgott (1986: 156), "the meaningful use of absence of information" is a characteristic of templatic systems; this is labelled "significative absence" in Stump (1997, 2006). For example, the absence of marking in the position associated to subject marking may by itself signal 3rd person marking, if it contrasts paradigmatically with overt morphemes for 1st and 2nd person. Stump (1997) argues that in fact all inflection is templatic in nature; thus, contrasts such as singular *friend-∅* vs plural *friend-s* are expected. Derivational morphology (which can be modelled as layered on the basis of independent evidence; see e.g. (16) above), on the contrary,

often does not show cases of zero morphemes. For example, there is no derivative of the English word *friend* that contrasts with e.g. *friend-ship*, *friend-less* only by virtue of it bearing no additional marking. Simpson & Withgott (1986) and Stump (1997, 2006) also argue against zero derivation (e.g. the derivation of the noun *walk* from the verb *walk*) to be an issue of "significative absence" in layered morphology; see these works for details.

Stump (1997: 222) notes himself that, in comparing *friend* ∼ *friend-ship* and *friend*(-∅) ∼ *friend-s*, one compares apples with oranges, that is, derivation with inflection. For the purpose of this thesis, the practical utility of this criterion is somewhat reduced, due to its being tied to the distinction between derivation and inflection. At the present stage of documentation of Äiwoo, a thorough study of which morphemes can be analysed as inflectional or derivational has not been carried out, and it would be outside the scope of this thesis. Therefore, if zero morphemes are found in Äiwoo – something which can be argued to be the case in at least one or two cases; see chapter 6 – it would not necessarily need to be an indication that the morphosyntactic (sub)system is either templatic or layered – at least if one does not accept Stump's (1997) argument that all inflection is templatic, something that is implicitly refuted by syntactic models that are not strictly lexicalist, i.e. where different morphemes occupy different syntactic positions and are added to the stem through e.g. movement operations (as opposed to models in which words are inserted in the syntax already fully inflected). Due to these issues, I leave this criterion aside as providing evidence for morphological patterns in Äiwoo being templatic.

(II) ONE HEAD PER WORD   In a layered system, affixes are added sequentially. When two elements combine, the properties or features of the combination are determined by either one of them, but – crucially – not by both[10]. This can be illustrated again by the example of *concept-ual-iz-ation*, where each affix changes the syntactic category of the word (see (16) above). Simpson & Withgott (1986) employ the notion of head, stating that layered morphology gives rise to headed structures. This is supposed not to be true for templatic systems.

One consequence of there being one head per word is the known claimed generalization about derivational morphology being on the inside of inflectional morphology, i.e. closer to the stem (Bybee 1985). In traditional models (following the "Split Morphology Hypothesis", see e.g. Anderson 1982, Perlmutter 1988, Scalise 1988), first a complex word is built by derivation, adding one affix at a time and with one of them determining the morphosyntactic properties of the full form; afterwards, this complex word is inflected. The idea of derivation always being internal and inflection always being external (i.e. respectively closer to and further away from the stem), however, has proven to be highly problematic, and counterexamples abound (Spencer 2006). In Ancient Greek, for example, past tense is marked by the so-called augment *e-*, as shown in (19a). However, when a verb with a prepositional preverb is inflected – in (19b) *epi*, roughly 'on' – the augment does not appear on the outside (i.e. to the right) of the preverb, but between it and the stem.

(19)   Ancient Greek (Indo-European; adapted from Spencer 2006)

    a.   *graph-ō*   →   *e-graph-on*
        write-1SG   PST-write-1SG
        'I write'   'I wrote'

    b.   *epi-graph-ō*   →   *ep-e-graph-on*
        PREV-write-1SG   PREV-PST-write-1SG
        'I write upon/inscribe' 'I wrote upon/inscribed'

The interweaving of inflection and derivation is attested in many languages with different morphological systems (see Spencer 2006 and Arkadiev & Klamer in press for more examples). Moreover, the

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[10] With regards to this criterion, neither Simpson & Withgott 1986 nor Stump 1997 discuss exocentric compounds such as *pickpocket*, whose properties are not determined alone by either of the components. An in depth study of compounds and their properties in Äiwoo has not been carried out, so I leave this issue aside.

distinction itself between inflection and derivation can be problematic, and even more so in an under-researched language such as Äiwoo (in other words, determining which morphemes are inflectional and which are derivational is a non-trivial endeavour, and outside the scope of the present work). Due to these analytical issues, I will not use the criterion of "one head per word" as evidence for either templatic or layered morphology in Äiwoo.

(III-IV) CONSTRAINTS AGAINST DISCONTINUOUS DEPENDENCIES   This phenomenon, or set of phenomena, has to do with the manner in which morphemes are sensitive to each other's presence and/or form. In layered morphological systems, an affix that is added to a base cannot be sensitive in any way to any non-adjacent affixes (in this respect, a circumfix must be considered one single affix, although consisting of two non-adjacent parts). Since affixes are supposed to be added in a sequential fashion (i.e. from the stem and outward), this means that an outer affix cannot depend on or be sensitive to the form or presence of a non-adjacent inner affix, i.e. closer to the stem; this is called the "Adjacency Constraint" in Simpson & Withgott (1986), and "inward sensitivity" in Stump (1997). Similarly, an affix that has already been added to the stem cannot "predict" that another given affix will be added later and behave accordingly; in other words, inner morphemes cannot "look ahead" and be sensitive to outer morphemes ("No Lookahead Constraint", or "outward sensitivity"). In templatic systems, however, both these constraints can be violated.

Verb forms in Swahili, for example, present violation of the Adjacency Constraint, or inward sensitivities. The subjunctive mood is solely marked by the change of the last vowel of the stem from an *-i* to an *-e*, as shown in (20a); this morpheme is the closest one to the stem, being in practice fused to the stem itself. The position and form of the negative prefix are sensitive to this vowel, although other morphemes intervene in between. When negation is added to an indicative form, it is before the subject prefix, as in (20b). However, when it is added to a subjunctive form, it comes after the subject prefix and has a different form, as in (20c).

(20)   Swahili (Bantu, Eastern Africa; Stump 1997: 221–222, glosses adapted)

a. *tu-m-pige*
1PL.SUBJ-3SG.OBJ-beat.**SBJV**
'That we may beat him'

b. ***ha**-tu-m-pig**i***
NEG-1PL.SUBJ-3SG.OBJ-beat.**IND**
'We don't beat him'

c. *tu-**si**-m-pige*
1PL.SUBJ-**NEG**-3SG.OBJ-beat.**SBJV**
'That we may not beat him'

In many cases it is difficult or impossible to determine in which direction the sensitivity goes, i.e. which morpheme is sensitive to which. Therefore, these constraints are often subsumed together as "discontinuous dependencies" (Rice 2000, Mithun 2016). For example, in the Northern Australian language Murrinh-Patha (Nordlinger 2010), almost every verb consist of at least a lexical root and a 'classifier', of which there are approximately 38 and which determine relatively vague semantic nuances of the root (e.g. events which involve hands, breaking events, etc.); due to the unclear semantics, usually these are simply numbered in the glosses[11]. For example, the lexical root *ruy* 'arrive' must always co-occur with classifier 20, as shown in (21); the semantics of this combination are non-compositional and, as far as I can understand from Nordlinger, idiosyncratic; therefore, "the two elements jointly form a discontinuous verbal predicate" (Nordlinger 2010: 330). This is an illustration of how an inner morpheme (here, the root itself) and an outer morpheme (the classifier) are sensitive to each other; however, it is not clear in which direction the sensitivity goes, i.e. which of the two morphemes (if any) is triggering the other to behave in a certain manner.

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[11] These classifiers appear in a portmanteau morpheme with both subject marking and tense, as shown in sentence (21). Due to this, each classifier has a paradigm with 50-odd different realizations.

(21)   Murrinh-Patha (Southern Daly, Australia; Nordlinger 2010: 330)
pa-mba-ruy-nu
3SG.SUBJ:2O:FUT-2SG.OBJ-**arrive**-FUT
'He will visit you'

OTHER CHARACTERISTICS   In addition to Simpson & Withgott's (1986) list, some other phenomena have
been mentioned in the literature as typical of templatic morphological systems. The first of these is
metathesis, the positional interchange of two (most often adjacent; cf. Spencer 1991: 211) elements, i.e. α-
β → β-α. If a metathesis process does not (i) have a phonological explanation nor (ii) result in semantic
or syntactic differences (i.e. scope effects), then it could be taken as a sign of a templatic system (Spencer
1991, Rice 2000). For example, in Sekani the qualifier *ɬ* and the inceptive marker *d* seem to accept two
possible relative orders (the *ə* is epenthetic), with no visible difference. This is illustrated in (22a-b).

(22)   Sekani (Athapaskan, Canada; Hargus 1988: 111, cited in Rice 2000: 14; glosses adapted)

    a. *ɬə-d-a-jìh-e*   b. *də-ɬ-a-jìh-e*
       QUAL-INCEPT-FUT-be.sweet-E   INCEPT-QUAL-FUT-be.sweet-E
       '(S)he will be sweet'   '(S)he will be sweet'

However, as Rice (2000: 14) points out herself, "if a template defines a rigid ordering of elements, then it
is an important issue why metathesis can break up the rigid ordering demanded by the template in the
absence of conditioning phonological factors".

    Another characteristic of templatic systems is that each affix should only be able to occur once
(Korotkova & Lander 2010, Mithun 2016). This is intuitively clear if one visualizes the template as a
series of slots, where each slot can be filled by a set of affixes in paradigmatic alternation; it follows then
that any given affix only can occur in one slot, i.e. never more than once. Violations of this (i.e. affixes
occurring several times) have been used to argue that a system is in fact not templatic, but layered. For ex-
ample, in Adyghe the past tense suffix -*ʁe* can occur twice, giving a pluperfect reading, as shown in (23a).
Moreover, the simulative suffix has semantics similar to English -*ish*, i.e. communicating a weak(ened)
certainty about the statement on the speaker's side. In (23b), this suffix is repeated, iconically increasing
the uncertainty.

(23)   Adyghe (Abkhaz-Adyghe, Caucasus; Korotkova & Lander 2010: 308–309)

    a. *wəne-m*   *ŝhe-r*   *tjə-λha-ʁe-ʁe-n*   *faje*
       house-OBL   head-ABS   LOC-put-**PST-PST**-POT   must
       'Presumably, the house had been covered by a roof'

    b. *a-r*   *ʁʷež'ə-ŝʷa-ŝʷ*
       that-ABS   yellow-**SML-SML**
       'It is yellowish/paler than yellowish'

A last characteristic claimed to be typical of templatic systems the fact that a verb can agree with more
than one arguments at once, as opposed to only one in layered morphological systems (Simpson &
Withgott 1986). The example they give is from Greenlandic; however, the Swahili verb forms in (20)
above constitute a good illustration of a verb agreeing with several arguments (there, both the sub-
ject and the object). Greenlandic, in fact, is usually analysed as having a layered morphological system,
where the order of the affixes can be varied resulting in different readings due to scope effects (Fortes-
cue 1984, Mattissen 2017). This is neatly illustrated in (24), where the two sentences have the affixes
ordered differently, with consequently different readings depending on which of the negation and the
adverbial element 'yet/still' has scope on the other; see the following section for another example of
different interpretations following from permutations in affix order.

(24)   West Greenlandic (Eskimo-Aleut, Greenland; Fortescue 1984: 315, as cited in Mattissen 2017: 80)

    a. *Kaalat tiki-**nngik-kallar**-puq*   b. *Kaalat tikik-**kallan-nngi**-laq*
        Kaalat   arrive-**NEG-yet/still**-IND:3SG   Kaalat   arrive-**yet/still-NEG**-IND:3SG
        'Kaalat has not arrived yet' (NEG > yet/still)   'Kaalat still has not arrived' (yet/still > NEG)

1.3.4   TEMPLATES: A NON-SATISFACTORY EXPLANATION OF AFFIX ORDER?

How affix order is organized in words containing several morphemes has been matter of debate for a lot of morphological theory. Taking into consideration both synchronic and diachronic factors, Givón (1971: 413) famously claimed that "today's morphology is yesterday's syntax": the synchronic order of morphemes is often a result of diachronic grammaticalization processes, and thereby of their original syntactic position. Another explanation of affix order that ties into the syntax, but solely considers the synchronic aspects, is Baker's (1985, 1988) Mirror Principle. In his model, morphological derivation (the word-building process) and syntactic derivation (the phrase and/or sentence building process) are isomorphic, and they will therefore reflect each other's structure. In other words, the linear order of affixes in a complex word is a reflection of their hierarchical order in the syntax. An illustration of this are the two following sentences, showing two different orders of a reciprocal and a causative marker and two consequently different interpretations (along the lines of (24) above). In (25a), the reciprocal is closest to the stem, while the causative is external to it; the interpretation has the causative scoping over the reciprocal ('see' → 'see each other' → 'cause to see each other'). In (25b), on the other hand, the two morphemes are in opposite order, and the scope relation is opposite as well, with the reciprocal scoping over the causative ('see' → 'cause to see' → 'cause each other to see').

(25)   Bemba (Bantu, Zambia; Baker 1985: 395, glosses adapted from Harley 2013b: 36)

    a. *naa-mon-**an-ya***   *Mwape   na   Mutumba*
        1SG.SUBJ-see-**RECP-CAUS** Mwape   and   Mutumba
        'I made Mwape and Mutumba see each other'

    b. *Mwape   na   Chilufya baa-mon-**eshy-ana***   *Mutumba*
        Mwape   and   Chilufya 3PL.SUBJ-see-**CAUS-RECP** Mutumba
        'Mwape and Chilufya made each other see Mutumba'

Yet another approach, contemporary to Baker's generative account, is Bybee's (1985), who investigated a sample of 50 languages, and argued that the affix order tendencies one finds are to be traced back to semantics. The more "relevant" an affix is to the verb, the closer it will appear to the stem (where an affix "is relevant to the verb to the extent that the meaning of the category directly affects the lexical content of the verb stem"; Bybee 1985: 15). The hierarchy in (26) is found to cover the statistical tendencies in the sample (≪ is to be read as "external to"; see also Spencer 2006, Manova & Aronoff 2010).

(26)   MOOD ≪ TENSE ≪ ASPECT ≪ VOICE (Bybee 1985)

According to this, voice-related morphology will appear closest to the stem, followed then by aspect, tense and mood, which again is (possibly) followed by person, number and gender agreement. Valence-related information (e.g. causative, applicative, (de)transitivization, etc.) is not part of this hierarchy due to its being highly relevant to the verb stem's semantics: in fact, it is often completely fused with the stem, i.e. lexicalized (cf. English intransitive-causative couplets such as *die~kill, lie~lay*, or applicative-like couplets such as *run~outrun*).

    It is interesting how these three approaches for explaining affix order are not necessarily incompatible or in competition with each other: the surface order of the affixes reflects the order of the syntactic operations (Baker) plausibly because these elements grammaticalized in that order over time (Givón), and semantic (i.e. scope-related) factors can explain why they were in that order in the first place, and still are (Bybee). Now, if proposed templatic morphological systems do not in fact follow any of these

principles, and their affix order must in fact be stipulated completely arbitrarily, then that makes for a theoretically fairly unsatisfying explanation – if one can consider that an explanation to begin with, and not just a restatement of the problem or a declaration of ignorance along the lines of "the order is this, and we do not know why". In Nordlinger's (2010: 322) words, on the important question of affix ordering, templates provide the "least interesting answer". Hence, it is not surprising that many studies of morphological systems have tried to claim that a certain language is in fact *not* templatic (Stump 2006), e.g. Rice's (2000) monumental work on Athapaskan languages, traditionally assumed to be archetypical templatic systems (where "the surface ordering of morphemes [in verb words] is apparently without reason"; Rice 2000: 9), or more recently Korotkova & Lander (2010) about Adyghe. Despite these examples, it is debated whether we still need templates as an analytical or descriptive tool. For example, Nordlinger (2010) uses all the criteria and diagnostics exposed in this section, and argues that Murrinh-Patha verb forms are indeed organized in a templatic system (although see Mansfield 2017 for a prosody-based non-templatic analysis). Her conclusion is then that templatic systems are still needed as a theoretical/analytical tool, but that they need to be argued for in depth, and not merely claimed.

1.4 WHY IS THIS INTERESTING, AND FOR WHOM?

As highlighted above, the question of how affixes are organized in complex words can be approached both from a descriptive and a more theoretical perspective. The present thesis aims therefore to be of interest to linguists both within the typological/functionalist tradition and the formal/generative one.

Within the typological/functionalist tradition, the present thesis will contribute with more knowledge regarding the description of an underresearched language. More specifically, this work will be of interest to Oceanic linguistics, especially given the relatively unusual nature of Äiwoo verbal morphosyntax in relation to Oceanic languages as a family, as these languages do not have symmetrical voice systems. Moreover, it will also contribute to the debate about the nature of templatic morphology (and its existence), and about whether "templates" are needed at all as an analytical tool, or are better considered as merely descriptive notions. Finally, it will contribute to the study of complex morphosyntactic systems and possibly of polysynthesis, with data from a geographic area which is not known for polysynthetic languages.

On the other hand, within the more generative and formalistic tradition, this thesis is the first investigation of a Temotu language within the Minimalist framework. Applying a theoretical framework to new languages is an interesting endeavour, in that one cannot know beforehand which aspects of the framework and theoretical constructs will function well, and which less well; this may possibly be enlightning for the theory as a whole. The study of symmetrical voice systems will receive a new contribution, especially interesting due to Äiwoo having a slightly different system from the more familiar ones such as those of Tagalog, Indonesian etc. (see chapter 3 and 5 for details). Moreover, this work will contribute to the study of argument structure, valence-related operations, and the divide between morphology and syntax.

Researchers who are more interested to the typological aspects of the problem(s) may want to focus on chapters 2 to 4, at the end of which I give a slightly simplified and less formal explanation of the formal model I propose. This model is presented in depth in chapter 5, with all the technical details of the implementation. Chapter 6, dealing with the person marking system, has both descriptive parts (sections 6.1 and 6.3) and formal/generative ones where an implementation is proposed (the rest). Finally, chapter 7 contains a typological reflection as to whether or not the complexity of Äiwoo verbs might be associated to polysynthetic languages. Chapter 8 summarizes the main findings and points I argue for, and lists a series of open questions that future research may shed light on.

1.5   The Äiwoo language

1.5.1   The speakers and the language's history

Äiwoo is a language from the Solomon Islands, and it has been previously referred to as "Aŷiwo" or "Reefs" (Wurm 1978, Lincoln 1978). It is spoken by about 8 400 people (Eberhard et al. 2019), mostly on the Reef Islands (in the Temotu province, the easternmost region of the Solomon Islands) and by some communities on Santa Cruz and in Honiara, the capital city of the country (Næss 2006). Äiwoo is the language with the largest amount of speakers in its close geographical context. Figure 1.1 shows the position of the region where Äiwoo is spoken in a larger geographical context.
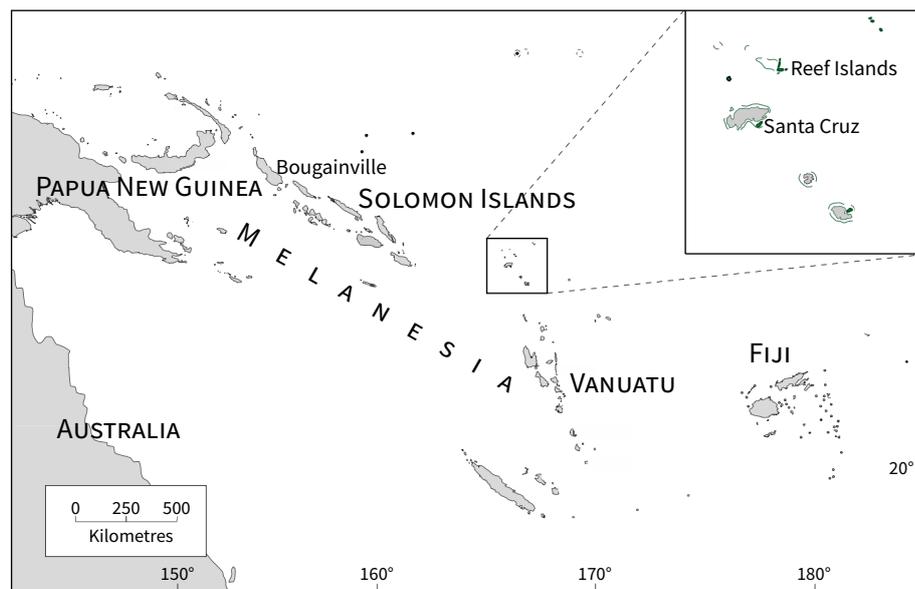
Figure 1.1: The Reef Islands are north in the window in the corner (map elaborated from Ross & Næss 2007: 457).

Äiwoo's phylogenetic classification has been a debated matter for the last few decades. There are clusters of Austronesian languages which are problematic to classify, partly due to the lack of extensive documentation; many of these have been called "aberrant", especially in Southern Melanesia (i.e. where Äiwoo is; Pawley 2006, Blench 2014). Äiwoo and its closest related languages (Natügu and Engdewu), collectively called the Reef-Santa Cruz languages, have been claimed not to be Austronesian, or at least of mixed Austronesian-Papuan ascendency (Wurm 1978). However, in more recent work (Ross & Næss 2007) the same languages have been shown to belong to the Oceanic family, without the need of postulating any Papuan substratum. Ross & Næss (2007) demonstrate that the Reef-Santa Cruz languages belong to the Temotu languages, a first-order subgroup of Oceanic. The relation between Temotu and Oceanic might have to be re-evaluated after the analysis of the Äiwoo clause alternation system as symmetrical voice (Næss 2015b; see also chapter 3, section 3.2): although symmetrical voice systems are currently reconstructed to be part of Proto-Austronesian, they are thought to have already been lost in Proto-Oceanic, having been reanalyzed as an opposition in transitivity (Lynch et al. 2002: 58–62). Therefore, the fact that Äiwoo has this kind of system may imply that either the Temotu languages are a sister of the Oceanic group instead of a daughter of it, or that the reconstruction of Proto-Oceanic might have to be reconsidered.

1.5.2 PUBLISHED LITERATURE

A consistent about of material about Äiwoo was written by Stephen Wurm between the '70s and early '90s (i.a. Wurm 1972, 1978, 1981a,b, 1982, 1991); however, most of the analyses in these papers have been superseded by later work, and therefore I have not used them. The literature on which this thesis is mostly based on has been written by Åshild Næss, and consists of the following papers: Næss (2006) contains an analysis of the bound nouns (previously analyzed by Wurm as "nominal class markers"); Ross & Næss (2007), cited in the previous section, prove that Äiwoo is an Austronesian language, and Næss & Boerger (2008) add evidence to this claim, mainly from morphemes within the verb complex; Næss (2012) analyzes a particular kind of serial verb construction; Næss (2013) presents an analysis of the different clause constructions in Äiwoo, first viewed as a transition type between symmetrical voice and transitivity oppositions; Næss (2015a) discusses the status of grammatical relations and the syntactic ergativity at the surface level of the VP; Næss (2015b) proves that Äiwoo shows a symmetrical voice system (thereby superseding parts of Næss 2013 and Næss 2015a); Næss (2017b) presents a more in-depth analysis of the bound nouns and a typological discussion of their significance as for the divide between roots and affixes; Næss (2018a) analyzes the different strategies used to encode plurality in a language without morphological number marking on nominals; Næss (2018b) discusses how spatial relations are encoded with directional suffixes and serial verb constructions. In addition, I have consulted unpublished material about morphophonology (Næss ms.(a)) and valence/voice morphology (Næss ms.(b)). Finally, there is a short dictionary (Næss 2017a) and two master theses: Vaa (2006) is about discourse organization, and Frostad (2006) discusses directional and locative verbs.

1.5.3 ORTOGRAPHY AND BASIC MORPHOPHONOLOGY

The ortography used for Äiwoo throughout this thesis follows the practical one currently used in the published literature. The phonetic value of most graphemes is predictable, i.e. their IPA value, with the following exceptions: ⟨ä⟩ represents a low front vowel [æ]; ⟨â⟩ represents a low back vowel [ɑ∼ɒ]; ⟨j⟩ represents a voiced affricate [ⁿd͡ʒ]; the digraphs ⟨ny⟩ and ⟨ng⟩ represents respectively a palatal nasal [ɲ] and a velar nasal [ŋ]. All voiced stops (including the affricate above) are prenasalized, i.e. [ᵐb, ⁿd, ᵑg, ⁿd͡ʒ]. As an illustrative example, *ngege* 'immediately' is pronounced [ŋeᵑge].

The vowels *ä* and *â* (and marginally *a*) tend to alternate in a series of morphemes such as *-kä/-kâ* 'directional (third person)', *nä/nâ-* 'irrealis' or *vä/wâ-* 'causative', depending on whether the following syllable contains a front or back vowel. In the running text I will consistently cite these morphemes as *-kä, nâ-* and *wâ-*, as these seem to be the most basic forms (Åshild Næss, p.c.). Another alternation of which the reader should be aware is between the bilabial consonants /ᵐb, p, m/ and their labiovelarized variants [ᵐbʷ, pʷ, mʷ]. For example, *mana* 'very' is equally acceptably pronounced both as [mana] and as [mʷana]; the transcription follows the recorded pronunciation, so sometimes the same lexical item may be found to be presented in two seemingly different forms (e.g. *mana, mwana*). The status of these labiovelarized variants as phonemic or not is poorly understood, although marginal minimal pairs are attested. Moreover, *v* and *w* can also vary in certain words, such as *väämo∼wäämo* 'begin'.

Finally, a couple of morphophonological notes are in order. First, the imperfective prefix *ki-* and the 3AUG prefix *li-* show the allomorphs *ku-, lu-* in a series of contexts containing back vowels (/u, o/) and/or bilabial consonants; see e.g. *ki-te* 'IPFV-see' vs *ku-tu* 'IPFV-take' (the precise details of this alternation are not relevant for the scope of this thesis). Second, when the 3AUG prefix *li-* precedes a lexical item starting with *v* or *w*, this will occur consistently in a *p-* or *pw*-initial form instead: *vängä* 'eat' ∼ *li-pängä* 'they eat', *wokâu* 'swim' ∼ *li-pokâu* 'they swim'; *wâ-nubo* 'CAUS-die, kill' ∼ *lu-pwâ-nubo* '3AUG-CAUS-die, they kill'.

1.6   Notes about terminology

As discussed in section 1.4, the present thesis – one might say – is of a sort of "mixed" nature: parts of it will be more of interest to linguists within the typological/functionalist tradition, whereas other parts of it will appeal more to those who work with formal models of grammar, especially minimalism in the generative framework. Due to this, it is good to lay out some terminological notes for the sake of clarity.

Throughout the thesis I will mostly avoid the terms 'subject' and 'object' when discussing Äiwoo data; this is due to the poor state of knowledge regarding grammatical relations in this language, the status and/or existence of which has been doubted (Næss 2015a,b). Instead, I will resort to the notions of S, A, and O, where the first one is the label for the single argument of a one-place predicate, and the latter two are the label for respectively the more agentive and less agentive argument of a two-place predicate; these labels are fairly well known and originate from the typological literature (Comrie 1989, Dixon 1994, 2009/2012, Bickel 2011).

A term which I will use in two manners is 'clitic'. In the broadly typological tradition, labelling a given morpheme a clitic is usually done on the basis of its morphophonological properties: for example, clitics show "a low degree of selection with respect to their hosts" (Zwicky & Pullum 1983: 503; see this work for other traditionally used criteria to individuate clitics). In the generative tradition, on the other hand, clitics are often labelled as such on the basis of their morphosyntactic properties, i.e. their being a syntactic head that may be moved as the result of different processes (and leave therefore certain traces of this movement), as opposed to e.g. agreement markers, that are syntactically "inert" (see e.g. Preminger 2009, 2014, Kramer 2014, Baker & Kramer 2018; see also chapter 6, section 6.1.2). A clitic in the second sense (to put it informally, a reduced pronominal argument, or a 'bound pronoun') will not necessarily show the behaviour of a morphophonological clitic, but might behave e.g. like an affix. As regards the present thesis, I will use the term clitic in the first (morphophonological) sense when describing the post-verbal clitics (see chapter 2), but in the second (morphosyntactic) sense in chapter 6, where I discuss the person marking system.

Finally, a note is in order about the use of the number terms "minimal" and "augmented" instead of the more traditional "singular" and "plural", following Næss (2006) and all subsequent available literature on Äiwoo. The difference between the term sets is most clearly appreciated by contrasting two analyses of the Äiwoo pronoun system: one where the traditional terms are used (table 1.2), and one with the minimal/augmented labels (table 1.3). In the singular/plural analysis, Äiwoo has a four-way number contrast, albeit a rather imbalanced one: there is only one trial form (1INCL.TRI *iudele*), and for the other persons the distinction between trial and plural is neutralized. Moreover, this trial form shows a morphological similarity with all the other dual forms (apart from 1INCL.DU), with a *-le* suffix attached to the plural forms. This imbalance makes for a rather unelegant and uneconomical analysis.

Table 1.2: The Äiwoo pronouns as a singular/plural system

	SG	DU	TRI	PL
1EXCL	*iu*	*iungole*	—	*iungo(pu)*
1INCL	–	*iuji*	*iudele*	*iude*
2	*iumu*	*imile*	—	*imi*
3	*inâ, ine*	*ijiile*	—	*ijii*

A better analysis is presented in table 1.3. Here, three number categories are used as opposed to four: "minimal", "unit-augmented" and "augmented". The main difference is that "first plus second person" is set up as its own person category, on par with 1st, 2nd and 3rd. Therefore, 12MIN 'you and me' patterns with the other "singular" forms: since this category includes a member whose reference consists of two entities, the term "singular" is inappropriate, and "minimal" is therefore used. The augmented forms correspond to the "plural" forms in table 1.2, and the "unit-augmented" forms correspond loosely to the

Table 1.3: The Äiwoo pronouns as a minimal/augmented system (Næss 2006: 272).

	MINIMAL		UNIT-AUGMENTED		AUGMENTED	
1	*iu*	'I'	*iungole*	'I and another'	*iungo(pu)*	'I and some others'
1+2	*iuji*	'You and I'	*iudele*	'You and I and another'	*iude*	'You and I and some others'
2	*iumu*	'You'	*imile*	'You and another'	*imi*	'You and some others'
3	*inâ, ine*	'(S)he'	*ijiile*	'(S)he and another'	*ijii*	'(S)he and some others (= they)'

"dual", although they do not consistently refer to two entities, but simply to one entity more than the minimal number (*iungole* 'I and another' = 'we two (excl.)' = two entities, *iudele* 'you and I and another person' = 'we three (incl.)' = three entities, *imile* 'you two', *ijiile* 'they two'). In this way, all the forms being composed of the AUG forms plus the suffix *-le* are united in one category, making the analysis stronger and more elegant. Despite this, in chapter 6 I will present one argument for claiming that the notions of "singular" and "plural" are in fact active in the grammar, at least at the level of the morphosyntax, since *iuji* 'you and me' seems to pattern with the other augmented/plural forms (as opposed to with the strictly singular ones) in a subsystem of the person marking system.

2 A map of the Äiwoo verb

2.1 Overview

In the previous chapter I have given a brief illustration of the potential complexity Äiwoo verb forms can achieve. Through this chapter I will give a more comprehensive overview of what morphemes can be found, and where they occur within the larger verb structure. This is based on both published literature and unpublished material about Äiwoo, although the systematization is novel. Table 2.1 presents an illustration of all the known morphemes and their linear position in the string. Here I present the verb structure with the help of a linear template; however, I will use this most as a descriptive tool, and it should not be taken as having any implications on how this structure and the relationship between the different morphemes are best modelled. Below the table I give a first very brief and approximative description of the different slots, some of which will be presented in more depth through the rest of this chapter and the next ones.

Table 2.1: Linear map of the Äiwoo verb

PM	Asp	PM	Stem				PM	A	Q	Post-Verbal Clitics				
-3	-2	-1	[a a′ b c]	[b′ c′]	[b″ c″]	d	a b c	2	3	4	5	6 7	8	

(Stem slot labeled 0; PM slot labeled 1)

-3 Person Marking: S/A markers, non-3ʳᵈ person
-2 Aspectual/modal markers
-1 Person Marking: S/A markers, only 3AUG (and/or GEN.A)
0   0a: Causative prefix *wâ-*
    0a′: O prefix, only 3AUG with four causativized directional verbs
    0b: Root 1
    0c: Undergoer voice marker *-eâ*; applicatives *-ive/-i*
    0b′: Root 2
    0c′: Undergoer voice agreement *-i/-nyi*
    0b″, c″: More stems consisting of [0b′ 0c′]
    0d: Directional suffixes
1   1a: Person Marking: A person markers
    1b: Person Marking: O person markers
    1c: Person Marking: unit-augmented marker
2   Full A argument DP/NP (in undergoer voice)
3   Floating quantifier *dä* 'some'
4   Various aspectal/modality-related clitics
5   Negative clitic *=gu*
6   Future/habitual clitic *=Caa*
7   Circumstantial voice clitic *=Cä*
8   Deictic clitics *=Câ, =Ce*

Through the next sections, I give a review of some of these morphemes. First, in section 2.2 I cover the aspectual/modal markers in slot -2 and other pre-verbal morphemes, not included in table 2.1, found in the pre-stem area. In section 2.3 I cover the morphemes found in the post-stem area (slots 3-8; section 2.3; note that what I label here "slot 2" is actually of a different nature than the other ones, since it contains an NP/DP as opposed to bound morphemes). What I will not cover in this chapter is the stem area itself (slots 0a to 0d), to which I dedicate chapter 3, and all the slots associated with person marking (-3, -1, 1),

covered in chapter 6. Moreover, the circumstantial voice clitic =*Cä* (slot 7) is also covered in chapter 3 due to its ties to other valence- and voice-related morphology, which are found within the stem area.

2.2 THE PRE-STEM AREA

2.2.1 ASPECTUAL/MODAL MARKERS (SLOT -2)

This slot comprises four different morphemes, the two most common ones of which are the aspectual markers *i-* 'perfective'[1] and *ki-* 'imperfective' , shown respectively in (27) and (28). Another prominent morpheme – slightly less frequent than the first two – occurring in this slot is the irrealis mood marker *nâ-*, shown in (29) (*nä* is a phonological variant, cf. chapter 1, section 1.5.3).

(27) -2 ob 4 8   (Baking 77)
      i-ebi=to=wâ
      PFV-bake.AV=CS=DEIC.DIST
      'It's baked now'

(28) -3 **-2** ob 8   (Baking 83)
      *de-**ki**-ebi=kâ*
      12AUG-**IPFV**-bake.AV=DEIC.DIST
      '(When) we were baking'

(29)   -2 ob 1a   (Baking 19)
      go   ***nä*-bi-no**
      so.that IRR-bake.UV-1MIN
      'So that I can bake'

The least common member of this category is the apprehensive marker *de*, shown in (30), which conveys the idea that the event in question is undesirable.

(30)   -2   ob ob′ 3   (Täpeo 45)
      nyenaa ***de*** *baki-ee=dä*   *ngâ*   *nuwopa*
      tree   APPR break.UV-go.up=some LOC.PREP   house
      '[We were worried that] a tree would fall down on the house'

This last marker is problematic because its phonological properties differ from the other three: as can be seen in (30), it often carries its own stress, and it is therefore often (but not always) transcribed as a free-standing word. However, the two sentences below show that the despite the different stress pattern the position of *de* is the same as the other aspect markers, i.e. before *lu-* 3AUG (31) and after the other person markers (32).

(31)   -2   -1 ob ob′ 4   (Education 90)
      go   *pe-dowâlili* ***de*** *lu-po-mana=eo*   *nyopu*
      so.that COLL-child APPR 3AUG-go-very=PROH   far
      'So that the children wouldn't have to go so far away'

(32)   -3 -2   ob ob′ 4 8   (Moliki 102)
      mi-ku-wâ=nâ   *mo kele mi-**de*** *wee-doo=eo=we*
      2MIN-IPFV-go=DEIC.DIST but here 2MIN-**APPR** go.up-like.that=PROH=DEIC.PROX
      'You go, but don't go up here'

---

[1] Recent insights have showed that 'perfective' might not be the best semantic characterization of the meaning of this prefix (Åshild Næss, p.c.). However, this issue is orthogonal to the purpose of my thesis, and I keep therefore the label 'perfective' and the gloss PFV. For the other morphemes in this slot (*ki-* 'imperfective', *nâ-* 'irrealis' and *de* 'apprehensive'), I will not give a precise semantic analysis either, and rely on the available literature. Although the latter two seem to have more modal semantics than purely aspectual, I include them in this section due to their distribution, i.e. their being in paradigmatic alternation with the more clearly aspectual markers *i-* 'perfective' and *ki-* 'imperfective'.

In other words, although *de* is in paradigmatic alternation with the other aspectual/modal markers (to the best of the current knowledge, at least), it shows different phonological or prosodic properties. The fact that morphemes with differing phonological properties are placed in the same positions speaks in fact against a slot-type analysis, and in favour of one based on hierarchical structures (where *de* would be an element at the same hierarchical position or height of the other aspectual/modal markers), which is in fact what I will argue for throughout the following chapters. Nonetheless, throughout this chapter I keep the slot metaphor as a descriptive tool.

An interesting phenomenon concerning *nâ-* 'irrealis' and *de* 'apprehensive' is one of metathesis at the phonological level (Næss ms.(a)). In fact, if these are combined with the 1MIN *i-* prefix, which would precede them in slot -3, it seems as though the person marker and the first consonant of the modal prefix swap place, giving rise to the portmanteau morphemes *nyâ-* '1MIN.IRR' and *je-* '1MIN.APPR', as shown in (33)-(34). Note that /ⁿd/ and /ⁿd͡ʒ/ are regularly neutralized to /ⁿd͡ʒ/ before /i/; in the same way, /n/ and /ɲ/ are neutralized to /ɲ/ before /i/.

(33)   -3.-2 ob   (Vämiou 102)
    i-ku-pu-lâ=kaa   *ngä*   *sapulâu*   ***nyâ**-tokoli*
    1MIN-IPFV-go-go.out=FUT LOC.PREP men's.house **1MIN.IRR**-sit
    'I will go to the men's house and sit down' (*i-nâ* /inɒ/ → /niɒ/ → /ɲɒ/)

(34)   -2 ob ob′ od 1a 1c 7   ob 1a 1c 7
    go   *ku-wââ-mana-mä-i-le=nä*   *kä-i-le=nä*
    because IPFV-forbid.UV-very-DIR1-3AUG-UA=CV say-3AUG-UA=CV

          -3.-2 ob od 4   (Temââ 278)
    maa   *je-o-mä=eo*
    PARTCL **1MIN.APPR**-go-DIR1=PROH
    'Because they forbade me strongly to come here' (*i-de* /iⁿde/ → /ⁿdie/ → /ⁿd͡ʒe/)

This metathesis must be morphologically triggered, because there is no inherent phontactic constraints against the sequences /inɒ/ or /iⁿde/, cf. e.g. *inâ* 'he/she', *mi-de* '2MIN/AUG-EVIT' (see (32) above). At the same time, the metathesis operates at the phonological level, since it swaps two phonetic segments as opposed to two morphemes: if the person marker and the aspect/mood prefix were simply simply swapped place one would expect the unattested **nâi~näi* and **dei*.

On the basis of the currently available data it is not entirely clear whether or when an aspect/modal prefix is obligatory or not. They occur in the large majority of verb forms, and most exceptions consist of stative predicates (e.g. *laki* 'small', *eolo* 'big'). However, the high vowels /i/ and /u/ are regularly devoiced or dropped when unstressed; therefore, it might also be the case that a perfective *i-* prefix is not overtly realized for phonological reasons.

2.2.2 OTHER PRE-VERBAL MORPHEMES

At the left edge of Äiwoo verb forms one can find a series of bound morphemes labelled "generic bound nouns" (Næss 2017b), which have among their function that of nominalizing verbal expressions or creating (a functional equivalent of) relative clauses. The generic bound noun *mi-* (35) is the most semantically general of the group, with the meaning 'the one that [...]'. In (36), *de-* has the generic meaning of 'the thing that [...]', whereas in (37) *nye-* is 'the place where [...]'. Note that in all these cases, the generic bound nouns behave as arguments of the predicate: in other words, they seem to behave like other common nouns, with the only differences being their high semantic generality and their phonological boundness; see Næss (2017b) for a more thorough discussion of their status across the root-affix divide.

(35)   -1 ob od   (Næss 2017b: 920)
    ***mi**-lu-pu-mä*   *ngâ*   *dä*   *nuumä*
    BN:one-3AUG-go-DIR1 LOC.PREP some village
    'Those who have come from other villages'

(36)   -2 ob oc od 1a   8   (Däive 58)
de-nâ-lopâ-ive-wâ-no=ngâ
BN:thing-IRR-talk-APPL-DIR2-1MIN=DEIC.DIST
'All I wanted to say' (lit. 'the thing(s) that I (wanted to) talk about')

(37)   -2   ob 1a 1c 7 8   (Crab 47)
nye-ku-wäämo-i-le=nä=nâ
BN:place-IPFV-begin-3AUG-UA=CV=DEIC.DIST
'The point where they (two) were to start'

One reason not to analyze these morphemes as belonging in a "slot -4" is their behaviour with respect to another pre-verbal morpheme, the negative particle *ba*. Negation in Äiwoo is bipartite, consisting of this pre-verbal particle and of the clitic *=gu* in slot 5 (see the discussion in section 2.3.2.3 below for more details). The generic bound nouns and the negative particle *ba* do not seem to have a fixed order: they can swap places depending on what scopes over what. For example, in the following sentences, the position of *mi-* 'one' and the negative morpheme *ba* changes depending on their scope relationship. In (38a), *ba* scopes over *mi-*, giving the reading 'not the ones that...', whereas in (38b) it is the opposite, i.e. 'the ones who do not...'.

(38) a.   ob   5   (Childbirth 309/310)
      *nuwola nupää=to=wâ   **ba**   **mi**-päko=gu*
      old   cloth=CS=DEIC.DIST **NEG** **BN:one**-good=NEG
      'Old clothes, not good ones' (NEG > one)

      b.   -2 oa ob   5   (Nyagova3 10)
      *sime   **mi-ba**   ku-wâ-une=gu*
      person **BN:one-NEG** IPFV-CAUS-true=NEG
      'People who don't believe in it' (one > NEG)

In the available data, this behaviour is only attested for the bound noun *mi-*, and not for the other ones. More research is needed in order to shed light about the distributional properties of the generic bound nouns and their interaction(s) with other morphemes; if it is confirmed that they can attach to a larger set of hosts than only verb forms, it might be appropriate to analyze them as clitics instead of prefixes, following the classical criteria in Zwicky & Pullum (1983). However, for the purpose of this thesis I leave this issue aside, and follow the published literature about Äiwoo in glossing them as prefixes.

Finally, the two particles *lâ, le* 'DEIC.DIST, DEIC.PROX' (occuring both in pre-verbal and pre-nominal position) are highly frequent; however, their function is poorly understood. As shown in (39)-(40), they often co-occur with the deictic clitics *=Câ, =Ce* in slot 8, mostly matching in deictic value (i.e. distal with distal and proximal with proximal, although mismatches are attested as well), but both the pre-verbal particle and the clitic can also occur on their own.

(39)   -2 ob ob′ 4   8   (Heron 8)
*lâ   i-wo-lâ=to=**wâ***
DEIC.DIST PFV-go-go.out=CS=**DEIC.DIST**
'He went out'

(40)   -2 ob od 4 8   (Childbirth 315)
*nyie **le**   ku-pulo-kä=to=**we***
fire **DEIC.PROX** IPFV-burn-DIR3=CS=**DEIC.PROX**
'(When) the fire is burning'

These particles pattern like other more clearly deictic elements in showing an alternation between a proximal form with *e* and a distal form with *â* (cf. e.g. *kele* 'here' vs *kâlâ* 'there', *enge* 'this' vs *eângâ* 'that'). However, the deictic particles *lâ, le* and the corresponding clitics clearly do not have referential function in the manner of e.g. a canonical demonstrative pronoun. Although they are not (obviously) deictic,

especially the distal forms (*lâ, =Câ*) seem to have a range of poorly understood uses that might have to do with pragmatics and the organization of discourse; see Vaa (2006) for some proposals and ideas regarding the use and function of these particles and of the clitics. For the purpose of this thesis, due to the scarce knowledge about these elements I decide to ignore them.

2.3   THE POST-STEM AREA (SLOTS 3-8)

2.3.1   THE FLOATING QUANTIFIER *dä* (SLOT 3)

The morpheme *dä*, glossed as 'some' and analyzed in Vaa (2006: 28–32, 60–68) as a quantifier, has a complex distribution. It can appear in a NP/DP[2] in various positions: in (41a) it is before the noun, in (41b) it is after it, and in (41c) it is in both positions. These positional differences are not well understood.

(41) a. [***dä*** *penyibe*] *ko-lâ-mä=kaa*   *ngä*   *sapulâu=kâ*   (Explanation 176)
   some old.man lie-go.out-DIR1=FUT LOC.PREP men's.house=DEIC.DIST
   'A man is lying nearby in the men's house'

   b. *nââ*   *ki-geli-ea-kä*   *ngângo* [*ibete*   ***dä***]   (Explanation 174)
   speech IPFV-set.out-bad-DIR3 to   friend.3MIN **some**
   'He uses bad language towards one of his friends' (i.e. he swears)

   c. *li-mele-kä-le*   *ngä*   [***dä*** *nyenaa* *mi-olo*   ***dä***]   (Flying Fox 8)
   3AUG-fly-DIR3-UA LOC.PREP **some** tree   BN:one-big **some**
   'They flew to one of the big trees'

Moreover, it can appear not within the DP it quantifies, but in slot 3, i.e. cliticized to the right of the verb form and to the right of a possible overt A DP (in undergoer voice). In sentence (42a), *dä* clearly refers to the tobacco, introduced in the preverbal position usual for O arguments in undergoer voice (note that the sort of topicalized/dislocated structure in the English translation might be an artefact of attempting to render the Äiwoo constituent order in English). In (42b), *dä* comes after the A argument, and refers again to the O argument (*däjelâ* 'something').

(42) a.   -2 ob ob′ 1a **3**   (Gardening 349)
   kele   *nunugo-ee*   *i-viteia-eopu-mu=**dä***
   here   **tobacco-DEM.PROX**   PFV-sell.UV-also-2MIN=**some**
   'This tobacco, do you sell some of that too?'

   b.   -2 oa oa′ ob od   2   **3** 8   (Vaa 2006: 29)
   däjelâ   *le*   *i-wâ-lu-woli-wâ*   [*ibesi-ji*]ₐ=***dä***=*ne*
   something DEIC.PROX PFV-CAUS-3AUG-go.down-DIR2 friend-12MIN=**some**=DEIC.PROX
   'Our friend here has put down something'

In these sentences, *dä* appears in a different position than within the DP it quantifies, showing thus floating quantifier behaviour (such as in English [***all** the students*] *have read the book* vs [*the students*] *have* [***all***] *read the book*; see i.a. Bobaljik 2003 and references therein). Given that the focus of the present thesis is on the Äiwoo verb complex, I will only concentrate on *dä* as a floating quantifier. In chapter 5, section I will present the evidence on the basis of which I argue that when *dä* is cliticized to a verb form (in slot 3), the argument it quantifies has been moved from its base-generated position, stranding *dä*.

---

[2] Through the rest of the thesis I employ the label DP (as opposed to NP) for a nominal constituent. This should be taken as a mere notational choice, and not as a theoretical stance.

2.3.2 Post-verbal clitics (slots 4-8)

2.3.2.1 Overview

Through the rest of the thesis, I will refer to the morphemes occurring in these positions as the "post-verbal clitics". In the published literature these are analyzed as clitics (as opposed to affixes) because they have looser restrictions on what they attach to (cf. the criteria distinguishing between affixes and clitics from e.g. Zwicky & Pullum 1983). In undergoer voice an overt A argument DP occurs to the right of the verb form, but to the left of these clitics; see e.g. the DP *gipiä* 'brother in law' in (43), to the left of the clitics *=jo=wâ* (slots 4 and 8). This overt A DP can be arbitrarily large, as illustrated in (44) – repeated from (13) above – where the DP in question even contains a relative clause ('the one [sitting in the boat]'). As mentioned earlier, although I label this position "slot 2", an analysis of Äiwoo as having a templatic morphosyntactic system would have to postulate a slot of a quite different nature than the other ones, since it does not contain bound morphemes, but a whole phrasal constituent; once again, I maintain the "slot" metaphor as a descriptive tool. When there is no DP in this position, the clitics attach to the right edge of the verb form (see several of the examples above, e.g. (38)-(40)).

(43)   -2 ob od   __2__ **4**   **8**   (Nubulaa 249)
   *nupo   lâ   i-**pa**-kä*   [*gipiä*]ₐ=***jo***=***wâ***
   net   DIST PFV-**fetch**.UV-DIR3 brother-in-law.3MIN=**PROG**=**DEIC.DIST**
   'His brother in law took the net'

(44)   -2 o**b**   _____ **2** _____
   *ngaama lâ   ba   i-**kää***   [*me-ki-tokoli-wo-mä*   *ngâ*
   if   DEIC.DIST NEG   PFV-**know**.UV   BN:person-IPFV-sit-go.down-DIR1   LOC.PREP
   _____ **5**   **8**   (Nyeliwânubona toponu 141)
   boat]ₐ=***gu***=***nâ***
   boat=**NEG**=**DEIC.DIST**
   'If the one sitting in the boat doesn't know'

For illustration purposes, sentence (45) shows four post-verbal clitics being used on the same verb form, i.e. all of them apart from the negative clitic *=gu* (slots 4, 6, 7, 8); see the next sections for explanations of the individual elements.

(45) -2   ob   od 1a **4**   **6**   **7**   **8**   (Fermenting 62)
   *ki-vängä-kä-i=**to**=**waa**=**kä**=**nâ***
   IPFV-eat.AV-DIR3-3AUG=**CS**=**FUT**=**CV**=**DEIC.DIST**
   'They start eating it'

2.3.2.2 Slot 4: aspectual/modal clitics

In this slot, exemplified e.g. in sentence (43) above, one finds a series of aspectual/modal clitics of different sorts. Again, it is not my purpose here to give a precise semantic characterization of these clitics and their combinations with other elements (e.g. the aspect prefixes in slot -2), but only to account for their distribution. The two most common ones are also the most clearly aspectual ones: *=to* 'change of state' and *=jo* 'progressive', illustrated in (46)-(47) below (Næss & Boerger 2008: 190–191). Note that these are in paradigmatic alternation, as all morphemes categorized as belonging to the same slot.

(46) -2   ob ob′ **4**
   *i-lobâku-usi=**to***
   PFV-fold-again=**CS**
   'She had folded it again (the object was presented to me in a folded state)'

(47)   *i-lobâku-usi=**jo***
      PFV-fold-again=**PROG**
      'She had folded it again (I saw the act of folding)'

Parallel to these, at least in form, are the two clitics *=ta* and *=ja*, of rather unclear reading. In the available literature, the former is glossed as 'just', and it is often used to downplay the importance of a request by the speaker, in order to be more polite (similarly to how one uses the form *could* instead of *can* in English, e.g. *could you just do X?*); the latter is glossed 'hortative', and the difference between the two is as yet not well understood. Both are illustrated in (48)-(49) below.

(48)   -3 -2 ob od **4**   (Moliki 355)
      *ji-na-savele-kä=**ta***   *ngâ*   *nuwopa*
      12MIN-IRR-stroll-DIR3=**just** LOC.PREP house
      'Let's go to the house'

(49)   ob ob′ **4**   (Dancing leluwo 194)
      ile   *nâbu* *ee*   *wagu-usi=**ja***   *ngâ*   *nââu-de*
      DEM.PROX song HESIT say.UV-again=**HORT** LOC.PREP language-12AUG
      'This song, uhm, say it again in our language'

The last morpheme occurring in this slot is *=eo/=io* 'prohibitive', which is only attested in combination with *de* 'apprehensive' to create negative imperatives (50). This morpheme is not attested as co-occurring neither with with *=to* or *=jo* nor with *=gu* (see section 2.3.2.3 below), so it cannot be confirmed whether its position is in slot 4 or slot 5; my assigning it to slot 4 is purely arbitrary, although this does not have theoretically significant bearings on the rest of the thesis.

(50)   -3 -2 ob ob′ od 4   (Nyilieteina 700)
      *mi-de-wo-lâ-kä=**eo***
      2MIN-APPR-go-go.out-DIR3=**PROH**
      'Don't go out!'

2.3.2.3   SLOT 5: NEGATIVE CLITIC *=gu*

To the right of the aspectual/modal clitics one finds the negative clitic *=gu*. As mentioned in section 2.2.2, the default negation construction is Äiwoo is a bipartite one – something very common in Oceanic languages (Vossen & van der Auwera 2014) – consisting of the pre-verbal particle *ba* and this post-verbal clitic *=gu* in slot 5, as illustrated in (51) or (44) above, where an overt A DP intervenes between the verb and the post-verbal clitic area. Example (52) shows the negative clitic in combination with the aspectual clitic *=to* 'change of state'. Notice that here *=to* scopes over the negation, given the reading 'not anymore' (i.e. now > NEG); see Roversi & Næss (ms.) for more details about the scope interaction between negation and other elements.

(51)   -2 ob **5**   (Childbirth 378)
      ba   *ki-vängä=**gu***
      NEG IPFV-eat.AV=**NEG**
      'She does not eat'

(52)   -2 ob **4** **5**   (Crab 78)
      ba   *ku-basiki=**to**=**gu***
      NEG IPFV-run=**CS**=**NEG**
      'He wasn't running anymore'

2.3.2.4 SLOT 6: FUTURE/HABITUAL CLITIC *=Caa* (AND THE CONSONANT ALLOMORPHY PATTERN)

Following negation and the aspect/modal markers (if present) is the future/habitual clitic *=Caa*[3]. I will consistently gloss this as 'future', although it does not necessarily mark future tense reference, but also the habitual character of an action regardless of tense. This is illustrated in (53); this use of a future marker is not dissimilar from how *will/would* can be used in English (for the sentence below, a translation such as '(Every day) she would wait until her husband came back, and then they would eat' could seem to fit the semantics). A more clearly future tense reading of this clitic can be seen in (54).

(53)   -2   ob   od   **6**
        *i-vevaale-kä=**naa**   tumä   pelivano   i-ipolâ-mä*
        PFV-wait-DIR3=FUT   father.3MIN   children   PFV-step.out-DIR1

              -2 -1   ob   1c   6   8   (Moliki 20/21)
        *ä   i-li-pängä-le=**naa**=kâ*
        and   PFV-3AUG-eat.AV-UA=FUT=DEIC.DIST
        'She waited until her husband came back, and then they ate (implied: habitually/every day)'

(54)   ob   ob′ od   1a   **6**   (Dancing leluwo 235)
        *käli-epu-wâ-no=**ngaa**   ki-nyigi=kâ*
        sing.UV-also-DIR2-1MIN=FUT   IPFV-one=DEIC.DIST
        'I will sing another one'

The initial consonant of this clitic varies depending on the element strictly adjacent to its left, following a rather complex pattern. This allomorphy pattern is also followed by the clitics *=Cä* 'circumstantial voice' (slot 7) and *=Câ/=Ce* 'DEIC.DIST/PROX' (slot 8), so I treat them together. There are 5 clear forms, plus possibly two more forms which might be only variants of one of the first 5. In (55) I present an overview of the allomorphy pattern, listing all the consistent alternations (illustrative examples for all forms can be found in appendix A); the reader should be aware that there are some exceptions in the corpus, which have not been accounted for so far. It should be clear that there is no simple way in which the elements determining the consonant with which a clitic will surface could constitute a natural class: for example, it is difficult to imagine a way to group together quite disparate elements such as a negative clitic, a directional marker, a verb meaning 'go' and 3MIN suffixes. For some of these patterns, a phonological argument could be made. For example, almost all elements triggering the *=wV* form end in a back vowel; however, this is not consistent, as *doo* 'what' triggers the *=lV* form, and e.g. *to* 'go in' triggers the elsewhere *=kV* form. In other words, the allomorphy seems to be strictly lexically determined, i.e. the consonant is chosen on the basis of the lexical item to which the clitic is directly adjacent. In a generative framework, this entails that the choice of allomorph is made after the linearization process, i.e. not in syntax proper, but at PF.

(55)   a.   *=ngV* after:
             · 1MIN suffixes *-no, -∅* (see chapter 6)
             · 12 suffixes *-ji,-de*
        b.   *=lV* after:
             · 3AUG suffix *-i*
             · the word *doo* 'what'
             · the word *iie* 'who'
        c.   *=wV* after:
             · 2MIN suffix *-mu*

---

[3] There are very sparse attestations of *=Caa* preceding the negative clitic instead of following it. For the time being, nothing can be concluded on the basis of these few examples alone.

- 1AUG suffix -*ngopu*
- the word *lâto* 'then' (likely segmentable into *lâ=to* DEIC.DIST=CS, so that then it is =*to* that triggers the =*w*V form)
- the word *doo* 'like that' (homophonous with *doo* 'what', but consistently taking a different allomorph of the clitics)
- the word (*w*)*oo* 'how many'
- after the verb *to* 'be, exist'
- after the aspect/modal clitics =*to*, =*jo*, =*eo*
- Variant 1: sometimes without any consonant after 2AUG suffix -*mi* (=*w*V is also attested); it is possible that the consonantless =V form is the underlying one for these cases, and a glide /w/ is inserted to break the vowel hiatus (Åshild Næss, p.c.)
- Variant 2: possibly =*pw*V after the clitics =*ta*, =*ja* (it is unclear whether the sequences *taapwâ, jaapwâ* can be segmented into =*ta*/=*ja*=*Câ*)

d.   =*n*V after:

- 3MIN markers (normally ∅, but also overt 3MIN endings on relational nouns marked for (inalienable) possession, such as body parts and family nouns); see chapter 6
- the unit-augmented suffix -*le*
- the negative clitic =*gu*
- the floating quantifier *dä* 'some' and other quantifiers such as *bäjä*/*mäjä* 'other'
- the directional marker -*kä* DIR3
- the verb *wä*/*wâ* 'go'
- the adverb *ngä* 'yet'
- the adverbial anaphora *ngämi* 'there'
- For =*Câ*/=*Ce*: after the circumstantial voice clitic =*Cä*

e.   =*k*V: elsewhere

In slot 7 one finds the circumstantial voice clitic =*Cä*; I will present this in greater detail through chapters 3 and 5. Finally, the rightmost elements of the series (slot 8) are the two deictic clitics =*Câ*, =*Ce* 'DEIC.DIST, DEIC.PROX', already mentioned in section 2.2.2 in connection to the corresponding particles *lâ, le*. These clitics are frequently found attaching to nominals as well as to verbs, and their exact function and semantics are at best unclear; I will therefore ignore them for the purpose of the present thesis.

The stem area 3

3.1 OVERVIEW OF THE ORIGINAL CONTRIBUTIONS

This chapter gives a detailed description and analysis of a number of morphemes occurring in what I have labelled in chapter 2 'slot o', i.e. the stem area. Due to this chapter's descriptive nature, it builds rather heavily on all recent literature (published and unpublished) about Äiwoo as listed in chapter 1, section 1.5.2.

In addition to this, the chapter contains a number of original contributions and novel analyses. First of these, in section 3.2.2.3, is the reinterpretation of the opposition between "A-verbs" and "O-verbs" (Næss 2015b) as an opposition between inflectional classes, where each class is distinguished by different (combinations of) affixes marking actor voice and undergoer voice – where these correspond respectively to A-verbs and O-verbs. Second, I elaborate throughout the whole chapter an analysis of the attested serial verb constructions in terms of hierarchical structures, as opposed to linear sequences. This is based mostly on the distribution of the undergoer voice agreement marker *-i/-nyii* (already recognized as such in Næss ms.(b)), primarily for its clearly recursive behaviour; cf. section 3.3.1. Third, novel considerations are made about the causative prefix *wâ-* and the undergoer voice marker *-eâ* in terms of what they can be combined with, something which I argue predicts their distribution; cf. sections 3.4.1 and 3.3.2. Fourth, I systematize the different semantics of the argument introduced by the circumstantial voice marker *=Cä* and the two applicative suffixes *-ive* and *-i*, comparing these to the Proto Oceanic suffixes **-i* and **-akin[i]*; this is summarized in table 3.5, section 3.4.3. Finally, I discuss the characteristics of the directional suffixes in terms of the divide between derivation and inflection, and argue they are best viewed as derivational (or at least, more so than they are inflectional); cf. section 3.5.

3.2 SYMMETRICAL VOICE ALTERNATIONS

3.2.1 ASYMMETRICAL AND SYMMETRICAL VOICE SYSTEMS

One prominent characteristic of Äiwoo is its symmetrical voice system, analyzed as such for the first time in Næss (2015b). Symmetrical voice systems (often also called "Western Austronesian voice systems") differ in some fundamental ways from asymmetrical ones, i.e. the ones known from more familiar languages such as Indo-European ones. The analysis of these systems has been a well-debated matter in both the typological/functionalist and the more formal/generative literature (see Chen & McDonnell 2019 for a recent overview). Here, I will give a short overview of their most relevant characteristics; in chapter 5 I will discuss these voice systems from a more theoretically-informed perspective.

In a language with an asymmetrical voice system, such as English or French, there are typically two identifiable voices, active and passive; some systems add to this a middle voice, or an antipassive. The antipassive can be conceived as a mirror image of the passive voice: where the passive voice demotes the A argument of a transitive predicate, the antipassive voice demotes the O argument. Antipassive constructions are not an exclusive of languages which present ergative characteristics, the same way as passive constructions are not unique to accusative languages. In fact, some languages even show both, e.g. Georgian, Mayan languages, Inuit and Halkomelem (Polinsky 2017: 329).

In systems such as these, the active voice can be analyzed as the "basic" or "default" one. Both the passive and the antipassive voice, on the other hand, show clear asymmetries with respect to the active voice. First, one of the arguments of a transitive clause is demoted (i.e. eliminated from the verb's

argument structure) and the clause is turned into an intransitive one; the demoted argument may appear as an adjunct (i.e. in English with a PP introduced by *by*), although whether this is possible or not varies cross-linguistically (Siewierska 2013). Second, the (anti)passive construction itself is most often more morphosyntactically marked than the active one (Polinsky 2017). In a symmetrical voice systems, on the contrary, the different voices are all equally marked: there is none which is clearly identifiable as the "basic", "default" or "unmarked" one from which all the other ones are derived. Moreover, all voices are equally transitive (although this is has been a matter of debate; cf. Chen & McDonnell 2019), as opposed to the intransitive (anti)passive voice. Therefore, systems of this kind are taken neither to show (up to several) passive nor antipassive voice(s), but to be a different kind of system altogether (Foley 2008). In the Tagalog sentences in (56a-e), the verb *bili* 'buy' takes several different forms. Each verb form corresponds with a different argument being marked by *ang* (respectively the actor, the patient/undergoer, a locative, an instrumental, and a benefactive). I follow here Foley (2008) in leaving *ang* unglossed (in order not to make any claim about its precise characterization), as well as not using different terms for the different voices, but only a generic gloss vc for 'voice'. The reader should be aware that the terminological variation regarding these phenomena is abundant and at times confusing; I will use the terms "actor voice" for the form of the verb that correlates to the (more) agentive argument being singled out (56a), and "undergoer voice" for the one correlating to the more theme- or patient-like argument being singled out (56b). The other voices are often called "locative voice" (56c), "instrumental voice" (56d) and "benefactive voice" (56e) in the Philippinist literature, and these terms are subsumed together under "circumstantial voice"; since Äiwoo does not make as many distinctions, these are less relevant to the discussion below.

(56) Tagalog (Malayo-Polynesian, Philippines; Foley 2008: 23)

    a. *b<**um**>ili ng   isda sa   tindahan **ang lalake***
       <vc>buy CORE fish OBL store   **ANG man**
       'The man bought fish in the store'

    b. *bi-bilh-**in**   ng   lalake sa   tindahan **ang isda***
       IRR-buy-**VC** CORE man   OBL store   **ANG fish**
       'The man will buy the fish in the store'

    c. *bi-bilh-**an**   ng   lalake ng   isda **ang tindahan***
       IRR-buy-**VC** CORE man   CORE fish **ANG store**
       'The man will buy fish in the store'

    d. ***ipam**-bi-bili ng   lalake ng   isda **ang salapi***
       VC-IRR-buy CORE man   CORE fish **ANG money**
       'The man will buy fish with the money'

    e. ***i**-bi-bili   ng   lalake ng   isda **ang bata***
       VC-IRR-buy CORE man   CORE fish **ANG child**
       'The man will buy fish for the child'

Systems like the one illustrated here are common in Western Austronesian languages (a geographical categorization rather than a phylogenetic one). Interestingly, these systems are normally not found in Oceanic languages. A symmetrical voice system is reconstructed to be part of Proto Austronesian due to its occurring in both Malayo-Polynesian languages and several of the Formosan languages of Taiwan (see e.g. Chen & McDonnell 2019 for a recent overview, and references therein). However, it is thought that Proto Oceanic had already lost it, and reanalyzed it into a transitivity opposition (Lynch et al. 2002). This leaves Äiwoo as the sole (per now) Oceanic language which has been claimed to have a symmetrical voice system[1] – albeit a somewhat different one from the more familiar ones (such as e.g. Tagalog or Indonesian), something which will be explored in more depth in the following section.

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[1] The Oceanic language Nehan, spoken on an island close to Bougainville (Papua New Guinea) has been analyzed in Glennon (2014) as showing syntactic ergativity, with an opposition between transitive and antipassive constructions; however, the

3.2.2 Symmetrical voice in Äiwoo

3.2.2.1 Næss (2015b): A-verbs and O-verbs

What is found in Äiwoo is relatively different from a clearcut system of affixes like the one of Tagalog shown in (56). Instead, there is an alternation between two types of two-argument clauses (in what follows I will use the term 'transitive' pre-theoretically, simply to mean a clause or a predicate with two core arguments; see Næss 2015b for arguments as to why both these clause types are to be considered transitive). One type, illustrated in (57), has A V=CL O order (where =CL stands for the post-verbal clitics in slots 4 to 8), and the A argument is indexed by prefixes (slots -3 or -1), in this case *li-* 3AUG.

(57)	_____A_____	-1	ob	4	___O___	(Næss 2015b: 274)
	pe-sime-engâ		*li-epave=to*		*sii=kâ²*	
	COLL-person-DEM.DIST		**3AUG**-cook.A=CS		fish=DEIC.DIST	
	'The people cooked fish' (A V=CL O; prefixes)					

The other type, illustrated in (58), has O V A=CL order, and the A argument is marked by suffixes, here *-i* 3AUG. Example (59), repeated from (43), is an illustration of an O V A=CL sentence with two overt arguments, where the A is in slot 2 (i.e. to the left of the post-verbal clitics, here in slots 4 and 8). In both sentences, recall that the deictic particle *lâ* does not refer to any argument; as noted in chapter 2, section 2.2.2, its exact functions are as yet unclear, and for the purpose of this thesis they can be ignored.

(58)	O		-2	ob	1a	4	8	(Sulu 35)
	sii	*lâ*		*ki-epavi-**i**=to=wâ*				
	fish	DEIC.DIST		IPFV-cook.O-**3AUG**=CS=DEIC.DIST				
	'They cooked the fish' (O V (A)=CL; suffixes)							

(59)	___O___		-2	ob	od	2 (A)	4	8	(Nubulaa 249)
	nupo	*lâ*		*i-pa-kä*		*gipiä=jo=wâ*			
	net	DEIC.DIST		PFV-fetch.O-DIR3		brother-in-law.3MIN=PROG=DEIC.DIST			
	'His brother in law took the net' (O V A=CL)								

Word order and the locus of person marking are not the only differences between (57) and (58). The verb meaning 'cook' appears in the form *epave* in the former, and *epavi* in the latter. In Næss's (2015a,b) terminology, the verbs heading transitive clauses of the first type (AVO, agent prefixes; e.g. *epave* 'cook') are called A-verbs; the ones heading transitive clauses of the second type (OVA, suffixes; e.g. *epavi* 'cook') are called O-verbs. Tthese two notions are functionally equivalent to actor voice and undergoer voice (henceforth, respectively AV and UV), and the factors governing their usage are connected to pragmatic prominence of the voice-selected arguments (see Næss 2015b for details). In section 3.2.2.3 I propose that A-verbs and O-verbs can be treated also not only functionally but also formally as AV and UV, and will thus use these terms and glosses from there on.

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clause alternation system could also be analyzed as being similar to that of Äiwoo, i.e. a symmetrical voice system, although such an analysis has not formally been proposed (Åshild Næss, p.c.).

² The deictic clitic *=kâ* in (57) is to be interpreted as referring to the nominal argument *sii* 'fish' only, and not to the whole verb form (where it would be in slot 8). When a deictic clitic is in slot 8, i.e. attaching to the verb, it occurs to the left of an overt O argument (in this type of transitive clause), as shown in (i). Compare also (ii), where a deictic clitic on the O nominal co-occurs with a deictic clitic in slot 8.

(i)	-3	-2	ob	od	6	8	___O___	(ii)	-2	ob	8			
	*me-ku-wäsele-kä=naa=**kâ***						*vängä*		*ku-nu=**kâ***			*ilâ*	*nuwoi=**kâ***	
	1AUG-IPFV-make.A-DIR3=FUT=**DEIC.DIST**						meal		IPFV-drink.A=**DEIC.DIST**			dem.dist	water=**DEIC.DIST**	
	'We prepare a meal'						(Burials 56)		'She only drinks water'				(Childbirth 379)	

3.2.2.2   Lexical alternations between A-verbs and O-verbs

The Tagalog examples in (56) illustrate clearly how different combinations of affixes attached to a single root indicate different voice constructions (actor voice, undergoer voice, etc.). In Äiwoo, the situation is far from being as neat. There appears to be no segmentable morphological element which derives A-verbs from O-verbs or vice versa, or both from some common root. What is found, instead, is verbs occurring in couplets, one A-verb and one O-verb; an example mentioned earlier is *epave* 'cook.A' vs *epavi* 'cook.O'. These couplets mostly follow a series of patterns, illustrated in table 3.1; in addition to these, there are a number of couplets in which the A-verb and the O-verb do not follow any clear pattern. A more detailed description of these patterns is given in section 3.2.2.3 below.

Table 3.1: Patterns of form alternation between A-verbs and O-verbs

Pattern	A-verb	O-verb	Example
1a	-e	-i	*läke, läki* 'chop'
1b	-ei/oi	-i	*gei, gi* 'move, turn'
1c	-∅	-i	*lotâlâ, lotäläi* 'prepare'
2a	-ou	-u	*tou, tu* 'bring'
2b	-âwââ	-ââ	*lâwââ, lââ* 'build'
2c	-lowe	-lu	*tâlowe, tâlu* 'cut long flexible object'
3	-ei	-(i)li	*kei, kili* 'dig'

Although none of these endings are obviously segmentable, Næss (2015b) points out how the *-i* ending of O-verbs (in pattern 1) has the phonological behaviour of a suffix. Normally, unstressed /i/ and /u/ are consistently devoiced or completely dropped in Äiwoo in certain positions, so that e.g. *bolevi* 'shore' is pronounced [ᵐboˈlev]. However, the last /i/ of *epavi* 'cook.O' is never dropped, i.e. this verb is never pronounced *[eˈpav]. In a similar fashion, the final *-e* of A-verbs following pattern (1a) undergoes phonological processes more typical of a suffix than of a root-final vowel. For example, the verb *popoe* 'kick.A' (cf. *popoi* 'kick.O') is pronounced [popweː]; the /o/ preceding the /e/ has been desyllabified and turned into a glide, and the /e/ has been lengthened as a result.

3.2.2.3   An alternative to A-/O-verbs: inflectional classes

The analysis described in section 3.2.2.2 claims that while e.g. Tagalog marks different voices with a series of (combinations of) affixes, Äiwoo does the same by deploying verb couplets, of which one element is an "A-verb" (i.e. functionally equivalent to actor voice) and the other is an "O-verb" (functionally equivalent to undergoer voice); these verbs follow a series of patterns. Given that the most common pattern (number 1) seem to have elements behaving as suffixes (the final vowels /e/ and /i/), it is possible to attempt an analysis where these indeed are suffixes.

This alternative analysis, more along the lines of the one presented for Tagalog, posits that there is in fact segmentable morphology. Verb forms like *epave* 'cook.A' and *epavi* 'cook.O' are not two different lexemes, but only one, with different voice inflection: *epav-e* is AV, and *epav-i* is UV; *-e* and *-i* are voice marking suffixes, and the bare root **epav* will never appear on its own simply because all (two-place) verbs must be inflected for voice. A consequence of this type of analysis is that the notion of A-verbs and O-verbs is now superfluous, and traced back to the more familiar voice opposition system with apposite marking morphology (see e.g. Norwegian, where present tense has an active form *spise-r* 'eat-ATT' and a synthetic passive one *spise-s* 'eat-PASS').

One of the reasons for postulating A-verbs and O-verbs was that there seems to be no fixed way of deriving one from the other, or both from a common root. Another way to solve this problem is to postulate a system of inflectional classes, not dissimilar from the ones commonly found across Indo-European languages. The fact that the same grammatical categories are marked by different affixes (or

allomorphs thereof) for different lexical items is indeed a familiar ones. For example, the infinitive suffix in Latin varied between *-aːre, -eːre, -ere, -iːre* depending on the class of the verb. The different patterns can be thus restated in an inflectional class system, as illustrated in table (3.2).

Table 3.2: Inflectional classes of the Äiwoo voice systems

Class	Actor Voice	Undergoer Voice
1a	-e	-i
1b	-ei/oi	-i
1c	-∅	-i
2a	\<o\> (-u)	\<∅\> (-u)
2b	\<âw\> (-ââ)	\<∅\> (-ââ)
2c	\<ow\> (-e)	\<∅\> (-u)
3	(-ei)	(-(i)li)

The first inflectional class is divided into three subclasses; in all subclasses, UV is marked by a suffix *-i*, whereas AV is marked by either *-e, -ei/-oi* or *-∅*. In the second inflectional class, AV is marked by an infix containing a back vowel, either \<o\>, \<âw\> or \<ow\>, whereas UV has no infix; these verbs end in the vowels indicated in the table. Verbs in class 2c often are not simple stems but bimorphemic; for example, *lâlowe~lâlu* 'cut a string or flexible object.AV/UV' can be segmented into *lâ-* 'chop with an axe or bushknife' and *lowe~lu* 'break, snap, of long flexible objects.AV/UV'. These type of verbs originate from serial verb constructions where the verb determining the voice properties of the whole form is the last one[3], in this case *lowe, lu*; cf. section 3.6.2.2 below. With this taken into consideration, one can see that the infix \<ow\> is in the expected position, i.e. after the first consonant. Class three has only a couple attested members, i.e. *kei, kili* 'dig', *vei, vili* 'weave' and possibly *lei, li* 'grate' (although the latter may also be analyzed as belonging to class 2b); on the basis of this data alone it is difficult to hypothesize anything.

Another class can be posited for verb which are identical in AV and in UV (or, in the other analysis, where the A-form is equal to the O-form), such as *tako* 'sew.AV/UV', or *nu* 'drink.AV/UV'. It is not unusual that certain classes neutralize distinctions made in others. Taking again Norwegian as an example, masculine and feminine nouns mostly distinguish between singular and plural (cf. (60a)), whereas a large number of (monosyllabic) neuter nouns show no distinction (cf. (60b)).

(60)   a. *båt* 'boat.M.SG' – *båt-er* 'boat.M-PL'
        b. *hus* 'house.N.SG' – *hus* 'house.N.PL'; *hus-er

In order to account for the full set of Äiwoo verbs, a class of "irregulars" must be posited as well. This is a relatively restricted set of verb couplets (a couple of dozens) which do not seem to follow any of the patterns presented so far, such as *ebi* 'bake.AV' vs *bi* 'bake.UV', or *veve* 'pay.AV' vs *ve* 'pay.UV'. A sample of these is presented in table 3.3; the reader should be aware that this list is not exhaustive.

Some of these forms could be grouped into small classes. A first one consists of the four verb pairs *iivebi~bi* 'gird', *iivängo~goli* 'snare', *iivemou~mu* 'bury' and *ïivängo~ngo* 'twist'. A second class consists of some verb pairs in which the UV forms seems to be formed through the addition of a suffix *-eâ* (*mibia~mibiââ* 'be shy', *owää~owaaea* 'send for', *pä~pââ* 'steal', *tovaape~tovaapia* 'wipe', *välo~väloeâ* 'wave at someone (to summon them)'); in present-day Äiwoo, this suffix is used to mark UV in causativized verb forms (cf. section 3.3.2), so in these forms it is probably non-segmentable, i.e. "fossilized", in the same manner as the *-i* suffix of class 1 (Næss ms.(b)).

Among the verbs in table 3.3, an interesting form is the pair *vängä* 'eat.AV' vs *ngä* 'eat.UV', where the former comes from Proto Oceanic **paŋan* 'eat', while the latter is possibly derived from Proto Oceanic

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[3] Næss (2012) is a detailed investigation of the interesting combinatorial properties of verbs for cutting and breaking in Äiwoo, which are almost exclusively bimorphemic like the one presented here.

Table 3.3: Äiwoo verbs with irregular voice inflection, i.e. verbs not conforming to classes 1 to 3.

AV	UV	Meaning	AV	UV	Meaning
babu	*babonge*	break soft object	*lää*	*la*	reach, give
bolu	*bâlu*	bend	*mibia*	*mibiââ*	be shy, be ashamed, respect
eâ	*ie*	write	*nugou*	*nuku*	pick
ealâ (*eâlâ*)	*le*	cut, carve	*owää*	*owaaea*	send for, summon
eâpâ	*eopai*	shoot	*pä*	*pââ*	steal
eevili	*eli*	coil	*pou*	*puli*	pick leaves
ekäi	*kali*	sing	*tovaape*	*tovaapia*	wipe
eta	*tai*	tug	*vängä*	*ngä*	eat
iivebi	*bi*	gird, put a belt/rope around	*välo*	*väloeâ*	wave at someone
(*iivädou*	*?*	twist)	*vängo*	*ngo*	spin rope
iivängo	*goli*	snare, catch with rope	*vägi*	*vägei*	spasm, shake
iivemou	*mu*	bury	*veve*	*ve*	pay
iivängo	*ngo*	twist/braid fibre into rope			

*kani 'eat' (Næss 2015b)[4]. The presence of (seemingly) suppletive forms is well attested in languages with inflectional class systems such as many European ones, as illustrated in (61), which shows different tense/aspect forms of one single verb deriving from completely different etymological sources.

(61) a. Latin (de Vaan 2008):
          fer-o: 'bear.PRS-1SG'; root = *fer-* < PIE **bʰer-* 'bear, carry'
          tul-i: 'bear.PST-1SG'; root = *tul-* < PIE **telh₂-* 'bear, undergo, endure'
      b. Ancient Greek (Beekes 2009):
          pʰér-ɔ: 'bear.PRS-1SG'; root = *pʰér-* < PIE **bʰer-* 'bear, carry'
          oís-ɔ: 'bear.FUT-1SG'; root = *oís-* < PIE **h₃eyt-* 'fetch'
          ɛ́:nenk-a 'bear.AOR-1SG'; root = *ɛ:nenk* <PIE **h₂nek̑* 'reach, attain'

Through the rest of the thesis I will adopt the inflectional class-based analysis proposed here, and I will therefore use the terms (and glosses) AV and UV instead of 'A-verbs' and 'O-verbs'. However, not much impinges on this terminological choice, as it is mostly a matter of substituting a more language-specific term with a more cross-linguistically common one, with which it is functionally equivalent. For the sake of simplicity, I will not segment the voice affixes out of the roots, glossing therefore e.g. *eâwââ* 'pull.AV' instead of *e<âw>ââ* '<AV>pull' or *epavi* 'cook.UV' instead of *epav-i* 'cook-UV'.

3.2.3 A THIRD VOICE: *=Cä*

3.2.3.1 DISTRIBUTION AND FORM(S)

A prominent morpheme related to voice and valence is the clitic *=Cä*, found in slot 7 (see chapter 2 for the position of this and other clitics and a description of their initial consonant's allomorphy), i.e. to the right of any overt A argument if present (and to the left of overt O arguments, as will be made clear below). This clitic can attach to all three types of verbs, i.e. intransitives, AV and UV, as illustrated in the following examples. In fact, as will be shown in more depth below, the clitic *=Cä* effectively neutralizes the distinction between AV and UV: intransitive verbs and AV verbs, after the addition of *=Cä*, behave

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[4] These Proto Oceanic forms are not completely etymologically unrelated, as they are traceable back to the same Proto-Malayo-Polynesian root **kaʔən* 'eat' with different morphology, respectively **paN-kaʔən* and **kaʔən-i* (Lynch et al. 2002: 62).

morphosyntactically in the same way as UV verbs, i.e. with the same constituent order and person marking system (suffixes in slot 1 instead of prefixes in slots -3/-1; see e.g. (63b), where *vei* 'weave.AV' takes the 3AUG suffix *-i*).

(62)   Intransitive verbs + =*Cä*: V A=*Cä*
    ki-tokoli-woli   [*lâ*   *sime-enge*]ₛ=***kä***=*nâ*   (Childbirth 181)
    IPFV-sit-down   DEIC.DIST   person-DEM.PROX=**CV**=DEIC.DIST
    '(So) the person can sit on it'

(63)   AV verb + =*Cä*:
    a. V A=*Cä*
        *ku-wâ-nubo*⁵   [*penyibe*]ₐ=***kä*** *deu*   (Fishing cairn 38)
        IPFV-CAUS-die   old.man=**CV**   before
        'The elders used it to fish before'

    b. V=*Cä* O
        nye-ki-vei-lâ-i=***lä***   [*benuwää*]ₒ   (Fishing cairn 275)
        BN:manner-IPFV-weave.AV-go.out-3AUG=**CV** kind.of.basket
        'The way they weave the *benuwää*'

(64)   UV verb + =*Cä*:
    a. V A=*Cä*
        lâto   *luwa-kä*   [*demo*]ₐ=***kä***   (Crab 85)
        then   take.UV-DIR3   hermit.crab=**CV**
        'And the hermit crabs took him'

    b. V=*Cä* O
        luwa-kä=***nä***   [*nupää* *nogo*   *demo*]ₒ   (Crab 11)
        take.UV-DIR3=**CV**   cloth   POSS:UTEN   hermit.crab
        'He took the crab's clothes (i.e. the shell)'

3.2.3.2   FUNCTIONS

The clitic =*Cä* is deployed for a series of functions which are not obviously related at the synchronic level. It is obligatory after certain verbs of saying that take clausal complement, such as *kä* 'want, say' or *ko* 'say'. Moreover, it is used to express ordinal numbers in combination with the generic bound noun *mi-* (cf. chapter 2, section 2.2.1), as illustrated in (65).

(65)   *mi-uvä*=***nä***   (Explanation 13)
    BN:one-four=**CV**
    'The fourth one'

However, the most interesting function of =*Cä* for the present matter is its voice and valence-related one. This clitic is used to introduce a peripheral argument into the clause, thus altering the argument structure of the verb. This argument is often a locative (66) or instrumental (67) one, but also cause arguments (68), temporal arguments, and stimuli are possible as well albeit less frequent.

(66)   CV introducing a locative argument:
    täpilo *ile* *i-ngapou-to-no*=*ngä*   *sopoi*   (Fishing for food 46)
    bowl   this   PFV-pour.UV-go.in-1MIN=CV   salt
    '[I take] a bowl and I pour salt water into it'

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⁵ *Nubo* 'die' is an intransitive verb, but a causative on an intransitive verb derives an AV, cf. section 3.4.1 below. *Wâ-nubo* 'kill.AV' is here used as synonymous with 'fish', i.e. with an O argument which is inferrable from the context.

(67)   CV introducing an instrumental/manner argument:

    ilâ   ku-pu-kä   seleni=kä   ngâgo=nâ   (Settlement 9)

    that   IPFV-go-DIR3   money=CV   to.3MIN=DEIC.DIST

    'That's how he made money' (lit. '(in) that way/through that money went to him')

(68)   CV introducing a causal argument:

    ilâ   dee   ku-nubo-epu-i=lä   (Nyekunubo 27)

    that   this   IPFV-die-also-3AUG=CV

    'They also die of this thing' (original translation: 'this thing causes death too')

In order to understand the peculiarities of *=Cä*, a reminder of the standard properties of the different types of verbs in Äiwoo is in order, with three sentences repeated from (57)-(59) in (69a-c) above. Intransitive and AV verbs have SV/AVO order and take person prefixes (69a); UV verbs have OVA order and take person suffixes (69b); moreover, in UV an overt A argument is to the left of the post-verbal clitics, (69c) (whereas the O of AV verbs is to the right of these clitics, as in (69a)). The peripheral argument introduced by *=Cä* patterns syntactically in a parallel manner to the A of AV and the O of UV: in AV the A is pre-verbal (69a), whereas in UV, the O is pre-verbal (69b). In (66)-(67) above, on the other hand, it is the argument introduced by *=Cä* that is in the preverbal position.

(69)   a.   [*pe-sime-engâ*]ₐ   ***li-epave=to***   [*sii=kâ*]ₒ   (Næss 2015b: 274)

        COLL-person-DEM.DIST   **3AUG**-cook.AV=CS   fish=DEIC.DIST

        'The people cooked fish'

    b.   [*sii*]ₒ   *lâ*   *ki-epavi-**i**=to=wâ*   (Sulu 35)

        fish   DEIC.DIST   IPFV-cook.UV-**3AUG**=CS=DEIC.DIST

        'They cooked the fish'

    c.   [*nupo*]ₒ   *lâ*   *i-pa-kä*   [*gipiä*]ₐ=*jo=wâ*   (Nubulaa 249)

        net   DIST   PFV-fetch.UV-DIR3   brother-in-law.3MIN=PROG=DIST

        'His brother in law took the net'

The addition of *=Cä* changes the constituent order: the peripheral argument occurs in preverbal position (as in (66)-(67)), the A is to the left of the post-verbal clitics and the O is to their right; the complete pattern is thus X V A=CL O, where X is the peripheral argument and =CL stands for the post-verbal clitics (sentences with three overt DPs in these positions are not attested in the corpus, but see (63)-(64) above for sentences showing the consistent distribution of A and O). Moreover, *=Cä* also changes the person marking patterns of intransitive and AV verbs from prefixes (as in (69a)) to suffixes, such as *-no* 1MIN in (67) and *-∅* 3MIN in (66) (the presence of this suffix is demonstrated by the *n*-initial form of the clitic: if there were no suffix there, the clitic would surface as *=kä*; see the discussion of the allomorphy in chapter 2, section 2.3.2, and chapter 6). Essentially, *=Cä* makes all verbs behave as "non-actor voice", carrying therefore person suffixes and showing an overt A argument in slot 2 (i.e. to the left of the post-verbal clitics, as in UV), thereby neutralizing in a sense the distinction between AV and UV. On the basis of the currently available data it is impossible to establish beyond pure speculation what the possible differences might be between attaching *=Cä* to a verb in AV or in UV. Examples (70)-(72) show *=Cä* being attached to AV forms (the (a) sentences) and UV forms (the (b) sentences) of the same verb roots, without any clear difference in the interpretation. More data is needed in order to determine whether there are systematic differences between these constructions.

(70)   a.   *de-**tou**-mä-mu=**wä***   *de-na-nugo=ngâ*   (Marriage 39)

        BN:thing-**bring.AV**-DIR1-2MIN=**CV**   BN:thing-IRR-POSS:FOOD.1MIN=DEIC.DIST

        'The thing that you take/bring the food in'

    b.   *lu-wâsele*   *talâu   nâ-**tu**-mä-i=**lä***   *go   iso-ji*

        3AUG-make.AV   meal   IRR-**bring.UV**-DIR1-3AUG=CV   to   mother-12MIN

        mo   tumo-ji   (Nyilile 9)

        and   father-12MIN

        'They make food [for her] to bring to our mother and father' (in traditional marriage customs,

the bride's family would prepare a meal for the bride to bring to the groom and his family; in this sentence, it is not clear what argument *=Cä* is introducing)

(71)   a. *de-nä-vaavi*   *de-nä-**veve**-de=**ngä***   (Nyiteina nubââ 271)
           BN:thing-IRR-wear   BN:thing-IRR-**pay.AV**-12AUG=**CV**
           '[this is how we find money for] clothes, to pay for them'

       b. *numonu ki-**ve**=**nä***   (Naive 214)
           money   IPFV-**pay.UV**=**CV**
           'The money that is to be paid' (i.e. the money with which one pays)

(72)   a. *nye-ki-**vei**-lâ-i=**lä***   *benuwää*   (Fishing cairn 275)
           BN:manner-IPFV-**weave.AV**-go.out-3AUG=**CV**   kind.of.basket
           'The way they weave the *benuwää*'

       b. *lâto   ile*   *ki-**vili**-wâ-no=**ngä***   (Nyiveina betepu 38)
           then   DEIC.PROX   IPFV-**weave.UV**-DIR2-1MIN=**CV**
           'Now I weave with them'

Due to its syntactic effects, *=Cä* is analyzed in Næss (2015b) as a circumstantial voice marker, as opposed to an applicative. To summarize Næss' discussion about this issue, *=Cä* has "the distributional characteristics of an applicative […] but the morphosyntactic effects of a voice marker" (Næss 2015b: 296). Since it has the same function as actor voice and undergoer voice markers, i.e. marking an argument as the most pragmatically prominent one, *=Cä* is analysed as a voice marker. In chapter 4, section 4.3.2 and chapter 5, section 5.4 I discuss the theoretical problems posed by *=Cä* and its behaviour with respects to the voice system and the person marking system, first in a typological perspective and then in a generative one.

3.3   VOICE-RELATED MORPHEMES

3.3.1   UNDERGOER VOICE AGREEMENT: *-i/nyii*

3.3.1.1   FUNCTION

The suffix *-i/-nyii* makes an intransitive verb root or adverbial root agree in undergoer voice with a preceding UV verb stem within the same verb form; the allomorphy between *-i* and *-nyii* is discussed in the following subsection. In sentence (73), for example, the root *mana* 'very' is serialized to the UV verb *ââ* 'pull', and thus it takes the *-i* suffix. Compare this to sentence (74), where *mana* is serialized to the AV variant of the same verb, and where there is therefore no *-i* suffix.

(73)   -2 ob   ob′ o**c**′ 1a   8   (Fishing for food 234)
       *ki-ââ-mana-**i**-mu=wâ*
       IPFV-pull.UV-very-**UV.AGR**-2MIN=DEIC.DIST
       'You catch a lot (of fish)'

(74)   -2 ob   ob′   8   (Fishing for food 330)
       inâ   lâ   *ki-âwââ-mana=kâ*
       3MIN   DEIC.DIST   IPFV-pull.AV-very=DEIC.DIST
       'He catches a lot (of fish)'

Table 3.4, elaborated from table 2.1 (chapter 2), illustrates the potential internal complexity of the Äiwoo verb stem. In a templatic analysis based on linearly ordered slots, the suffix *-i/-nyii* must have its own slot oc′, to the immediate right of a serialized verb stem (slot ob′).

    However, one has to postulate not one, but several slots dedicated to *-i/-nyii*. In fact, a notable characteristic of this morpheme is its recursive behaviour, i.e. the fact that it can occur several times in the

Table 3.4: Linear map of the Äiwoo verb stem

				Stem: slot o						
[a	a′	b	c]	[b′	c′]	[b″	c″]	[b‴	c‴]	d
(CAUS)	(3AUG.O)	First verb stem	(APPL, UV)	Second verb stem	-i/-nyii	Third verb stem	-i/-nyii		...	DIR1/2/3

same verb complex. Sentence (75) shows the intransitive verb *päko* '(be) good' being marked by *-i* when serialized to an UV verb; the whole form is then inflected as an UV verb, cf. the person suffix. The bracketing highlights the internal structure: the whole complex verb stem is built of two substems, the first consisting of only slot ob, and the second one of slots ob′ and oc′. This is parallel to what shown in (74).

(75) -2 [[ob] [ob′ oc′]] 1a   (Fermenting nabo 1)
       bäli   enge=ke   i-[[kää]-[päko-i]]-no
       side   DEM.PROX=DEIC.PROX   PFV-know.UV-good-UV.AGR-1MIN
       'I know this topic well'

The same procedure can take place again: in (76), *mana* 'very' is serialized to the complex UV verb stem *kääpäkoi* (in slot ob″), itself a product of serialization, and *mana* takes thus another *-i* suffix (slot oc″). Another possible analysis is one with one less level of nesting, i.e. where the three stems are at the same hierarchical level ([[*kää*]-[*päko-i*]-[*mana-i*]]). In this model, *mana* would get its *-i* suffix directly from the first verb stem *kää* (in the same manner as *päko*). However, the analysis notated below, where [*kää-päko-i*] constitutes one substem, fits better the generative model proposed in chapter 5 (as it can easier be modelled through binary branching), and I decide therefore to adopt it. A possible example of triple occurrence of *-i* is shown in (77), repeated from (6); here, however, the last *-i* morpheme might in fact be the homophonous 3AUG person suffix[6] (for the sake of simplicity I only include the bracketing at the gloss level, and not in the first line where the slots are notated).

(76) -2 [[[ob] [ob′ oc′]] [ob″oc″]] 1a   (Nylieteina 395)
       i-[[[kää]-[päko-i]]-[mana-i]]-no
       PFV-know.UV-good-UV.AGR-very-UV.AGR-1MIN
       'I know it very well'

(77) -2   ob   ob′ oc′   ob″ oc″   ob‴ oc‴/1a?   (Education 48)
       ki-[[[[eâmole]-[wâtu-i]]-[päko-i]]-[mana-i]]   *(i)jii=le*
       IPFV-look.AV-COMP-UV.AGR-good-UV.AGR-very-UV.AGR/3AUG?   3AUG=DEIC.PROX
       'They have to look after them properly'

The behaviour of *-i/-nyii* as a marker of UV agreement matches quite closely what has been described for an *-i* suffix (plausibly cognate to the Äiwoo one) in the Oceanic language Saliba: "the stems which appear

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[6] If the analysis presented here is correct, however, a third *-i* UV.AGR should indeed be present, since an adverb is being serialized to (something which behaves as) an UV verb. Another analytical possibility comes from the fact that the 3AUG pronoun can be pronounced both *ijii* or *jii*. In this case, in the recording there is no audible pause between the two words, so that it might be transcribed and analyzed either as ...*mana-i ijii=le* (as notated above) or as ...*mana-i-i jii=le*, with both an UV.AGR *-i* and a 3AUG *-i*; I thank Åshild Næss for this clarification. Another issue with the verb form in (77) is that the first verb root is *eâmole* 'look (at)', which in theory is an AV form (the corresponding UV form is *eâmoli*). However, the form *eâmole* is attested several times behaving as an UV verb, as illustrated in (i), where it carries a person suffix (*amole* is a phonological variant).

(i) *lamaa   lâ   ki-amole-kä-de=ngâ*   (Marriage 382)
      if   DEIC.DIST   IPFV-look.AV(?)-DIR3-12AUG=DEIC.DIST
      'If we can see (it)'

in the final slot of a complex verb [...] never determine the transitivity status of the construction but *agree in transitivity status with the preceding stem(s)*" (Margetts 1999: 106; emphasis mine). This analysis does fit the Äiwoo data presented here (an intransitive verb or adverb needs to agree in transitivity with an UV verb in order to be serialized to it), but it is at the same time not precise enough. Äiwoo transitive verbs have two forms (AV and UV), and *-i/nyii* is never found when an intransitive verb is serialized to an AV verb (cf. (74) above). Thus, a better characterization is that *-i/-nyii* does not mark agreement for transitivity status but for undergoer voice, or "O-verbhood".

Another difference between Äiwoo *-i/-nyii* and Saliba *-i* is that the latter only appears on the absolutely rightmost stem, whereas the former shows recursive behaviour, appearing subsequently on every root added to the sequence. This difference speaks in favour of an analysis of the stem area of the Äiwoo verb as being built of hierarchical structures where stems are derived and combined in a layered fashion, as opposed to an analysis based on a template consisting of linearly ordered and specialized slots – as in table 3.4 – where several slots would have to posited for the same morpheme; however, throughout the thesis I will resort to the slot system described in chapter 2 as a descriptive tool (when relevant), to present with more clarity the position of the different morphemes. An informal illustration of the hierarchical structure underlying the verb form in (76) above is given in (78) (note that the lowest UV node, adjoined to the verb root *kää* 'know', does not have any explicit morphological expression, but only represents the fact the voice information present in the root itself; coincidentally, no AV form of this root is attested). In chapter 5 I propose a concrete model of the hierarchical structures in the Äiwoo stem (and more) within a Minimalist framework.

(78)

3.3.1.2 DISTRIBUTION

As exposed above, *-i/-nyii* is suffixed to intransitive verb roots and adverbial roots when these are serialized to an UV verb stem. However, not all roots take this suffix. A first class of roots consistently not taking *-i/-nyii* are the four directional verbs *to, lâ, ee, woli* 'go in, out, up, down'. In (79), for example, *ee* 'go up' is not suffixed with *-i/-nyii* when serialized to the UV verb *siwo* 'hold'. However, these directional verbs do not "block" *-i/-nyii* from appearing: if another root is serialized after a directional verb, this may take *-i/-nyii* if it follows a UV stem, as shown in (80), where *doo* 'like that' is added to the structure, and it is suffixed by *-i/-nyii* since it follows the UV verb *siwo* (see below for a discussion of the allomorphy). The directional suffix *-kä* is here included within the outermost bracket delimiting the whole stem, consistently with its analysis as belonging to slot od.

(79)   *le*   *ki-[[siwo]-[ee]-kä]-i-le*   (Childbirth 208)
       DEIC.PROX   IPFV-hold.UV-**go.up**-DIR3-3AUG-UA
       'They (two) lift her up'

(80)   *i-[[[siwo]-[ee]]-[doo-**nyi**]-kä]-i-le*   (Childbirth 201)
       PFV-hold.UV-**go.up**-like.that-**UV.AGR**-DIR3-3AUG-UA
       'They (two) lift her up like this'

Apart from these four directional verbs, other roots that do not take the *-i/-nyii* suffix are among those categorized in the available literature as "adverbs", i.e. roots that can only occur as modifiers within a complex verb form, but not function as a predicate on their own. An example of adverb (in this language-specific sense) taking *-i/-nyii* is *mana* 'very', as shown in several examples above. On the other hand, the adverbs *ngä* 'yet' and *ute/usi* 'back, again' are never followed by *-i/nyii*[7]; *eopu* 'also' is attested both suffixed by *-i* and without (in the relevant contexts).

The two allomorphs of this morpheme are, as shown in the examples above, *-nyi(i)* and *-i* (it is not entirely clear why the vowel in *-nyi* varies in length; *-nyi* and *-nyii* are treated as being the same allomorph in lack of evidence for the contrary). The form *-nyi(i)* occurs consistently after *doo* 'like that', *eke* 'fast', *(lâ)oo* 'always', *mole* 'exactly', *ngengäle* 'back and forth', *ngege* 'straight, immediately' and *waabo* 'idle'[8]; after all other roots, *-i* is found. It seems implausible that there might be a phonological explanation, given that forms ending in the same phonemes – the vowels /e, o/ – are attested with both *-i* and *-nyi(i)*, cf. *doo-nyi* vs *päko-i* and *ngege-nyi* vs *une-i* (*une* 'true'). In the same manner there is no coherent morphosyntactic criterion that selects all and only the forms attested with *-nyi*: some of them behave more as intransitive verbs, as they can function as a predicate on their own (e.g. *doo* '(be) like that', *eke* '(be) fast', *waabo* '(be) idle') and some other are only attested as modifying adverbs, i.e. they can only occur as modifiers in a complex verb form (e.g. *ngengäle* 'back and forth', *mole* 'exactly'). The allomorphic variation seems therefore to be only lexically conditioned (i.e. by the stem to which *-i/-nyii* is attached), at least to the present state of knowledge.

Note that in a verb complex containing multiple instances of *-i/-nyii*, they do not need to be all of the same form; *-i* and *-nyii* can in fact co-occur within the same verb complex depending on the stems which are being serialized, as illustrated in (81), repeated from (10).

(81)   [[[[*siwo*]-[*lâ*]]-[*doo-**nyii***]]-[*päko-**i***]]=*ja*=*pwâ*   (Nyiveina benuwää 112)
       hold.UV-go.out-like.that-**UV.AGR**-good-**UV.AGR**=HORT=?
       'Can you hold it out properly like that?'

3.3.2   UNDERGOER VOICE MARKING: *-eâ*

A second morpheme related to undergoer voice is *-eâ*, which in the descriptive template analysis occurs in slot OC (see table 3.4 above). The attested allomorphs are *-eâ, -wâ, -â* and *-nâ*; the first three are phonological variants of each other (Åshild Næss, p.c.), while the last one seems to be lexically triggered by certain stems. This suffix is mostly found after causativized intransitive verbs (although in a few sparse cases it occurs without the causative prefix *wâ-* being present). When an intransitive is causativized, the whole form behaves as an AV verb (i.e. it still takes A prefixes, like an intransitive, but it has an O argument); when this AV verb is then followed by *-eâ*, the whole form behaves as an UV verb. In sentence (82a), the intransitive verb *nubo* 'die' is causativized, and the compound form *pwâ-nubo*[9] 'kill.AV' behaves as an AV verb, cf. the A prefix *lu-* 3AUG and the postverbal patient. In (82b), *wâ-nubo* is followed by *-wâ* UV, and the whole stem now is an UV verb, which is shown by the person suffixes *-gu-i* 3MIN-3AUG.

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[7] This adverb has two variants: *ute* after intransitives and AV verbs and *usi* after UV verbs. An argument could be made that *usi* can be decomposed into *ute-i*, as /t/ is regularly neutralized to /s/ before /i/. It seems plausible that this is the diachronic origin of *usi*. Synchronically, however, the /i/ in *usi* behaves phonological more as an unstressed root-final vowel, undergoing devoicing and dropping, therefore resulting in [usi̥~us]. Contrarily to this, the UV agreement suffix *-i* is always pronounced as a full vowel. Summarizing, *ute-i* 'back-UV.AGR' is a plausible diachronic origin for *usi*, although synchronically it cannot be analyzed in the same way as e.g. *päko-i* 'good-UV.AGR'.

[8] A few spare cases (only one example per form) are attested of *-nyi* following *du* 'finish, all', *wâpa* 'pass' and *te* 'groundlessly'.

[9] Recall from chapter 1, section 1.5.3 that all v- and w-initial forms consistently occur as p-initial after the 3AUG prefix *li-/lu-*.

(82) a. -2 -1 0a 0b   4   (Fishing cairn 56)
          *ku-lu-[pwâ-[nubo]*_{INTR}]_{AV}=to *sii* *ngämi=nâ*
          IPFV-3AUG-CAUS-die=CS   fish   there=DEIC.DIST
          'they kill fish in there'

      b.   0a   0b   0c   1a 1b 6   (Moliki 130)
          eä   [[*wâ-[nubo]*_{INTR}]_{AV}-*wâ*]_{UV}-*gu-i=laa*
          and   CAUS-die-UV-3MIN-3AUG=FUT
          'And she killed them'

There are sparse examples of *-eâ* occurring on non-causativized forms, i.e. intransitive verbs without *wâ-*, as shown in (83). In addition to forms such as this, a handful of AV-UV verb pairs show what could seem to be a "fossilized" *-(e)â* suffix on the UV variant, such as *mibia* (AV) vs *mibiââ* (UV) 'be shy, be ashamed, respect, adhere to law', *välo* (AV) vs *väloeâ* (UV) 'wave one's hand', or *pä* (AV) vs *pââ* (UV) 'steal'. Given the scarcity of attestations it is difficult to account for these; it might also be that *-eâ* here is in fact a different morpheme. More and better data is needed in order to shed light constructions like this.

(83) *mo* *ku-basiki-eâ-kä=naa=kâ*   *ilâ*   (Nyeliwânubona toponu 55)
      and   IPFV-run-UV/?-DIR3=FUT=DEIC.DIST   that
      'It will run towards (where the sun is shining)'

The suffix *-eâ* is different from *-i/-nyii* (examined in the previous section) in the fact that *-i/-nyii* makes an intransitive verb or adverb agree in undergoer voice with a preceding UV verb, whereas *-eâ* marks undergoer voice in and on itself: in a form like *wâ-nubo-wâ* 'CAUS-die-UV', there is no other verbal root to agree with. Not surprisingly, *-eâ* and *-i/-nyii* can co-occur within the same verb form. In (84), first the UV verb stem *wâ-nubo-wâ* is derived through the causative (slot 0a) and the UV marking suffix *-eâ* (slot 0c); then, *ngege* 'straight, immediately' is serialized to this stem (slot 0b′), and it takes therefore the UV agreement suffix *-i/-nyii* (slot 0c′). The bracketing is meant to highlight the two serialized stems, both with internal morphosyntactic complexity.

(84) -2 [0a 0b 0c] [0b′ 0c′] 1a   (Nyilieteina 415)
      ku-wâ-nubo-wâ-ngege-nyii-no
      IPFV-CAUS-die-UV-straight-UV.AGR-1MIN
      'I kill it straight away'

The fact that *-eâ* is a marker of undergoer voice rather than an (voice) agreement marker also predicts correctly an aspect of its distribution. As opposed to *-i/-nyii*, *-eâ* is not recursive, i.e. it is not attested to occur several times within the same verb complex. For this to occur, the following would have to happen: first, an UV verb would have to be derived through *-eâ* from a causativized intransitive; then, this would have to be turned again into an AV verb or an intransitive; then, this intransitive or AV verb would have to be derived once again into an UV verb through *-eâ*. Äiwoo does not have any morphosyntactic device to detransitivize a transitive verb, or to turn an UV verb into an AV verb. Therefore, this scenario is impossible, and therefore *-eâ* is predicted never to occur more than one time per verb, which is exactly what is found in the corpus.

3.4 VALENCE-INCREASING MORPHEMES

3.4.1 CAUSATIVE PREFIX *wâ-*

3.4.1.1 ALLOMORPHY AND POSITION

The causative prefix *wâ* has a series of allomorphs, both morphogically conditioned (*pâ-~pwâ-* after *li-* 3AUG) and phonologically conditioned (*vä-, wä-, ve-*). Examples of the *wâ-* and the *pwâ-* forms are shown

in (85). As is visible from these sentences, the causative morpheme is prefixed to the (first) verb root, i.e. in slot 0a, thereby following aspect marking and, if present, the 3AUG prefix.

(85)   a.   -3 -2   0a   0b   0b′   0d   (Gardening 410)
             *mi-ku-**wâ**-eali-vesi-kä*
             2MIN-IPFV-**CAUS**-clear-still-DIR3
             'You're still clearing (the garden)'

       b.   -2 -1   0a   0b   4   (Growing pana 180)
             *ku-lu-**pwâ**-eali=to*
             IPFV-3AUG-**CAUS**-clear=CS
             'They clear (the place)'

There are some apparent counter-examples to this, all of which involve the directional verbs *to* 'go in', *lâ* 'go out', *woli* 'go down' and *ee* 'go up'. In (86), for example, the causative prefix seems to appear *before* the aspect marker *ku-* IPFV, instead of after it as in (85). In the following two examples there seems to be two aspect markers, with both agreeing values (87a) and contrasting ones (87b). This is the analysis proposed in Frostad (2006: chapter 5).

(86)   *wâ-**ku**-woli-i*   (Childbirth 230)
        CAUS-**IPFV?**-go.down-3AUG
        'They put (it) down'

(87)   a.   *i-wâ-**i**-ee-gu-∅=to*   (Thelma Sada iwä itei 67)
             PFV-CAUS-**PFV?**-go.up-3MIN-1MIN=CS
             'She put me on board' (lit. she put me up)

       b.   *ku-wâ-**i**-woli=nâ*   (Nupo eä nubââ 55)
             IPFV-CAUS-**PFV?**-go.down=DEIC.DIST
             'He puts (it) down'

All four directional verbs seem to combine with both *i-* and *ki-/ku-* after the causative. A possible alternative analysis that is compatible with the aspect-causative-root order presented above is one in which the morphemes after the causatives are not aspect markers after all. As for *ki-/ku-*, a plausible analysis is that this is in fact the intransitive verb *ko* 'lie' (which then undergoes some phonological mutations[10]), so that the verb form in (86) would actually be glossed as CAUS-lie-go.down-3AUG, i.e. 'they make (it) lie down'. As for *i-*, on the other hand, an alternative analysis is that this *i-* is in fact not a segmentable morpheme, but is the initial vowel of the stems *iito*, *iilâ*, *iiwoli* and *iie*, which clearly correspond to the directional verbs listed above and have a more concrete meaning, i.e. 'step/walk in/out/up/down'. In this way, one avoids stipulating the possibility that the aspect marker and the causative marker can occur in an exceptional order only with these four verbs, and that exactly these also can take double aspect marking, even two contrasting ones (i.e. both perfective and imperfective at the same time).

Another series of apparent counter-examples to the order proposed above (ASP-3AUG-CAUS-root) involves again the four directional verbs and the 3AUG prefix *li-/lu-*, placed in what I called slot 0a′ in chapter 2. In these cases, the causative prefix precedes the person marker instead of following it (88)-(89); as in the previous case, the 3AUG marker can occur both before and after the causative prefix at the same time (90).

(88)   ***wâ-li**-to-no*   *ngä*   *täpilo*   (Fishing 114)
        CAUS-3AUG-go.in-1MIN   LOC.PREP   bowl
        'I put them in a bowl'

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[10] Admittedly, this explanation is more plausible for surface forms such as *wâkuwoli*, with *ko* becoming *ku* before a /w/, than e.g. *wâkilâ* 'put out'. However, the vowels /i/ and /u/ are often devoiced or dropped altogether when unstressed, so that sometimes it is hard to determine what the underlying vowel is when the surface form is [wɒkʰlɒ].

(89) *i-**wâ-li**-lâ-kä-i*   *ngä*   *näle*   (Nupo eä nubââ 43)
      PFV-**CAUS**-3AUG-go.out-DIR3-3AUG LOC.PREP sun
      (Then they cut a *nyânumowä* tree and) 'They put it out in the sun'.

(90) *nâbo*   *lâ*   ***lu-pwâ-li-to***   *ngämi=nâ*   (Nyiveina benuwää 150)
      dried.breadfruit DEIC.DIST **3AUG-CAUS-3AUG**-go.in there=DEIC.DIST
      'They put the *nâbo* into it'

In these sentences, the causative prefix seems to attach to an inflected root, in a stepwise fashion that can be informally illustrated thus: *to* 'go in' > *li-to* 'they go in' > *wâ-li-to* 'make them go in'. An analysis of this type would predict that the complex forms *wâ-li-to, wâ-li-lâ* etc. would always have a reading with a plural O argument. This is indeed true for the majority of the attestations of forms of this type, e.g. (88) and (90) (*nâbo* is a preparation of dried breadfruit, and here the context is talking about *pieces of nâbo*); cf. also the dictionary translations 'put many things up/down/into/outside' (Næss 2017a: 154–155). A reading involving multiple pieces seems to be plausible also in (89), also considering that in the sentence prior to this in the text, the speaker uses the verb *läke* 'cut, chop'.

The fact that a causative morpheme attaches to a partially inflected stem is rather unusual; from another point of view, in these Äiwoo constructions the A is coded as usual (i.e. a prefix), while the O is indexed in a manner unique to this construction (i.e. a prefix, as opposed to a suffix). In Dixon's (2000) descriptive classification of causative constructions, this scenario is not attested. Although one might want to analyze these complex forms as lexicalized – as the dictionary (Næss 2017a) does, cf. above – this would only push the problem one step away: if they are lexicalized now, they must have been grammatical at an earlier stage of the language, and that would still need a form of analysis or explanation.

3.4.1.2 DISTRIBUTION

The causative morpheme *wâ-* attaches in the vast majority of cases to intransitive verbs and adds an argument, thereby deriving a transitive one (in the pre-theoretical sense of 'two-place predicate'). This can be considered rather standard behaviour for causatives (see Dixon 2000: 43–45, where it is claimed that the possibility of causativizing transitive verbs is typologically rarer, or more marked). The two sentences in (91) are an illustration of this. The verb in (91a) is intransitive, taking only an S argument; in (91b), on the contrary, an A argument – the causer – is added (here *me-* 1AUG), whereas the old S argument corresponds to the O argument of the transitive clause.

(91) a. *i-li-**ngâbo**-oli-maa*   (Basket weaving 15)
         PFV-3AUG-**climb**-go.down-LOC.DIST
         'They come down'

      b. *me-**wâ-ngâbo**-ee*   *pe-dowâlili*   (Basket weaving 11)
         1AUG-**CAUS-climb**-go.up COLL-child
         'We get some kids to climb up (on a tree)'

Attestations of the causative attaching to transitive verbs are very sparse and of dubious status. The two following sentences might be examples of the causative attaching to AV verbs. However, the argument is not quite solid: although both verbs are glossed (in the corpus) as actor voice, it is not entirely clear whether they should be considered transitive AV verbs or intransitive ones. As for (92), it is not implausible to assume that the verb *päkatou* 'decide' is ambitransitive, with the same form functioning both as an intransitive and as actor voice (the undergoer voice form is *päkatuwo*). The form in (93), is another dubious case, where it is not entirely clear whether *wâ-* introduces the actor of the birthgiving (i.e. the mother) or to who causes/helps the childbirth to take place (i.e. the midwife). The only occurrence in

the corpus of a causative attached to a UV verb is (94), where the translation[11] is rather obscure, making it impossible to draw any generalization.

(92) *penyibe   lângaa   ki-li-vä-päkatou-eopu*   (Fishing cairn 172)
       old.man   PARTCL   IPFV-3AUG-CAUS-decide.AV-also
       'The elders would decide'

(93) *nyi-wâ-tou-na*   (Childbirth 5)
       NMLZ-CAUS-bring.AV-NMLZ
       'Childbirth' (lit. 'bringing/giving birth')

(94) *luwa-kä=nä   nyina   i-wa-i-uusi*   (Nubulaa 231)
       take-DIR3=CV   sail   PFV-CAUS-?PFV?-turn.O
       'Then sail made stood other way'

Given that the causative only (or mostly) seems to attach to intransitives, it follows that this element is not recursive. A causative renders an intransitive verb transitive, and at this point, it is not possible to attach a second one. Note that the possibility of a double morphological causative is cross-linguistically not unattested. In Gujarati, for example, a transitive verb can be derived into both a "direct causative" (95b) and a "indirect causative" (95c).

(95) Gujarati (Indo-Aryan, India; Kinjal Joshi, p.c.)
       a. *kha*   b. *khawdaav*   c. *khawdaavdaav*
          'Eat'   'Feed'   'Make feed'

There are a number of attestations of verb forms with both the causative and circumstantial voice marking. These seem to be ditransitive (i.e. having 3 core arguments). The causative introduces an A argument and turns the original S argument of the base intransitive verb to the O argument; the circumstantial voice marker *=Cä* then introduces a peripheral argument (e.g. an instrumental in (96)-(97), or a locative in (98)), and marks it as the most prominent argument of the clause (this process needs not be considered different from the addition of *=Cä* to an underived AV verb – or UV, for that matter; simply, it has one more derivational step). In (96), *temâânu* 'bait' is a relativized argument, leaving a gap in the relative clause (represented pre-theoretically with an underscore), where one can see three arguments: the gap itself, introduced by *=Cä*, the A (*-i* 3AUG) and the O (*nubââ* 'shark').

(96) *temâânu   ngaa   [__   nâ-**wâ**-nubo-eâ-i=**lä**   nubââ]*   (Nyiteina nubââ 8)
       bait   so   IRR-**CAUS**-die-UV-3AUG=**CV**   shark
       'Bait to catch the shark with' (lit. 'bait such that they would catch the shark with it')

(97) *dee   de-ku-**wâ**-nubo-i=**lä**   sime=ke*   (Houses 133)
       this BN:thing-IPFV-**CAUS**-die-3AUG=**CV**   person=DEIC.PROX
       'This is what (lit. the thing) they killed people with'

(98) *sapulâu   ku-**wâ**-meloo-i=**lä***   (Explanation 126)
       men's.house IPFV-**CAUS**-peaceful-3AUG=**CV**
       'The men's house is where disputes are settled' (lit. '(in) the men's house they make (it) peaceful')

Although the transitivity of causativized forms is out of doubt (adding an argument to a one-place predicate results necessarily in a transitive predicate), their voice properties are not as clear. In most cases, the complex verb form shows the behaviour and morphosyntactic properties of AV, that is, prefixed person marking and AVO order; compare the causativized (99), repeated from (85b) above, and the underived AV form in (100). As presented above, UV forms can be derived from causativized forms through the addition of the suffix *-eâ*.

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[11] This translation was made by the native speaker Martin Moiâ on his own – i.e. without any participation of a trained linguist – and it is an attempt to word-by-word translation.

(99) *ku-lu-**pwâ**-eali=to*   (Growing pana 180)
      IPFV-3AUG-**CAUS**-clear=CS
      'They clear (the place)'

(100) *pe-sime-engâ*   *li-epave=to*   *sii=kâ*   (Næss 2015b: 274)
      COLL-person-DEM:DIST 3AUG-cook.A=CS fish=DEIC:DIST
      'The people cooked fish'

This follows relatively clearly from the nature of the symmetric voice system in Äiwoo, which is based on pragmatic prominence (Næss 2015b): if an A argument is added, then that argument must also be the most prominent one in the clause (otherwise it would not have been added), and therefore the causativized verb appears in actor voice. However, in some cases such as (88)-(90) above, the verb must be considered to be in undergoer voice. As another example, in (101), the verb takes two person suffixes, referring to both the A and the O argument, something that is strictly exclusive of verbs in undergoer voice (cf. section 3.2.2.1 above, and chapter 6).

(101) *i-wâ-lu-eopu-gu-i=lâ*   (Nyiwaluna 170)
      PFV-CAUS-live-together-3MIN-3AUG=DEIC.DIST
      'He puts them together'

Another possible analysis of this form is one where *lu-* is actually a 3AUG prefix in slot OA′, and *eopu* is a verb meaning 'be together'. If this is the case, then the class of verbs which can be used in this construction (with slot OA′) must be larger than just the four directionals *to, lâ, ee, woli* 'go in, out, up, down', and also comprise *eopu* when meaning 'live together'. However, despite the alternative analysis the problem persists, as *wâ* is still deriving an UV verb without the addition of *-eâ*.[12]

3.4.2 APPLICATIVE SUFFIX *-ive*

As opposed to the causative prefix *wâ-* which adds an A argument to an intransitive predicate (cf. section 3.4.1 above), the suffix *-ive* adds an O argument to the same; the semantic role of this added argument is mostly patient or stimulus (Næss 2015b: 297), although exceptions are attested (cf. below). In sentence (102a), the verb *lopâ* 'talk' is transitive, and therefore it takes the person prefix *mi* -2MIN. In (102b), on the contrary, the suffix *-ive* has been added, and the verb now takes the person suffix *-mu* (cf. section 3.2.2.1 for details about the prefixes vs suffixes). The meaning of the verb changes accordingly, from 'talk' (intransitive) to 'tell' (transitive). The suffix *-ive* does not co-occur with the UV marker *-eâ* nor with the comitative suffix *-i* (see next section); thus, in the linear map it belongs in slot OC.

(102) a. ***mi**-ki-lopâ-kä=naa*   *ngä*   *bäli* *ngä*   *nenelu*   (Dancing leluwo 3)
         2MIN-IPFV-talk-DIR3=FUT LOC.PREP side LOC.PREP dance
         'You are going to talk on the topic of dance'

      b.   -2 OB OC OD **1a** 8   (Fishing cairn 8)
         kâ-mu=wä   *nâ-lopâ-**ive**-kâ-**mu**=we*
         want-2MIN=CV IRR-talk-**APPL**-DIR3-**2MIN**=DEIC.PROX
         'What would you like to tell us?'

Since the complex verb form containing *-ive* takes person suffixes, it behaves morphopsyntactically as being in undergoer voice. This is confirmed by the OVA order when overt arguments are present, as shown in sentence (103) – note that the passive translation is likely to be an artefact of trying to render in English the original constituent order; a more literal translation that does not preserve the linear order, such as 'the wind destroyed our houses completely', would plausibly be as fitting.

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[12] I thank Åshild Næss for suggesting this analysis.

(103) [*nuwopa to-ngopu=wâ*]₀   *i-vetängä-**ive**-wâgulâ-i*
      house   POSS:LOC-1AUG=DEIC.DIST   PFV-cause.damage-**APPL**-completely-UV.AGR

      [*nyengi*]ₐ*=to*   (Däive 33/34)
      wind=CS
      'Our houses were completely destroyed by the wind'

In the available literature (e.g. Næss & Boerger 2008, Næss 2015b) this suffix is analyzed as an applicative. This label is due to its function of adding an O argument to an intransitive predicate, which is the typical behaviour of applicatives (Peterson 2006). Due to the nature of the Äiwoo voice system, however, this O argument does not surface as the "object" of the clause, but as the "subject" (modulo the dubious status of grammatical relations in this language), i.e. the argument selected by the voice morphology. As was presented above, the causative introduces an A argument and turns an intransitive verb into a transitive verb in AV; the applicative *-ive* is in a sense the mirror image of this, introducing an O argument and turning an intransitive verb into a transitive verb in UV. The same reasoning can be used: if an O argument is to be introduced, then this argument should be prominent enough to be the voice-selected argument.

The applicative is not the only morpheme adding one non-agentive argument to the clause and making it the voice-selected argument. As presented earlier (cf. section 3.2.3), the circumstantial voice marker *=Cä* has a similar function, introducing a peripheral argument (such as a locative, instrumental, cause, etc.). The clearest difference between the two lies in the semantics of the added argument: the argument introduced by *-ive* is often more clearly patientive or stimulus-like (see below for a comparison of the semantics of the argument introduced by *-ive*, *=Cä* and *-i* 'comitative'; cf. the next section). Note that the morphosyntactic effect of *-ive* and *=Cä* is indeed similar, as they both introduce a new non-agentive argument and make it the voice-selected one; however, one of the main differences between these two morphemes is that *=Cä* has a much wider distribution, being able to attach to all types of verbs, whereas *-ive* is only attested with intransitives.

Finally, the interplay between the applicative *-ive* and the causative *wâ-* is not entirely clear. In some cases, the applicative suffix seems to be adding an A argument instead of an O, thereby functioning as a causative. In sentence (104), for example, the intransitive predicate *olo* 'big' would have *nââ* 'voice' as its S argument ('their voices are big'); the addition of the applicative turns this into the O argument, adding a causer (which is not overt here due to being inferrable from the discourse context, i.e. the previous sentence). The same applies to sentence (105). The attestations of this pattern are sparse, and it is difficult to conclude anything on the basis of this data alone[13].

(104) *lâ*   *ki-olo-**ive***   *nââ-i=lâ*   (Næss ms.(b))
      DEIC.DIST   IPFV-big-**APPL**   voice-3AUG=DEIC.DIST
      '(They went and) spread the word' (lit. 'they made their voices big')

(105) *Ilâ*   *ki-dali-**ive**=jo=wâ*   (Næss ms.(b))
      DEIC.DIST   IPFV-be.in.pain-**APPL**=PROG=DEIC.DIST
      'It would make (the victim) feel a lot of pain'

Moreover, in other cases the causative prefix and the applicative suffix co-occur on the same verb, but the resulting form does not seem to be ditransitive, i.e. they do not add one argument each (respectively an A and an O) as one might expect. In sentence (106) the verb takes a person suffix, so it must be

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[13] The fact that a single suffix may have both causative and applicative uses is not unattested; in fact, the Proto Oceanic transitive suffix **-i* had both, depending on the "missing" semantic role of a one-place predicate: unergative verbs ("Actor subject verbs" in Oceanist terminology) received an O argument, i.e. **-i* had an applicative function, whereas unaccusatives ("Undergoer subject verbs") received an A argument, i.e. **-i* had a causative function (Evans 2003: 117–118). This is preserved to a certain extent in modern Oceanic languages, although it does not appear to be the case in Äiwoo, where the two functions are (almost) neatly distributed between *wâ-* CAUS and *-ive* APPL (for the comitative suffix *-i*, see below). The few cases where *-ive* APPL has a causative function, however, do indeed involve unaccusative verbs, cf. (104)-(105).

considered to be a transitive verb in UV; however, it is not quite clear what the O argument is, since *nye-enge* 'this place' is introduced by a preposition, and cannot therefore be considered a core argument of the clause. In a sense, *-ive* here is taking over the function of the undergoer voice marker *-eâ*.

(106)   *ku-**wâ**-bilängä-**ive**-mä-i-le*   *ngä*   *nye-enge*   (Moliki 437)
        IPFV-**CAUS**-dirty-**APPL**-DIR1-3AUG-UA   LOC.PREP   BN:place-DEM.PROX
        'They two (came and) made this place dirty'

The co-occurrence of causative and applicative suffix on a transitive verb is attested in other Oceanic languages. In North-East Ambae, the intransitive verb *sala* 'be/become lost' is transitivized as *vaga-sala-gi(ni)* CAUS-become.lost-APPL 'lose something' (Evans 2003: 22); the possibility of the presence of both affixes on a single stem is reconstructed as part of the POc verb system for a certain class of stative verbs (Evans 2003: 34). This construction in Äiwoo (solely attested with the stative predicate *bilängä* '(be) dirty') might presumably be a remnant of the POc one.

3.4.3   COMITATIVE SUFFIX *-i*

The last morpheme with a valence-changing (increasing) function is the comitative suffix *-i*. Morphosyntactically, this element is similar to *-ive*: it attaches to intransitive verbs (seemingly, always to the first stem) and derives transitive verbs which behave for all morphosyntactic purposes as UV verbs; due to its distribution, I model this suffix as belonging to slot OC as well. The main difference between *-i* and *-ive* (and *=Cä*, for that matter) lies once again in the semantics of the added argument, which for *-i* is a comitative one, i.e. an argument with which, or in the company of which, the action is carried through. The fact that the derived verb is a transitive one in undergoer voice can be seen in the following sentences. In (107) the A argument is marked by the person suffix *-i* 3AUG, whereas in (108), both arguments are marked by suffixes. Person suffixes and double argument marking only occur on UV verbs (and circumstantial voice), cf. section 3.2.2.1 above. Moreover, in (109) the overt O argument (introduced by *-i*) is preverbal, as usual for UV verbs.

(107)   -2 OB OC OB′1A   (Explanation of ceremony 210)
        *ki-tâpo-**i**-to-i*   *ile*   *ngä*   *nye-enge*
        IPFV-go-**COM**-go.in-3AUG   this   LOC.PREP   BN:place-DEM.PROX
        'They take him into this place' (lit. 'They go with (him)')

(108)   -2 OB OC OB′1A 1B 1C   (Moliki 500)
        *i-luwo-**i**-lâ-gu-i-le*
        PFV-rush-**COM**-go.out-3MIN-3AUG-UA
        'She rushed out with (=carrying) them (two)'

(109)   -2 OB OC OB′OD 4 8   (Nyiteina nubââ 216)
        nubââ   *lâ*   *i-eâ-**i**-to-mä=jo=wâ*
        shark   DEIC.DIST   PFV-paddle-**COM**-go.in-DIR1=PROG=DEIC.DIST
        'He paddles back with the shark'

Table 3.5 is a summary of the different semantics of the argument introduced by two Proto Oceanic morphemes, the suffixes **-i* and **-akin[i]*, when attached to different types of verbs. Neither of these maps entirely on any of Äiwoo's *-i*, *-ive* and *=Cä*; however, diachronic correspondences might be hypothesized on the basis of phonological closeness of Äiwoo *-i*, *-ive* to Proto Oceanic **-i* and *=Cä* to **-akin[i]* (Næss 2015b presents several arguments for the latter diachronic correspondence). The circumstantial voice marker *=Cä* covers causes (and stimuli), instrumentals, benefactives, locatives and content of speech verbs (cf. *=Cä* being obligatory after verbs that take a clausal complement such as *kä* 'say'; these are the light-gray cells). The "concomitant" (i.e. comitative) function in Äiwoo is taken over by *-i* COM (dark-gray cell). Finally, the applicative *-ive* introduces stimuli and patient/theme-like arguments, in

addition to content of speech verbs – at least for the verb *lopâ* 'talk', cf. sentence (102b) above (hatched cells); note that the cell containing "content" is both light-gray and hatched. There is no morpheme in Äiwoo whose role is to introduce the addressee of a speech/cognition verb, so this function seems to have been lost altogether. However, the directional suffix *-wâ* DIR2 seems to be possibly used to the same effect (see section 3.5 below).

Table 3.5: Semantics of the argument introduced by two Proto Oceanic valency-increasing morphemes with different types of verbs (elaborated from Evans 2003: 235)

Verb type	Argument introduced by *-i*	Argument introduced by *-akin*[*i*]
motion verbs	location, goal	concomitant
psychologic/emotion verbs	stimulus	cause, stimulus
process/action verbs	patient	instrument, benefactive
speech/cognition verbs	addressee	content

3.5   DIRECTIONAL SUFFIXES

3.5.1   FORMS AND FUNCTION

The last (rightmost) morpheme within the stem area of the Äiwoo verb, i.e. in slot od, is the (non-obligatory[14]) directional suffix. This comes in a small paradigm, with three forms distinguished with respect to person: *-mä* for 1st person, *-wâ* for 2nd person and *-kä*/ for 3rd person (*-kâ* is a phonological variant; cf. chapter 1, section 1.5.3). These suffixes are all extremely common, ranging into the thousands of attestations each (in a corpus of 75 texts). All three forms are presented in (110a-c).

(110)   a. -2 ob o**d**   (Elaborated from Næss 2018b: 21)
            *i-te-**mä**-∅*
            PFV-see.UV-**DIR1**-3MIN
            '(S)he sees me/looks in my direction'

   b. *i-te-**wâ**-no*   c. *i-te-**kâ**-no*
       PFV-see.UV-**DIR2**-1MIN   PFV-see.UV-**DIR3**-1MIN
       'I see you/look in your direction'   'I see him or her/look in his or her direction'

Directional morphemes of this kind are common throughout Oceanic, and are reconstructed for Proto Oceanic in the forms **-mai/*-ma* DIR1, **-ua*[*tu*] DIR2 and **-lako/*-la* (Ross 2004: 194), of which at least the first two are plausibly diachronic sources for the Äiwoo ones (Ross & Næss 2007).

   The deictic centre according to which these suffixes are interpreted does not necessarily have to be the speaker or the speech situation, whereby 1st person = speaker, 2nd = interlocutor and 3rd = somewhere else. In fact, the deictic centre can shift to a salient participant in the current stretch of discourse. This does not appear to be restricted by the semantic role of the participant, nor by its syntactic function. In (111), the person handling the bowl (the A argument) is the protagonist of the action; therefore, *-mä* is interpreted as having him as the deictic centre, i.e. he pulls the bowl towards himself. In (112), on the contrary, the young man (still the A argument) has just been introduced, and it is the girl – not mentioned here, but previously – who is at the centre of the narration; therefore, the deictic centre of *-mä* is

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[14] At the present state of knowledge it is not known whether there are any verbs which must obligatorily bear a directional suffix, or cannot. Technical advancements on the software in which the data corpus is hosted might make it feasible to determine whether this is the case in a more time-feasible manner than going through each lexical verb by hand. Of course, however, ungrammaticality will only be proved by direct elicitation from native speakers consultants.

the girl herself. Note that in both sentences the verb is in undergoer voice; therefore, the interpretation of the deictic centre cannot be said to be dependent neither on the semantic role of the argument, nor on the syntax.

(111) *täpilo-ee*   *i-eââ-mä*   (Oponego 15)
       bowl-DEM.PROX   PFV-pull.UV-DIR1
       'He pulled the bowl towards himself' (-*mä*: deictic centre = A)

(112) *i-te-mä*   *sigiwâu*   *nyigi*   (Moliki 232)
       PFV-see.UV-DIR1 young.man   one
       'A young man saw her [a girl mentioned previously]' (-*mä*: deictic centre = O)

This variation in how the deictic centre is interpreted resembles the phenomenon known in the semantic literature as Indexical Shift: in certain languages (e.g. Amharic), in a sentence such as *John said that I left*, the pronoun *I* is interpreted as referring to *John* (i.e. the indended meaning is *John$_i$ said that he$_i$ left*), as opposed to referring to the speaker; see e.g. Schlenker (2003)[15]. It is not known yet how the deictic centre of the Äiwoo directional suffixes is computed, i.e. what conditions or systematicities there are on their interpretation.

The "directionality" of these morphemes does not have to be intended as strictly physical, i.e. a concrete movement of an entity along a path. As has already been seen, a verb like *te* 'see' can easily take a directional; in other words, actions can be carried out "in the direction of" a sensorial stimulus. This also applies to actions carried out e.g. for someone's benefit or on someone's behalf (Næss 2018b). Second person directionals seem to be particularly prone to have these types of reading. In the text from which the sentences in (113) are taken, the native speaker consultant is explaining and showing to the researcher how to bake potatoes in an earth oven. Both these sentences include a second person directional, likely meaning that the act of baking and the presence of the potatoes are somehow construed as to be beneficial for, or at least affecting the researcher.

(113) a. *ki-bi-wâ-no=nge*   (Baking 54)
           IPFV-bake.UV-DIR2-1MIN=DEIC.PROX
           'I will bake (for your sake/so that you can see)'

       b. *ilâ*   *butete*   *le*   *ki-to-wâ=to=we*   (Baking 96)
           DEIC.DIST potatoes   DEIC.PROX IPFV-be-DIR2=CS=DEIC.PROX
           'The potatoes are here now (for you)'

This function of the directionals is reminiscent of the so-called "ethical dative" of e.g. Romance languages. In this construction, a dative clitic pronoun does not encode an argument of the verb, nor a participant to the action *per se*; rather, it encodes "the evaluative attitude of a discourse participant towards the proposition" (Sitaridou 2017: 131). In other words, a discourse participant is construed as somewhat affected by the action, albeit often in a detached manner. In (114), the son is the only argument of the intransitive predicate; however, the ethical dative *me* implies that the speaker is affected (e.g. emotionally) by this lack of eating. In (115), on the other hand, the speaker construes the action of beating a third person as affecting the interlocutor.

(114) Spanish (Romance; Sitaridou 2017: 127, glosses adapted)
       No   *me*   *come* *mi* *hijo*
       not   1SG.ETHDAT   eats   my   son
       'My son doesn't eat (to my regret)'

(115) French (Romance; Sitaridou 2017: 132, originally from Kayne 1975: 170, glosses adapted)
       Je *te*   *lui*   *cass-er-ai*   *la*   *figure*
       I   2SG.ETHDAT   3SG.DAT break-FUT-1SG the   face
       '(Be sure that) I will beat him up'

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[15] I thank Patrick Grosz for bringing this phenomenon to my attention.

In some attested cases it is not entirely transparent how the directional contributes to the semantics of the predicate (or of the whole clause). In sentence (116), for example, it is not trivial to determine what the function of *-mä* DIR1 is; it is not unreasonable to assume that certain combinations of verb stems and directional suffixes have non-compositional, idiomatic meanings. Næss (2018b) is an investigation of the complex semantic interplay between the three directional suffixes and the directional verbs *to, lâ, ee, woli* 'go in, out, up, down', including the apparently counterintuitive semantic results of their combinations (e.g. *lâ-mä* go.out-DIR1 having the reading 'inside').

(116)   *sime   ku-nubo-**mä**   ngâ   nuumä   mi-dami*   (Burials 269)
         person   IPFV-die-**DIR1**   LOC.PREP   village   BN:one-different
         '(If/when) a person dies in another village'

3.5.2   DIRECTIONALS ARE (PROBABLY) NOT ARGUMENT MARKERS

A legitimate question that can be raised after the examples presented so far is whether the directional suffixes are instances of person marking, i.e. whether they encode arguments. For example, in (110) above ('(S)he sees me', 'I see you' etc.) it is not entirely implausible that the directional might be encoding the stimulus, while in other sentences it could encode a goal or benefactive argument, and so on. However, a counterargument to this is that the directionals themselves do not seem to affect the valence of the predicate in any way. For example, *wo* 'go' is an intransitive verb; *wo-mä* 'go-DIR1' bears most often the reading 'come', but is still completely intransitive. In the same way, *li-mele-kä-le* 3AUG-fly-DIR3-UA 'They two flew' is also as intransitive as the basic verb *mele* 'fly' is.

As noted above, there are no underived ditransitive verbs in Äiwoo, as in "verbs that take three syntactical arguments". This begs the question of whether directionals might actually be used as a device for marking recipient arguments in these types of three-participant verbs. The role of directionals in three-participant events is discussed in Margetts & Austin (2007: 430–431), with several examples from Oceanic languages, and they argue "[t]hat there is a recipient participant is only implicated and therefore defeasible. Nevertheless, the directional marking is clearly used as a means of expressing a third participant in the event as it gives details about the person of the recipient".

An in-depth study of this in Äiwoo has not been carried through as yet, but some superficial observations may be made (with the necessary caution). In chapter 6 I discuss how, in Äiwoo, person markers of 1st/1st+2nd/2nd person rarely co-occur with overt arguments, as opposed to 3rd person markers. If directionals are analysed as encoding arguments, this generalization would be no longer true; in (117), the O argument would be encoded twice, first as a directional and then as a person suffix.

(117)   *ku-wâ-pu-nâ-**mä**-gu-**de***   (Ceremonial speech 2 36)
         IPFV-CAUS-go-UV-**DIR1**-3MIN-**12AUG**
         'He feeds us' (*wâ-pu-nâ* = feed.UV, lit. something like 'make (the food) go (down)')

Given the fact that the generalization about non-3rd person markers not co-occurring with overt arguments seems to be quite solid otherwise, I prefer to analyze the directionals as not encoding arguments per se, although they may "point" at participants deictically. However, more in-depth investigation is needed to confirm this.

3.5.3   DERIVATIONAL VS INFLECTIONAL STATUS

Another non-trivial question to answer is whether these directional suffixes are best analyzed as inflectional morphemes or derivational ones. The difference between inflection and derivation (or 'word-formation') is an important one, although many have advocated that there is no categorical distinction, rather a continuum between the two prototypes (as early as Bloomfield 1933: 223: "this distinction cannot always be carried out"; for a more recent overview, cf. ten Hacken 2014 and references therein).

Stump (2015) uses the following criteria (summarized from Stump 2015: 53–56) to delinate the distinction between the two (note that he uses the term 'word-formation' covering both derivation and compounding), although he also underlines weak point(s) and possible counterexamples to each of them (similar lists are also given in Beard 1998, Stump 1998).

(A) Word-formation operations may change the part of speech of a given expression, while inflection operations cannot.

(B) Inflectional operations tend to apply to all members of a given category without exception (e.g. all nonmodal English verbs will inflect for person), while word-formation operations do not (e.g. the operation deriving *whiten, darken* from *white, dark* does not apply to *late*).

(C) Inflectional operations tend to make a regular semantic contribution (i.e. a past tense affix contributes with the same semantics to all verb to which it is attached), while word-formation does not necessarily do so.

(D) Inflection is relevant to the syntax: a given syntactic construction might impose the choice of a given inflected form. This is never the case for word-formational operations.

(E) Word-formation markers are closer to the stem than inflectional markers (Greenberg's 1963 Universal 28).

Other scholars add the criterion of obligatoriness (F), stating that inflection is obligatory whereas derivation is not (Booij 2006): an English noun, for example, will always have to be inflected either singular or plural (with no marking in the former case), and there is no possibility of leaving this unspecified.

By examining Äiwoo's directional suffixes in light of these criteria, it appears that they are definitely closer to the derivational prototype than to the inflectional one. Criterion (A) is not appliable, since they do not change the category (i.e. they attach to verbs, and the product is still a verb). Criterion (B) does not provide conclusive evidence either, since it is not known whether there exist verbs that must (or cannot) take the directional suffixes. If it is the case that all verbs can take directionals, this needs not be taken as evidence for the fact that they are inflectional: in English, for example, the suffix *-ing* applies to all nonmodal verbs, although it is more clearly derivational on other terms. Criterion (C), on one hand, may support the idea that the directionals are derivational: their semantic contribution to the predicate does not seem to be regular, i.e. it is not predictable without referring to the base stem itself (cf. the combinations with the directional verbs 'go up, down, in, out' above), world knowledge, pragmatic and discourse factors, etc. On the other hand, it may also be the case that their semantics is regular, but highly abstract, in the same way as e.g. the semantics of a mood such as 'subjunctive' (traditionally analyzed as pertaining to inflection more than to derivation) are far from trivial to describe[16]. Criterion (D), indicated by Stump (2015) as the most robust one, meets the same descriptive problem as criterion (B): at the present state of knowledge, the directional suffixes appear to be optional (although so common to be at least heavily preferred in certain contexts; precise patterns of acceptability might have to be derived through direct elicitation), cf. criterion (F). If this is the case, then there would be no syntactic contexts that require a directional suffix (or viceversa). However, evidence for this is per now not conclusive. Criterion (E) support the derivational analysis as well: the directional suffixes are closer to the stem than clearly inflectional morphemes such as e.g. person affixes. The only argument for analyzing the directional suffixes as inflectional rather than derivational is their neat person-oriented paradigm, something which is classically associated to inflection (Booij 2006); however, cf. Bauer (1997), Štekauer (2014) for proposals involving derivational paradigms. Note that analyzing these suffixes as derivational does not need to imply that e.g. *wo-kä* 'go-DIR3' is a different lexeme than *wo* 'go', stored in the speaker's brain along with all the other possible combinations, ast least not if one does not assume a strongly lexicalist model of the grammar, where derivation applies only in the lexicon, i.e. pre-syntactically, and inflection only above the lexeme level, i.e. in the morphosyntax; see chapter 5 for a discussion of this.

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[16] I thank Patrick Grosz for this observation.

3.6   SERIAL VERB CONSTRUCTIONS

3.6.1   BRIEF THEORETICAL BACKGROUND

Among the wide range of literature about serial verbs and serial verb constructions (SVCs), I adopt here Aikhenvald's (2018: 4) framework and definition, in which SVCs are defined in terms of the following prototypical features (note that these are not necessary conditions, although a construction lacking the first three features would hardly be called a SVC).

(A) In a SVC there must be at least two verbs, both of which also can occur as free-standing independent verbs in a clause.

(B) There must not be any marking of dependency, e.g. coordination or subordination, between the verbs of a SVC.

(C) "A [SVC] is monoclausal – it functions as a single predicate" (Aikhenvald 2018: 4). This implies that the various grammatical categories which may apply will have scope over the whole construction (the different verbs will not be able to have different values for tense, aspect, mood, negation, etc.); moreover, a SVC is pronounced within a single intonational contour, i.e. as a single word.

(D) The whole SVC will have one transitivity value, which will depend on the transitivity of the individual verbs and language-specific (or construction-specific) patterns.

(E) At least one argument is shared between all the individual verbs, typically the S or A argument (although exceptions exist, cf. Crowley's 2002 'ambient serialization' where no arguments are shared).

(F) The whole SVC does not describes a sequence of events, but a single one (possibly with a complex inner structure).

An additional distinction traced by Aikhenvald (2018) is the one between asymmetrical and symmetrical SVCs. In the former, the verbs composing the SVC do not have the same status: the 'main' verb can be chosen from an unrestricted class (i.e. the whole lexicon) and heads the construction, while the other one(s) can only be members of specific and restricted classes, such as verbs indicating e.g. direction, manner, extent, state, modal values (possibility, obligation etc.) and so on. In the latter, on the other hand, the various verbs have the same status, and the only restrictions are based on semantic plausibility: for example, two verbs like *swim* and *sing* will not be able to form a SVC, because they will hardly ever be conceived as natural subparts of a single event. Moreover, none of the components can be said to be the head of the SVC (at least not trivially). The difference between asymmetrical and symmetrical SVCs will be important in the discussion of two SVCs in Äiwoo, i.e. 'head-modifier' and 'complex-event' (cf. section 3.6.2 below).

The last theoretical distinction useful for describing the Äiwoo system is the one between nuclear-layer and core-layer verb serialization, originally developed in the grammatical framework of Role and Reference Grammar (RRG; Foley & Olsen 1985, Van Valin & LaPolla 1997). In this model of grammar, the nucleus is the innermost layer of the clause (containing the predicate itself and e.g. voice and aspect), while the core is the hierarchically higher level (containing the arguments and e.g. modality). Depending on at which layer verbs are serialized, this will result in different structures, which can be exemplified as SVVO for nuclear-layer and SVO(S)V(O) for core-layer (Bril 2004). Aikhenvald (2018: 18) argues that in Oceanic linguistics, the distinction between nuclear- and core-layer serialization seems at times to have been reinterpreted to the one between SVCs with single marking (where categories such as person/number agreement and TAM are marked once for all verbs) vs concomitant marking (where they are marked on each verb), with no reference to the original RRG concepts. This distinction has also been modelled in generative literature such as Massam (2013), where it is distinguished at which node of the syntactic tree the serialization applies (e.g. at vP, at VP, etc.).

3.6.2 Serial verbs in Äiwoo

3.6.2.1 Serialized stems: nuclear-layer verb serialization

From the Äiwoo sentences shown so far to illustrate various phenomena, it should already be clear that it is not uncommon to have multiple lexical roots within the same verb complex. Of these, a number are only attested to occur within the verb complex and barely ever as independent words/predicates, e.g. *mana* 'very', *eopu* 'also', *ute/usi* 'again', etc. Other ones are attested both by themselves and together with other roots within the same verb complex. The sentences in (118) (repeated from (80)), (119) (repeated from (84)), and (120) show how several lexical verbs, bracketed in the examples, can act as one single stem (slot 0) and share a single set of aspect marking (slot -2), person marking – regardless of whether it is suffixed (slot 1 in (118)-(119)) or prefixed (slot -1 in (120)) – and post-verbal clitics at the right edge (slot 6 in (120)).

(118)   -2 _____0_____ 1a 1c   (Childbirth 201)
       i-[[[siwo]-[ee]]-[doo-nyi]-kä]-i-le
       PFV-hold.UV-go.up-like.that-UV.AGR-DIR3-3AUG-UA
       'They two lift her up like this'

(119)   -2 _____0_____ 1a   (Nyilieteina 415)
       ku-[[[wâ-[nubo]]-wâ]-[ngege-nyii]]-no
       IPFV-CAUS-die-UV-straight-UV.AGR-1MIN
       'I kill it straight away'

(120)   -2 -1 _____0_____ 6   (Fishing cairn 327)
       ku-lu-[[[po]-[to]]-[du]]=kaa
       IPFV-3AUG-go-go.in-finish=FUT
       'They will all go in'

Not only the stem itself (the whole slot 0) can be complex, but the elements composing it can be complex themselves, i.e. consist of several morphemes, as best illustrated in (119) where the first stem *wâ-nubo-wâ* consists of three morphemes and the second one *ngege-nyii* consists of two morphemes. The unit which undergoes serialization appears thus to be verb stems, as opposed to bare roots, and there appear to be clear evidence of hierarchical structures, rather than an organization based on a linear template (although, once again, the system of linear slots employed here can be useful as a descriptive tool).

Consider sentence (121a) as an illustration of the potential complexity involved in serial verb constructions, which essentially has the same structure as (119) above. First, the verb *pu* 'go' is causativized, deriving a transitive verb in AV; then, this is turned into UV by *-nâ* (the whole form *wâ-pu-nâ* has the somewhat idiosyncratic meaning of 'feed', i.e. 'make (something) go (down)'). Then, this UV stem is serialized to *vesi* 'still, keep', which has to agree in UV by means of the agreement marker *-i*. The inner structure of the stem is informally represented in (121b). When the whole complex stem has been built – the outermost bracket in (121a), equivalent to the topmost node in (121b) – it inflects in exactly the same way as a simple verb stem.

(121)   a. *ku-[[[wâ-[pu]]-nâ]-[vesi-i]-kä]-i=to=wâ*   (Childbirth 479)
           IPFV-CAUS-go-UV-still-UV-DIR3-3AUG=CS=DEIC.DIST
           'They keep feeding (him)'

b.

```
                              UV stem
                     _____/        _____
                    /                          \
                UV stem                      UV Stem
             ___/      \___              ___/      \___
            /              \            /              \
        AV stem         AV > UV     INTR/ADV        UV.AGR
        /     \           -nâ         vesi             -i
    CAUS     INTR
     wâ-      pu
```
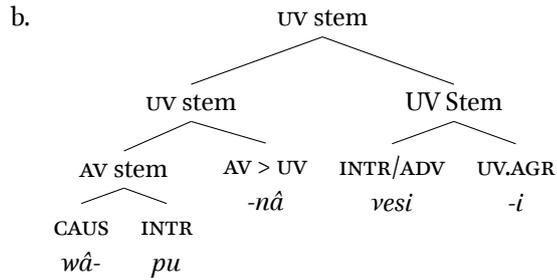
Summing up, the morphosyntactic material undergoing serialization is verb stems, including valence and voice information, but excluding everything else (e.g. aspect, argument structure). This places the Äiwoo system under the label of nuclear-layer verb serialization discussed above, and the SVCs take simple marking as opposed to concomitant marking (i.e. grammatical categories pertaining to the verb complex apply only once for the whole SVC, and not multiple times with agreement between themselves; however, the UV voice feature of the main stem needs to be agreed with by the following stems).

The question of whether Äiwoo also shows core-layer serialization, or serialization with concomitant marking, is a difficult one to answer. Äiwoo, like many other Oceanic languages, routinely drops both coordination markers and any argument which may be somewhat inferrable from the discourse context. Therefore, it is not clear what diagnostics could be used to determine whether a sentence contains a SVC with two juxtaposed inflected verb forms, as opposed to two independent clauses with dropped arguments. Analytical problems of the same nature are noted for Polynesian language Vaeakau-Taumako, a geographical close neighbour of Äiwoo (Næss 2004). In addition to these analytical problems, this thesis' object of research is the verb-complex-internal morphosyntax; the issue of core-layer serialization is thus orthogonal to my purposes, and I leave it therefore aside.

3.6.2.2   DIFFERENT TYPES OF SERIALIZATION

Two main types of verb serialization are attested in Äiwoo, with identifiably different syntactic behaviour as well as different semantics; the labels are from Næss & Boerger (2008). The first type (intuitively the most common one, although precise quantitative data are as yet not available) is head-modifier serialization, and the term is relatively self-explanatory; this is also called manner serialization in Næss 2012. In this construction, the first verb is the head of the construction, thereby establishing the valence, voice and main semantics of the whole verb form; the following stems, regardless of whether their semantics is more verbal or more adverbial in nature, modify the head (i.e. the first stem), for example with directional semantics, manner/extent (e.g. *päko* 'good', *mana* 'very'), aspectual specifications (*ngege* 'straight away, immediately', *ute/usi* 'back, again'), etc. As illustrated above, since the voice and transitivity values of the whole SVC (of this type) are determined by the first verb, the following ones have to agree by means of the suffix *-i/nyii* if they are intransitives.

This construction is an asymmetric one in Aikhenvald's (2018) classification: the first verb is the one from the unrestricted class (i.e. it can be any verb), whereas the following ones often are recurring stems. It is not known whether there are clear restrictions in terms of which verb stems can occur where; the fact that a given stem is never seen to occur independently, but only in a SVC, could be a consequence of scarce attestations. Some elements seem not to have a fixed order, such as *päko* 'good' and *ute* 'again' in the following sentence pair. From the corpus data and without access to native speakers, however, it is not clear whether the different linear order results in different scope readings, e.g. [[make good] again] vs [[put (things) back] properly].

(122)   a.   *ku-lu-pwâle-**päko-ute***   (Nuts and fruits 195)
             IFPV-3AUG-put-**good-again**
             'They want to improve (the fruits of S. Cruz)

    b. *de-wâle-**ute-päko***   (Nuts and fruits 225)
       12AUG-put-**again-good**
       'We can rearrange/improve'

The second type of SVC is the so-called complex-event one. In this construction, the different stems do not first establish the event type and then modify it; rather, they build up the total semantics collectively, representing different aspects of the main event. In (123), for example, the two stems *so* 'stand' and *bengi* 'block' equally participate to describing the event of blocking a path. It can also be seen that here, the voice and transitivity value is determined not by the first stem but by the last one: the object is preverbal, and the verb itself takes a person suffix (in this case a null one, but its presence can be inferred by the *n*-initial form of the deictic clitic after it).

(123)   *mo*   [*dee* *nye-ku-pu-to-kä=nä=nâ*]ₒ
       CONJ this   BN:place-IPFV-go-go.in-DIR3=CV=DEIC.DIST
       lâ   *i-**so-bengi**-∅=nâ*   (Næss 2012: 401)
       DEIC.DIST PFV-**stand-block**.UV-3MIN=DEIC.DIST
       'Because he was blocking the way she had come'

In chapter 5, I propose a syntactic model of the head-modifier SVC based on hierarchical structures, in which the leftmost verb stem is the most embedded one, and the subsequent ones modify it. I do not propose a syntactic model of the complex-event SVCs.

Problems of affix order

4

4.1 WHERE ARE CATEGORIES MARKED?

In what could be considered a "well-behaved" morphological system, one would expect grammatical categories and the locus of their marking to correlate. For example, marking of tense would always occur in one given place, marking of person in one place, etc. Turkish, with its notoriously regular agglutinative morphology, can be an illustration of this concept, for example considering the inflectional paradigm for the word *ev* 'house' in (124). One could analyse this (simplified) data set by positing a three-place linear template, with one slot for the root, one slot for number marking (*ler* for plural, and ∅ for singular) and finally one slot for case marking.

(124)   Turkish nominal morphology (elaborated from Lieber 2009: 133)

ev	house	*ev-ler*	house-PL
ev-i	house-ACC	*ev-ler-i*	house-PL-ACC
ev-in	house-GEN	*ev-ler-in*	house-PL-GEN
ev-e	house-DAT	*ev-ler-e*	house-PL-DAT
ev-de	house-LOC	*ev-ler-de*	house-PL-LOC
ev-den	house-ABL	*ev-ler-den*	house-PL-ABL

Root	Number	Case
0	1	2
ev	{∅, -ler}	{∅, -i, -in, ...}

Of course, most languages are not this neat (and Turkish is not this neat either, apart from this carefully chosen data set). Having described (most of) the verb-related morphemes in Äiwoo, it seems clear that grammatical categories and the place where they are marked do not correlate precisely. For example, the same grammatical category can be marked in different places.

Table 4.1 is repeated from chapter 2, this time with different cells highlighted according to what grammatical category they are related to. Below the table, the highlighted slots are illustrated with examples repeated from the previous chapters.

Table 4.1: Correspondences (and lack thereof) between grammatical categories and locus of marking

PM	Asp	PM	Stem											PM			A	Q	Post-Verbal Clitics				
-3	-2	-1	0											1			2	3	4	5	6	7	8
			[a	a′	b	c]	[b′	c′]	[b″	c″]	d	a	b	c									

The dark-gray cells are all related to aspect and mood/modality (-2 = aspectual/modal prefixes, 4 = aspectual/modal clitics, 6 = future/habitual clitic), despite being at a distance from each other. These are illustrated in (125) (slot 5 hosts the negative clitic *=gu*, the only post-verbal clitic absent from this form). Interistingly, the morphemes occurring within the same slot do not necessarily have the same phonological properties: the marker *de* 'apprehensive', in slot -2, takes its own stress and is thus transcribed as a free-standing word, whereas the other morphemes occurring in the same slot do not (see chapter 2, section 2.2); compare in this respect (126) to (125).

(125)   -2   0b   0d 1a **4**   **6**   7   8
         ki*-*vängä*-*kä*-*i*=to***=***waa***=*kä*=*nâ***
         IPFV-eat.AV-DIR3-3AUG=**CS**=**FUT**=CV=DEIC.DIST
         'They will start eating it'

(126)   **-2**   ɔb ɔb′ 3   (Täpeo 45)
nyenaa **de** *baki-ee=dä*   *ngâ*   *nuwopa*
tree   APPR break.UV-go.up=some LOC.PREP house
'[We were worried that] a tree would fall down on the house'

The light-gray cells in table 4.1 are all related to person marking, or more generally to indexing the arguments' person/number features. Slots -3 and -1 are the loci for person marking of respectively 1st/1+2nd/ 2nd person and 3rd person arguments in intransitives and AV verbs, as shown in (127)-(128). Slot ɔa′, also shown in (128), can be used for marking plural Os only with four verbs when combined with a causative prefix. The three slots in 1 are used for UV verbs, as shown in (129) (but the slot 1c for *-le* 'unit-augmented' can be used for intransitives and AV verbs as well, although this is not shown here). Due to their transitivity and voice-based distribution, the slots in -3/-1 and 1a/1b are mutually exclusive (although there are some exceptional attestations of a 3AUG prefix *li-* in slot -1 co-occurring with suffixes in slots 1a/1b; this construction is poorly understood).

(127)   **-3** -2   ɔb   ɔd   4   8   (Nyiwakena nyigena 204)
me-ki-vevaale-wâ=to=wâ
1AUG-IPFV-open-DIR2=CS=DEIC.DIST
'We wait'

(128)   **-1**   ɔa ɔa′ ɔb   (Nyiveina benuwää 150)
nâbo   *lâ*   **lu**-*pwâ*-**li**-*to*   *ngämi=nâ*
dried.breadfruit DEIC.DIST 3AUG-CAUS-3AUG-go.in there=DEIC.DIST
'They put the *nâbo* (pieces) into it'

(129)   -2   ɔb ɔc ɔb′ **1a 1b 1c**   (Moliki 500)
*i-luwo-i-lâ-**gu**-i-le*
PFV-rush-COM-go.out-**3MIN-3AUG-UA**
'She rushed out with (=carrying) them (two)'

Finally, the hatched cells in table 4.1 have all to do with valence (and voice), i.e. the morphemes in those cells all play a role in determining how many participants will be coded as core arguments of the verb, and how. Among these one finds the comitative applicative *-i* in slot ɔc (129); the causative prefix *wâ-* in slot ɔa and the UV marker *-eâ* also in slot ɔc (130); the UV agreement marker *-i/-nyii*, occurring recursively in slots ɔc′, ɔc″, etc. as shown in (130)-(131). The last morpheme of related function is the circumstantial voice marker *=Cä* in slot 7, as shown in (132).

(130)   -2 **ɔa** ɔb   ɔc   ɔb′   **ɔc′** 1a   (Nyilieteina 415)
*ku-**wâ**-nubo-**wâ**-ngege-**nyii**-no*
IPFV-**CAUS**-die-**UV**-straight-**UV.AGR**-1MIN
'I kill it straight away'

(131)   ɔb ɔb′ ɔb″ **ɔc″** ɔb‴ **ɔc‴** 4 ?(8)   (Nyiveina benuwää 112)
*siwo-lâ-doo-**nyii**-päko-**i**=ja=pwâ*
hold.UV-go.out-like.that-**UV.AGR**-good-**UV.AGR**=HORT=?
'Can you hold it out properly like that?'

(132)   -2 ɔb ɔb′**1a** 7   (Fishing cairn 275)
*nye-ki-vei-lâ-i=**lä***   *benuwää*
BN:manner-IPFV-weave.AV-go.out-3AUG=**CV** kind.of.basket
'The way they weave the *benuwää*'

Given this complex interweaving of which grammatical categories are marked where in the verb form, the main purpose of this thesis is to determine whether the positioning of these morphemes follows from independently needed principles of syntactic organization and semantic scope, or if their linear sequence has to be stipulated arbitrarily. In the following chapters, I aim to give the former answer to

this question, that is that (most) Äiwoo morphemes can be accounted for in terms of their distribution and behaviour by appealing to independent principles, with the crucial exception of the circumstantial voice marker =*Cä*. I will argue for this by modelling the Äiwoo verb (and clause) using the tools of the generative Minimalist Programme (Chomsky 1995, 2000, 2001) and its primitive operations, e.g. Merge and Move, combined with tools of Distributed Morphology (Halle & Marantz 1993, Harley & Noyer 1999). Of course, the possibility of moving elements around is a powerful theoretical tool to use to approach a problem like affix order, and must be constrained enough so not to render the model a mere restatement of the problem (that is, merely stipulating movements that will make the final order "add up", but that are otherwise unmotivated).

In the following sections, I first highlight why the affix order attested in Äiwoo is typologically unusual (section 4.2). Then, in section 4.3 I propose that the interactions between certain morphemes in Äiwoo resembles what have been called "discontinuous dependencies" (see chapter 1), patterns of interrelations between non-adjacent morphemes, that have been predicted to be a symptom of a templatic morphological system. Finally, section 4.4 summarizes the content of chapters 5 and 6, which contain the more generativist-oriented material of my thesis. This section is therefore an attempt at informally presenting those formal analyses, explaining their core aspects and workings to those readers who are not familiar with the minimalist framework.

4.2   THE ORDER OF ÄIWOO MORPHEMES: BYBEE'S (1985) RELEVANCE HIERARCHY

One prominent approach to the questions posed by affix order within the typological/functionalist tradition is the one in Bybee (1985), already presented in chapter 1. This work is a comparative investigation of affix order in 50 typologically and genetically different languages, and one conclusion is that verb-related morphemes tend to occur in the order in (133), called the relevance hierarchy ($\ll$ is to be read "external to", meaning "less close to the stem"). Person marking, not included in the hierarchy, is usually the most external category of them all, because it is less "relevant" to the semantic content of the verb.

(133)   MOOD $\ll$ TENSE $\ll$ ASPECT $\ll$ VOICE (Bybee 1985)

If one compares this to the Äiwoo linear template in table 4.1 above, the mismatches are immediately clear. Due to the interweaving of where different categories are marked, aspect and mood(/modality) are both closer to the stem than person marking (e.g. slot -2 compared to slot -3) and further away from it (e.g. slot -2 compared to slot -1, or slots 4/6 compared to slot 1). Moreover, voice is indeed marked on the verb stem itself as Bybee predicts, but also relatively far away from it (circumstantial voice, slot 7). In other words, without looking beyond the linear order of the Äiwoo morphemes, there seems to be little hope for an explanation based on independent syntactic or semantic principles. Considering how these slots are interrelated, there seems indeed to be even less hope; this is the object of the next subsections.

4.3   DISCONTINUOUS DEPENDENCIES IN ÄIWOO

4.3.1   PERSON MARKING: A NUMBER OF INTERRELATED SLOTS

As presented above, person prefixes occur in two different places, depending on the S/A argument's person/number feature. In fact, 3AUG S/As are marked in slot -1, to the right of the aspectual/modal markers, whereas all other person prefixes are in slot -3, i.e. to the *left* of the same markers. If one considers word-building to be a stepwise hierarchically ordered process (i.e. morphemes are attached "from the inside out", to put it informally), this would imply that the information regarding the person and number features of the S/A argument would have to be known before the aspect marker is added, but the

word-building process would in most cases "wait" to until aspect has been marked as well (i.e. if the S/A is anything else than 3AUG).

Moreover, the behaviour of the unit-augmented suffix *-le* (slot 1c) is rather unusual, at least if one considers it to be part of the number system, following the currently available literature about Äiwoo. In UV, where the verb's argument(s) is/are marked by suffixes, *-le* is strictly adjacent to the person marker it modifies, and this is unproblematic. However, in AV and intransitives, *-le* is still suffixed to the verb form, while the S/A argument is marked with prefixes. If 'unit-augmented' is its own number category then, this behaviour means that it will be marked by suffixes (e.g. *de-le* 12AUG-UA) in UV, but by circumfixes (*de-...-le*) in AV and intransitives. The way in which *-le* behaves differently from the other person/number markers could be accounted for if one analyzes it as not being the same thing as the other markers, and in this respect I propose to analyze it as a floating quantifier (see section 4.4.4 below, and chapter 6).

Finally, even more puzzling is slot oa′. This is the only case in Äiwoo in which an O argument is marked by a prefix, and with strong restrictions: only 3AUG arguments are marked here, only in causative constructions, and only with four directional verbs.

The system of person suffixes offers some challenges as well, at least if one adopts a strict model of how morphemes attach one to another, e.g. that once a morpheme is put in place than nothing can happen to it anymore. In fact, these suffixes occur in one of two patterns, depending on the combination of person/number features of the A and the O argument. In brief, the O can be marked on the verb, in slot 1b, if and only if A = 1MIN and O = 2nd person, as in (134a), or if A = 3MIN and O = non-3MIN, as in (134b). These are the only cases in which both slot 1a and slot 1b are filled; for all other combinations of A and O, the pattern in (135) occurs, where the A is marked in slot 1a and the O appears as an independent pronoun, or dropped altogether.

(134) a. -2   ob   **1a 1b**   6
           *i-togulo-**nee-mu**=waa*
           PFV-hit.UV-**1MIN-2MIN**=FUT
           'I will hit you'

       b. -2   ob   **1a 1b**   6
           *i-togulo-**gu-mu**=waa*
           PFV-hit.UV-**3MIN-2MIN**=FUT
           '(S)he will hit you'

(135) a. -2   ob   **1a**   6
           *i-togulo-**no**=ngaa*   ***ijii***
           PFV-hit.UV-**1MIN**=FUT   **3AUG**
           'I will hit them'

       b. -2   ob   **1a**   6
           *i-togulo-**∅**=naa*
           PFV-hit.UV-**3MIN**=FUT
           '(S)he will hit him/her/it'

Moreover, the morphemes used for marking the A in the cases in (134) are different from the ones which are used otherwise. For example, the normal 1MIN suffix is *-no* (135a) whereas in (134a) the same suffix is *-nee*; moreover, normally a 3MIN A is marked by a ∅ suffix (135b), but in (134b) it is marked by *-gu*. This is somewhat problematic, as when the morpheme marking the A is added, the features of the O must already be known in order to select the correct allomorph.

4.3.2   THE CIRCUMSTANTIAL VOICE MARKER =*Cä*

As presented briefly in section 4.2 above, this morpheme's distribution as a voice marker is puzzling. The other voice markers in the language (whether one analyzes them as affixes for actor and undergoer voice, or lexicalized differences between A- and O-verbs) are either the closest element to the verb stem, or even an unsegmentable part of it. This is in accord with Bybee's (1985) typologically tested proposal that the elements that are most "relevant" to the semantics of a verb will also be morphologically closest to the root, or Baker's (1985) Mirror Principle. However, =*Cä* does not follow these expectations. As a third voice marker, not only it is not close to the stem or fused to it, but it is one of the elements furthest away from it, occurring even after internal arguments; this is typologically very unusual.

Another even more problematic property of =*Cä* is its interaction with the person marking system. Normally, intransitives and AV verbs take prefixes, as illustrated in (136), where the verb *vei* 'weave.AV' is marked by the prefix *me-* 1AUG. When =*Cä* is added, however, the same verbs take suffixes instead, such as *-i* 3AUG in (137), repeated from (132) above.

(136) ***me**-nä-vei*   (Basket weaving 11)
        1AUG-IRR-weave.AV
        'We (want to) weave it'

(137) *nye-ki-vei-lâ-**i**=**lä***   *benuwää*   (Fishing cairn 275)
        BN:manner-IPFV-weave.AV-go.out-3AUG=CV   kind.of.basket
        'The way they weave the *benuwää*'

This behaviour poses challenges for the assumption that morphemes are added one by one in a layered, hierarchically structured fashion. When a verb is being inflected, the morphological system would have to "make a choice" between marking the A argument with prefixes or suffixes, depending on the voice; crucially, the choice has to take place before *=Cä* is added to the structure. The two figures in (138) show possible derivations of UV verbs (138a) and AV verbs (138b), both with *=Cä*; these schemes are taken to be illustrations only, with no theoretical claim being made about the internal structure of Äiwoo verbs.

If it is a UV verb being inflected (138a), the process is relatively straight forward. The verb root is first joined by voice information (undergoer voice) and aspect, than person marking (PM) is added as a suffix, then later in the derivation *=Cä* is added, and the final order is the attested linear one. As opposed to this case, the derivation of an inflected AV verb or an intransitive with *=Cä* (138b) presents clear issues. After aspect is added, the default placement of person marking for these verbs is prefixed to it. However, what is attested is not prefixes but suffixes (which moreover in some cases have different forms): in other words, the system would have to "know" that *=Cä* is going to be added later on in order to make the correct choice. This is a violation of the so-called 'No look-ahead constraint' (Simpson & Withgott 1986), and would thereby imply that (at least some subsets of) the Äiwoo morphosyntactical systems must follow an arbitrarily stipulated linear template.
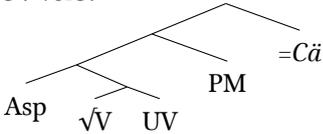
(138) a. UV verb: b. AV verb:
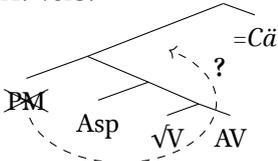
4.4   SOLVING THE PROBLEMS: A MINIMALIST ANALYSIS OF THE ÄIWOO VERB

4.4.1   AN INFORMAL SUMMARY OF THE FORMALIZATION

In chapters 5 and 6 I aim to solve the problems outlined above, i.e. how to account for the distribution and behaviour of the morphemes occuring in the Äiwoo verb without appealing to arbitrary stipulations about their linear order (in other words, a template). To this purpose I propose a model within the generative Minimalist Programme, and I argue that the theoretical tools offered by this framework make it possible to model the Äiwoo verbal morphosyntax as consisting of hierarchical structures, and following from what is already established principles within theoretical syntax (e.g. the order of functional projections, constraints on movement operations, etc.).

As mentioned in the introductory chapter, the research contained in the present thesis is of a rather "mixed" nature, straddling between the more typological/functionalist and descriptive tradition and the more formal/generativist one. Due to this, I do not expect all readers to be as familiar with the theoretical technicalities and workings of minimalism (nor with the more clearly typology-oriented notions, for that matter). Therefore, throughout the rest of this section I try to "unpack" my formal analysis into non-formal terms, going through the core aspects of it; note that this section should not be taken as an introduction to the minimalist framework itself. The reader who does not work within the this framework – or is not interested in the technicalities – might thus want to focus more on this summary.

4.4.2   THE STEM AREA

After a brief background on the theoretical assumptions being made, the first half of chapter 5 (section 5.2) proposes an implementation of how the stem area is built. I assume a theoretical framework based on the Minimalist Programme (Chomsky 1995, 2000, 2001), with a non-lexicalist view of word-structure based on Distributed Morphology (Halle & Marantz 1993, Harley & Noyer 1999); this combination is also adopted i.a. in Julien (2007). One core aspect of this framework is that morphemes are analyzed as representing their own syntactic objects (heads), so that the process building complex words is not (too) dissimilar from the one building phrases: both consist in the layering of syntactic material in hierarchical structures. Verb serialization is thus modelled as the layering of one lexical verb on top of the other, and which one is above or below which other one depends on their semantic relationship. Consider for example the combinations *lotâlâ-päko* 'prepare properly' in (139a). Semantically, *päko* 'good, properly' clearly takes scope over *lotâlâ* 'prepare', so it must be higher up in the hierarchical structure (as indicated by the bracketing). In the syntax, the lower verb adjoins to the higher one through the operation of head movement; this is repeated for any successive verb root, with the node containing *lotâlâ-päko* adjoining to a higher verb node, etc. (see chapter 5, sections 5.2.1-5.2.3 for details and arguments for why the adjunction works in this precise manner).

(139)   a. *ki-li-*[[***lotâlâ***]*-**päko***]*=kâ*   b.
            IPFV-3AUG-prepare.AV-good=DEIC.DIST
            'They prepared (it) properly'
            (Fermenting breadfruit 72)
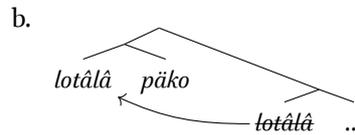
The directional suffixes *-mä* DIR1, *-wâ* DIR2 and *-kä* DIR3 are modelled essentially as part of the verb serialization process, with the only difference being that these have (diachronically) lost their independence as verbal roots and have grammaticalized into a fixed position; note that many of these suffixes' cognates in other Oceanic languages are more clearly verbal in nature (Ross 2004). Moreover, the aspectual/modal markers in slot -2 are also modelled as syntactic heads to which a (possibly already complex) head adjoins.

The distribution of the UV agreement morpheme *-i/-nyii* can be argued to follow from this model of verb serialization. Recall that this morphemes occurs on intransitive or adverbial roots when they are serialized to the left of UV roots. As implied by the illustration above, I propose that the leftmost verb stem is the hierarchically most embedded (lowest) one. Whether this verb is in AV or UV is determined before adding possible additional verb roots, i.e. before the verb serialization process starts. If the most embedded verb stem is in UV, this voice information spreads upward in the hierarchical structure, and the subsequent roots agree therefore in UV with the first one.

Finally, other morphemes occurring within the stem area are the causative prefix *wâ-* and the applicatives *-ive*, *-i*. Although their linear position might suggest that their nature is somewhat different, in this framework they can be modelled quite similarly, i.e. as heads of their own phrases, directly dominating the verb root they modify. The reason why they appear on opposite sides of the verb root they modify has to do with the way elements are linearized at the interface between syntax and phonology. In order to model this I make a departure from Julien's (2007) work: while she assumes a strictly Antisymmetric framework (Kayne 1994), I follow (Harley 2013a,c), who proposes that the syntax machinery merely creates hierarchical structures: although practical constraints force us to notate two heads either in order A-B or B-A, this is not intrinsically determined in the syntax proper; at this point, the only information present in the syntax is that A and B are at the same hierarchical level. Later, when the syntactic information is sent to the phonological module, the different elements have to be put in a given order, since we cannot pronounce hierarchical structures, but only linear strings (this fact follows fairly trivially from our anatomy). At the moment of linearization, the morphemes are individually specified (i.e. in the lexicon) as to whether they linearize to the left, as the causative prefix does in (140a), or to the right, as the

applicative suffix does in (140b). Note that Antisymmetric approaches ban head-adjunction to the right as in (140a), whereas other models (such as the one described in Harley 2013a,c) allow it.

(140)   a.   b.

wâ-   VERB   VERB   -ive

VERB   ...   VERB   ...

4.4.3 THE POSITION OF THE POST-VERBAL CLITICS

A prominent characteristic of the post-verbal clitics, and the reason why they are analyzed as clitics to begin with, is their asymmetric distribution when comparing the two main types of transitive clauses, i.e. AV and UV, as shown by the two following sentences. In the AV sentence in (141), the O argument is to the right of the slot 4 clitic *=to*; as opposed to this, in the UV sentence in (142) the A argument is to the *left* of the slot 4 clitic *=jo*.

(141)   ___A___   ___V___=CL (slot 4)   _____O_____   (Moliki 78)
        [*tumwä*]   *i-lâwââ-kä=to*   [*opo   nyigi   lakwaio   tä=nâ*]
        father.3MIN   PFV-build.AV-DIR3=CS   house   one   small   POSS:LOC.3MIN=DEIC.DIST
        'Her father built a small house for her' (AV: the order is A V=CL O)

(142)   ___O___   ___V___   ___A___=CL (slot 4)   (Nubulaa 53)
        [*de-enge*]   *i-ngä-kä*   [*isäpelivano*]=*jo*
        BN:thing-DEM.PROX   PFV-eat.UV-DIR3   wife.3MIN=PROG
        'His wife ate this one' (UV: the order is O V A=CL)

In Næss (2015a), this asymmetric pattern was at the basis of an analysis of Äiwoo as syntactically ergative, i.e. a language in which S and O arguments pattern alike (in this case, being external to the verb phrase), whereas A arguments pattern differently (here, being the verb phrase-internal argument). As was noted in this article, this syntactic ergativity does not however correlate with the presence of a S/O pivot: in other words, despite patterning alike in terms of linear constituent order, Ss and Os do not have any other syntactic "privileges".

An alternative to this is to derive the constituent order facts from different factors than syntactic ergativity. In the second half of chapter 5 (section 5.3), I propose an analysis of the Äiwoo clause based on several earlier proposals about languages from the whole Austronesian family (see Erlewine 2018 and references therein); I summarize it coarsely here. Essentially, the VP is accusatively oriented, with O being the internal argument and A being the external argument, introduced in a higher projection (VoiceP). The main part of the stem is built through head movement as presented in section 4.4.2 above and illustrated in the tree in (143). After this first series of movements, the Asp(ect)P(hrase) contains – in this order – the aspectual/modal markers (slot -2), the complex verb stem, the A and the O.

(143)   ...

            ...   AspP

        Asp⁰   ...

    Asp⁰   ... V⁰+   ...   VoiceP
         Voice⁰ ...   A

                     t_Voice⁰   VP

                          t_V⁰   O
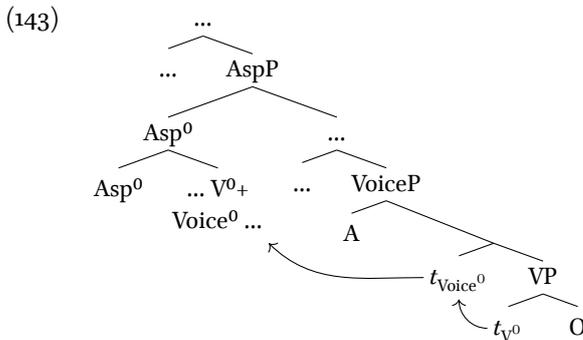
In both types of transitive constructions then, the O first moves out of the AspP (arrow ①). Only in AV (144b), the A moves out of the AspP too (arrow ①′). Afterwards, the whole AspP is moved to a position to the left of the post-verbal clitics (arrow ②); note that at this point, the AV AspP contains only the verb form itself, while the UV AspP contains the A argument as well, which is therefore brought to the left of the clitics. Finally, the voice-selected argument is attracted to the clause-initial position (arrow ③), resulting in the attested constituent orders. The final position of each element is boxed in the trees for clarity of exposition.

(144)   a. Undergoer voice: b. Actor voice:
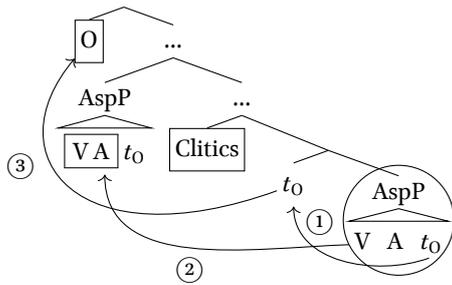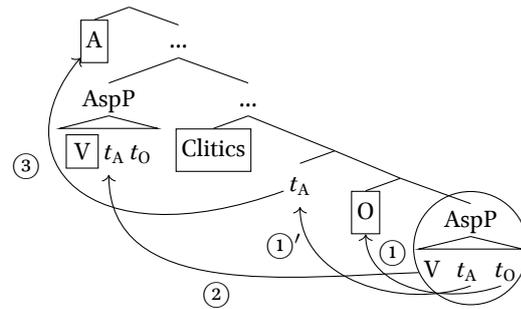
An analysis in which a verb phrase – or a larger constituent containing the VP – is fronted, possibly after the "escaping" of some elements from within it, has been proposed for verb-initial languages of the Austronesian family (see chapter 5 for references). What I add to this is the subsequent movement of the voice-selected argument to the clause-initial position.

Now, with an analysis such as this I do run into the risk mentioned in the first section of this chapter, i.e. postulating a complex series of movements that will make the structure "add up", without providing independent evidence for these movements. The point in developing a proposal (or a sketch thereof) such as this is not arguing that this is necessarily the way in which the Äiwoo clause is structured. However, I aim to demonstrate that – given the theoretical tools of this particular framework – (i) an analysis of the available data is technically possible, and (ii) this analysis respects what is usually argued regarding clause structure, (syntactic) ergativity, etc. (again, within minimalist syntax). However, even with this approach the circumstantial voice clitic *=Cä* remains unexplained as for its distribution and function; in section 5.4, I examine a series of possible analyses, and refute all of them on the basis of theory-internal considerations. Therefore, I do not have any good solution to the problems posed by *=Cä*, and I leave this open for further research.

4.4.4   PERSON MARKING

Chapter 6 contains first (section 6.1) a detailed description of the Äiwoo person marking system and a discussion of the person markers' morphosyntactic nature. What I argue is that Äiwoo shows a fairly common split between 1st/2nd person (including here 1st+2nd person) and 3rd person; the former are represented in the system by morphosyntactic clitics, not entirely dissimilar from e.g. Romance clitics, whereas 3rd person is represented by agreement markers. More precisely, I assume an approach to the category of person in which "3rd person" is actually no person at all, i.e. it is only represented as the lack of person features. Similarly, "singular" is nothing more than the lack of a [PLURAL] feature on a nominal (see chapter 6 for references and discussion). If one accepts this, then it follows that person prefixes/proclitics are split between slot -3 and slot -1, because the morphemes occurring in those slots are in fact of different nature, and it is therefore no surprise that they are placed differently. On one hand, slot -3 is the position of 1st/2nd person clitics. On the other hand, slot -1 contains *number* agreement, i.e. 3AUG *li-*: since there is no such feature as "3rd person", a 3AUG nominal will only carry the feature [PLURAL]. This is discussed in section 6.2.1, together with the nature of the unit-augmented suffix *-le*.

Essentially, I argue that *-le* shows the behaviour of a floating quantifier. It is generated together with the argument it modifies, and the subsequent movement operations (presented in the previous section) cause it to be stranded in situ, i.e. to the right of the verb form, to which it ends up being attached.

Section 6.3 takes up the question of the suffixes/enclitics used in non-actor voices (undergoer voice and circumstantial voice). I argue that the restrictions on their combinations follow a previously unrecognized direct/inverse split, based on the interweaving of a person hierarchy (where $2 \gg 1 \gg 3$) and a number hierarchy (where PL $\gg$ SG). If the A is more highly ranked than the O on these hierarchies, than it will be the only marked argument on the verb (the 'direct' construction); if, however, the A is low(er) on *both* hierarchies, another pattern (the 'inverse' one) will ensue. In other words, in order for the O to be marked, the A must be non-plural (including 12MIN 'you and me', cf. section 6.3 for a more precise discussion) and non-2nd person; the only possibilities left is that the A is 1MIN or 3MIN, i.e. exactly what is attested.

Finally, in section 6.4 I propose a formal implementation of this direct/inverse split based on the Cyclic Agree model (Béjar & Rezac 2009). Given this model, the person and number hierarchies are not needed as grammatical primitives, but their effects emerge as an epiphenomenon of (i) the nature of person/number features, i.e. how these are represented in the syntax, and (ii) how agreement works between the verb and its arguments. Summarizing my proposal, I argue that due to the interaction of factors (i) and (ii), the verb can end up agreeing with only the A argument (direct construction), only the O argument, or both at once (with both of these cases falling under the label of inverse construction).

Syntax of the Äiwoo clause

<div style="text-align:right; font-size:3em; color:gray;">5</div>

5.1 THEORETICAL BACKGROUND

5.1.1 THE RELATION BETWEEN MORPHOLOGY AND SYNTAX

Through this chapter and the next one, I apply the tools provided by the Minimalist framework (Chomsky 1995, 2000, 2001) and Distributed Morphology (Halle & Marantz 1993, Harley & Noyer 1999) to the verbal morphosyntax of Äiwoo, and I argue that (almost) all morphemes can be accounted for as for their distribution and behaviour without the need of stipulating linear templates. Moreover, I propose a sketch of a syntactic analysis of this language's clause structure, although a number of aspects still remain unclear and/or at a stipulative level. No previous work has been done on Äiwoo from a generative/minimalist perspective.

An important aspect of the theoretical model I adopt here concerns the division of labour between morphology and syntax, i.e. the building of "words" (assuming therefore that there are such things as "words", as independent entities that the grammar operates with and/or on) and the building of larger constituents (phrases, sentences: combinations of words). Traditional models consider morphology and syntax to be two separate modules of the grammar, or at least different processes following different rules and employing different operations, with possible distinctions as to whether non-syntactic operations happen in a separated morphological module or in the lexicon; see e.g. Anderson (1992), Chomsky (1995) for the latter view, a more strictly lexicalist one. A different stream of literature within the larger generative framework, however, operates with a looser distinction between morphology and syntax, or no distinction at all. This is the position argued for in i.a. Julien (2002, 2007; see references therein for earlier approaches which also abandon the distinction between the two): words and larger constituents are built by exactly the same processes (i.e. syntactic ones). The perspective that morphology is nothing else than syntax at the intra-word level, is also the one proposed by the Distributed Morphology framework (Halle & Marantz 1993, Harley & Noyer 1999, Harley 2011b). Although I do not attempt a full Distributed Morphology-based analysis of the Äiwoo verb, the proposals in this thesis are mostly compatible with this framework as well, and it is in fact crucial for my purposes to assume syntax to be active at the (descriptively) word-internal level.

From the point of view of the divide between layered and templatic morphology, if words (or the combinations of elements that surface as words) are built by syntactic operations, the prediction is then that morphology should follow a strictly layered/hierarchical structure (even if one still ought to allow the possibilities of extra-syntactic factors that might reorder the linear string at some later phases of the derivation, i.e. at the interface with phonology), since syntax by definition is built on hierarchical structures. As stated in chapter 1, the purpose of this thesis is to investigate to what degree a layered morphology approach is feasible to explain the verbal morphosyntax of Äiwoo. In order to do this, I adopt a theoretical model where words are built following the same processes as larger constituents, i.e. assuming there is no distinction between morphology and syntax. Through the course of this chapter and the next one, I will argue that in a minimalistic framework which follows the assumptions of Distributed Morphology, almost all morphemes occurring within the verbal domain in Äiwoo can be accounted for in terms of their distribution and behaviour, without the need of making stipulations about their linear order. The crucial exception is the circumstantial voice marker =*Cä*, which seems to eschew explanations based on hierarchical structures; this is presented in depth in section 5.4.

5.1.2   OTHER THEORETICAL ASSUMPTIONS

From a more syntax-technical point of view, I adopt the standard assumptions of the Minimalist framework regarding the main clausal spine of a clause, i.e. its being divided into the CP, TP and vP/VoiceP layers, thus following the "split VP" hypothesis (Larson 1988, Hale & Keyser 1993, Chomsky 1995, Kratzer 1996). A terminological note is in order about the projections labelled vP and VoiceP. In earlier works, such as the ones cited above, it was argued that there exists a projection above VP in the specifier of which the external argument is merged; this projection was alternatively labelled vP (Chomsky 1995) or VoiceP (Kratzer 1996). In the Distributed Morphology framework, works such as Harley (1995) and Marantz (1997) have proposed that vP is a verbalizing head, i.e. what is needed to transform a lexical root (in V) into a verb (parallelly to projections such as nP for nouns and aP for adjectives).

In more recent literature, however, the lower layer of the clausal spine (i.e. approximately vP and VP) has been "exploded" into a series of different functional projections, not differently from what has been proposed for the TP/IP and CP layers in e.g. the cartographic project (see i.a. Rizzi 1997, Cinque 1999, 2005, Cinque & Rizzi 2010, Rizzi & Cinque 2016; see especially the last work for an updated overview and comprehensive references). Pylkkänen (2002, 2008) and Harley (2013b, 2017) present arguments for the proposal that VoiceP and vP are in fact distinct, although they may be bundled in specific languages (with a series of morphosyntactic consequences). For the purposes of my thesis, I remain agnostic as to whether VoiceP and vP are bundled in Äiwoo or not. I will consistently notate the VoiceP projection above VP, and omit vP in between them, due to the fact that there seems not to be any overt morphological realization of the v^0 head; this should not be taken as a theoretically informed claim about the lack of a vP in Äiwoo (or its being bundled with VoiceP)[1].

On the matter of voice, the voice systems of Western Austronesian languages – such as the one present in Äiwoo, cf. chapter 3, section 3.2 – have been a debated matter in theoretical syntax, both minimalist and not (see e.g. Chen & McDonnell 2019 for an overview). Broadly speaking, the approaches proposed in the literature can be divided between *valency-changing* and *valency-neutral* ones. Valency-changing approaches argue that UV is the basic transitive construction, whereas AV corresponds to an antipassive (i.e. it is intransitive); languages with these types of voice systems are then argued to be syntactically ergative (e.g. Aldridge 2004, 2008). On the other hand, valency-neutral approaches argue that the differences between UV, AV and possible additional ones is not in terms of valency, and that "voice" is not to be interpreted as the same category as in more familiar Indoeuropean languages (i.e. alternation between active and passive). Within this family of analyses, some argue that voice morphology is a form of A′-agreement between the verb and the "pivot", i.e. the most prominent argument of a clause: if the most prominent argument is the agent, the verb will take AV morphology; if it is the patient, the verb will take UV morphology, etc. (see e.g. Rackowski & Richards 2005). With this approach, these languages are reduced to more familiar nominative/accusative systems, with the additional presence of morphology of the verb that "tracks" the pivot. Another group of analyses (e.g. Foley 2008, Riesberg 2014) are the ones describing the different voice constructions as entirely symmetrical to one another; cf. chapter 3, section 3.2 for a more in-depth exposition of this approach.

For the purposes of this thesis and its research question, it is not crucial to argue in depth for an implementation of either of these analyses. However, consistently with the description of the Äiwoo system in terms of symmetrical voice presented in chapter 3, I adopt a valency-neutral analysis such as the one proposed in Erlewine (2018) for Toba Batak (note that Erlewine's approach is based on the one argued for in Aldridge 2004, 2008; however, it does not follow the analysis of these languages as

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[1] In fact, an argument for the presence of vP could be made considering the fact that many kinds of roots – even clearly nominal ones such as 'cat' or 'woman' – can be combined with verbal morphology, and therefore function as predicates; this is common in Äiwoo, as it is in many Oceanic languages (van Lier 2017) (note that whereas word classes are taken – at least implicitly – to be universal categories in most generative literature, they are assumed to be language-specific categories in most functionalist/typological literature). If v^0 turns a lexical root into a verb, such as proposed in Distributed Morphology, it might then be that Äiwoo roots have less strict restrictions as to whether they can be combined with nP, vP, etc.

syntactically ergative, something I do not adopt either; cf. section 5.3.3 for details); despite this, I will outline how some aspects of Erlewine's approach are problematic for the Äiwoo patterns.

In section 5.2, I expose a proposal for modelling the stem area of the Äiwoo verb, i.e. the verb stem(s), the verb-internal morphology (valence- and voice-related), and the aspect and directional affixes; I argue that all morphemes within the stem area (apart from *-i/-nyii*, cf. section 5.2.4.3) are the realizations of syntactic heads, adjoined to each other via head movement. In section 5.3 I proceed to giving a sketch analysis of the clause structure, presenting the clausal spine I assume to be present and how the different constituents move (essentially a VP fronting analysis with subsequent fronting of the pivot argument), thus accounting for the varying position of the post-verbal clitics with respect to the arguments. Finally, section 5.4 is an investigation into the behaviour and the distribution of the circumstantial voice marker *=Cä*. I argue that its properties are not possible to model as following by syntactic and semantic principles alone; especially regarding its position, I argue that it is not possible to account for it without making ad hoc stipulations about the linear order of the string.

5.2   A GENERATIVE MODEL OF THE STEM AREA

5.2.1   BUILDING A SIMPLE STEM: HEAD MOVEMENT

In this section I propose an account for how simple verb forms such as the one in (145) are built syntactically. The term "stem" here refers to the bracketed part, cf. chapter 2.

(145)   *nuwo*   *i-[luwa-kä]*   *toponu*   (Rat and turtle 9)
        bottom   PFV-take.UV-DIR3   turtle
        'The turtle took the bottom part'

As for the hierarchically lowest part of the syntactic structure, the assumptions I make are entirely standard, as illustrated in (146). First, the lexical verb merges with the O argument first; the VP is then merged with Voice⁰, where the voice information is, and V⁰ head-moves into Voice⁰; then, the A is introduced in the specifier of VoiceP (cf. the previous section for a discussion of VoiceP and *v*P).

(146)
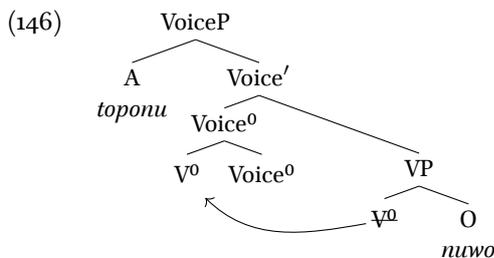
As for the directional suffix *-kä* 'DIR3' in (145), as described in chapter 3, section 3.5, these suffixes have their fixed place as the last (rightmost) element of a possibly complex verbal stem. Since they do not interact with the argument structure nor with the voice system, I model these suffixes as a syntactic head Dir⁰, above VoiceP, and I assume that that the complex Voice⁰ head moves into this Dir⁰ head. The exact nature of these suffixes is not crucial for the implementation, i.e. whether they are best described as light verb-like elements, bare VP-like elements, auxiliaries, or something completely different; the only desideratum of my analysis is that these suffixes be heads of projections along the clausal spine (cf. e.g. Cinque 1999, where morphemes of different natures – particles, auxiliaries, etc. – in different languages are analyzed as belonging to the same projections in the clausal spine).

One supporting argument for the analysis of the directional suffixes as a projection in the clausal spine come from their diachronic development. Recall from section 3.5 that they are etymologically related to directional verbs in other Oceanic languages. These suffixes' cognates in other languages are often used as independent predicates, such as Niuean *mai* 'give/go; towards the speaker' and *atu* 'give/go;

towards the hearer/third person' (Massam 2013: 63), as opposed to Äiwoo where they cannot occur on their own. In other words, what once was independent verb roots has been grammaticalized into suffixes, and lost therefore most of its structural independence.

The last morpheme in the verb form in (145) is the aspect prefix *i-* 'perfective', represented in the syntactic structure as the head of another projection (AspP) directly dominating DirP, to which the previously built complex head adjoins[2] (although the markers *nâ-* 'irrealis' and *de* 'apprehensive' are more modal than aspectual, since they are in paradigmatic alternation with the more clearly aspectual markers, I model them as belonging to AspP as well). All of this is illustrated in the tree in (147), where moved elements are shaded and striked out to improve insight into the head movement process and readability; through the rest of the chapter, when this grade of precision is not necessary, I will make use of the abbreviated notation in (147′). Note that the O argument *nuwo* 'bottom' appears here to be in the wrong position; how the different arguments end up in their linear positions will be dealt with in section 5.3.

(147)

[Syntax tree: AspP dominating Asp⁰ and DirP. Asp⁰ branches into Asp⁰ (*i-*) and Dir⁰. Dir⁰ branches into Voice⁰ and Dir⁰ (*-kä*). Voice⁰ branches into V⁰ (*luwa*) and Voice⁰ [UV]. DirP branches into Dir⁰ (struck out) and VoiceP. VoiceP branches into A (*toponu*) and Voice′. Voice′ contains struck-out V⁰, Voice⁰, Dir⁰ elements and VP. VP branches into struck-out V⁰, Voice⁰ and O (*nuwo*).]

(147′)

[Syntax tree: AspP dominating Asp⁰ and DirP. Asp⁰ branches into Asp⁰ (*i-*) and Dir⁰. Dir⁰ branches into Voice⁰ and Dir⁰ (*-kä*). Voice⁰ branches into V⁰ (*luwa*) and Voice⁰ [UV]. DirP branches into t_{Dir^0} and VoiceP. VoiceP branches into A (*toponu*) and Voice′. Voice′ branches into t_{Voice^0} and VP. VP branches into t_{V^0} and O (*nuwo*).]

5.2.2   BUILDING MORE COMPLEX STEMS: STILL HEAD MOVEMENT

Although relatively simple verb forms such as the one in (145) are common, verb forms in Äiwoo can often achieve considerable complexity, most of which is due to serial verb constructions and valency-changing morphemes, as presented in chapter 3; the large part of this complexity is therefore to be found

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[2] In this case Dir⁰ adjoins to the *right* of Asp⁰ instead of to its left. The legitimacy of this operation is discussed in section 5.2.3.4. Moreover, since Dir⁰ and Asp⁰ are linearized differently, it is difficult to determine the order in which they are merged. The hierarchical configuration AspP » DirP is used here as a working assumption, as it seems more plausible for the aspect marker to scope over the directional marker (i.e. that the complete semantic denotation of the whole verb form, including its direction, shares one single aspect) than the other way around. A different issue is that throughout this chapter, I will propose that the AspP moves phrasally (i.e. as a whole) to a higher projection; given this, it may seem as the head movement of Dir⁰ into Asp⁰ is superfluous, as the linear order would still be correct (i.e. with the aspectual/modal markers to the left of the stem). However, in chapter 6 I propose that there must be a φP – related to the person marking system – directly dominating AspP, to the head of which Asp⁰ adjoins, and it is in fact this φP that moves phrasally, as opposed to AspP: if Dir⁰ has not head-moved into Asp⁰, then the whole complex head cannot head-move to the left of φ⁰, resulting in the placement of the suffixed person markers. This will be presented in greater detail in chapter 6.

within the stem area. The verb form in (148) is a good illustration of the type of serial verb constructions that one very often finds in Äiwoo. Within the stem (bracketed), there are 3 verbal roots (*tu* 'bring.UV', *to* 'go in', *usi* 'back/again'); of these, the first one determines the main semantics of the whole verb form, while the latter ones modify it. Moreover, at the right edge there is a directional suffix (*-mä*). These four morphemes behave as one single verb stem, taking only one modal marker (*nâ-* 'irrealis') and one set of arguments, marked by the suffixes *-gu-i* 3MIN-3AUG (in the next chapter, I will propose an analysis of *-gu* as a marker of inverse alignment; for the purposes of this chapter, it suffices to treat it as a 3MIN marker, following the available literature about Äiwoo).

(148)   *nâ-[tu-to-usi-mä]-gu-i*   (Education 56)
        IRR-bring.UV-go.in-back-DIR1-3MIN-3AUG
        '(So that) he brings them back inside'

The complex verb form in (148) can be compared to the simpler one in (149). Here, the stem consists of only one morpheme (the verbal root *waato* 'excite.UV') as opposed to four; however, it still takes exactly the same amount of aspectu and argument marking as the complex form in (148) (recall that the aspect and modal markers, i.e. *nâ-* in (148) and *ku-* in (149), are in paradigmatic alternation).

(149)   *ku-[waato]-gu-i*   (Dancing leluwo 147)
        IPFV-excite.UV-3MIN-3AUG
        'It (the dance) excites them'

On the basis of both morphosyntactic and semantic arguments, I argue that complex forms such as the one in (148) are built in the syntax via head movement, in the exact same manner as simpler ones as the one in (145). All morphemes in the stem area will be modelled as the realization of a syntactic head (apart from the UV agreement suffix *-i/-nyi*, not shown here; cf. section 5.2.4.3 below). The verb form in (148) is broken down to show this in (150), where the corresponding syntactic heads are indicated in the third line; the numbers indicate the base-generation order of the verbal roots, so that V_1 is the most deeply embedded one, V_2 is the next one to be merged, etc. Note that what is represented here is only the surface linear order of the heads; their hierarchical configuration will be explained through the course of this section.

(150) Asp^0 $V_1{}^0$+$Voice^0$ $V_2{}^0$ $V_3{}^0$ Dir^0
        nâ-   [[[[*tu*   *to*]   *usi*]   *mä*]   *-gu*   *-i*
        IRR   bring.UV   go.in   back   DIR1   3MIN   3AUG
        '(So that) he brings them back inside'

As the bracketing in (150) indicates, I propose that the leftmost verb root *tu* 'bring.UV' is the hierarchically lowest one, i.e. the most embedded one in the tree. Both arguments in this sentence belong semantically to this leftmost verb: if *to* 'go in', *usi* 'back/again' and *-mä* 'DIR1' were absent, this would not change anything as for the argument structure. The same applies to the voice properties of the whole form, which are determined once again by the leftmost verb (see chapter 3, section 3.6); the person suffixes (*-gu-i* 3MIN-3AUG) clearly prove that this verb form is in UV.

Since the leftmost verb determines the argument structure and the voice properties of the whole form, I argue that the derivation starts with the merging of material up to this verb's VoiceP layer. Both arguments and the voice properties are now in place before any other morphemes are added; the lexical verb has head-moved into the $Voice^0$ head, as presented earlier. After the VoiceP is built, the additional verbal roots ($V_2{}^0$ and $V_3{}^0$) are merged on top of it as simple VPs, with no other functional layers above them[3]. The construction known from the typological/descriptive literature as "nuclear-layer verb serialization" (see chapter 3, section 3.6 for a discussion of this term) is thus modelled as the superimpos-

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[3] Whether the additional VPs are best modelled as merged above or below the VP is discussed in section 5.2.3.3.

ition of bare VPs, as opposed to larger constituents (e.g. VoicePs, or even AspPs or TPs)[4]. The Voice[0] head keeps moving into every subsequent head, thereby creating a progressively more and more complex head. After the second and the third additional verb roots, the DirP and the AspP are merged (as already noted in footnote 2, in the next chapter I propose that there is a φP projection directly dominating AspP, and that Asp[0] adjoins φ[0] through head movement; however, as it is not directly relevant to the discussion at this moment, I will omit these from the trees and the discussion throughout the rest of this chapter). The whole process is illustrated in the tree in (151).

(151)

$$
\begin{array}{c}
\text{AspP} \\
\text{Asp}^0 \quad \text{DirP} \\
\text{Asp}^0 \quad \text{Dir}^0 \quad t_{\text{Dir}^0} \quad \text{V}_3\text{P} \\
n\hat{a}\text{-} \quad \text{V}_3^0 \quad \text{Dir}^0 \quad t_{\text{V}_3^0} \quad \text{V}_2\text{P} \\
\text{V}_2^0 \quad \text{V}_3^0 \quad \text{-}m\ddot{a} \quad t_{\text{V}_2^0} \quad \text{VoiceP} \\
\text{Voice}^0 \quad \text{V}_2^0 \quad usi \quad \text{A} \quad \text{Voice}' \\
\text{V}_1^0 \quad \text{Voice}^0 \quad to \quad t_{\text{Voice}^0} \quad \text{V}_1\text{P} \\
tu \quad [\text{UV}] \quad t_{\text{V}_1^0} \quad \text{O}
\end{array}
$$
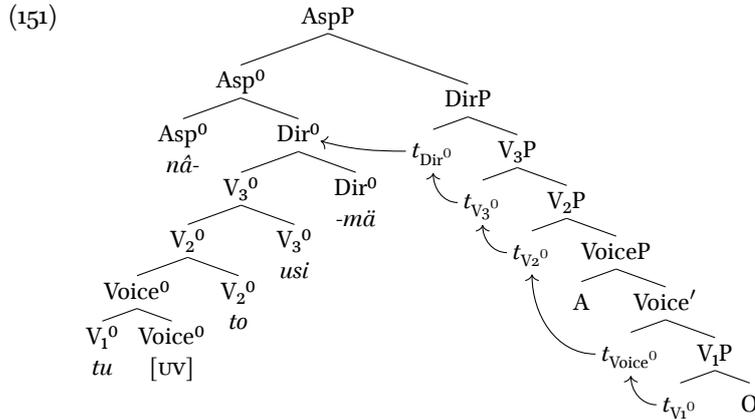
Although I will not present this in depth, this approach also correctly predicts the distribution of the floating quantifier *dä* 'some', which can be cliticized to the right of the verb form, as shown in (152), repeated from (42a) (see chapter 2, section 2.3.1).

(152)   *kele   nunugo-ee   i-viteia-eopu-mu=**dä***   (Gardening 349)
         here   tobacco-DEM.PROX   PFV-sell.UV-also-2MIN=**some**
         'This tobacco, do you sell some of that too?'

If *dä* quantifies e.g. the O argument, then it is generated in the same position (complement to VP). After the head movement process described here, the O will move out of the AspP (see section 5.3 for details); then, *dä* can be stranded in situ, which is exactly its attested surface position (if there is an overt A DP, this would be to the left of *dä*, as correctly predicted).

A comparable analysis to the head-movement-based one presented here has been proposed for complex predicates (Massam 2013) and the general clause structure of Niuean (Massam 2010). Also in Niuean, the elements further to the left are also the ones to be more embedded in the structural hierarchy. However, in Massam's model the verb undergoes phrasal (roll-up) movement instead of head-movement. This is motivated by the VSO word order of Niuean, as opposed to the verb-medial (AVO/OVA) order of Äiwoo. More arguments against modelling the Äiwoo stem with phrasal movement are presented in the next section, where I examine three main diagnostics for head movement discussed in Harley (2013a,c), and I argue that all three support my claim that verb stems in Äiwoo are built via head movement as opposed to phrasal movement. Harley discusses these three diagnostics as "symptoms", or "empirical clues", that may bring a linguist to explain a given phenomenon through head movement. Note, however, that I do not claim head-movement to be the only movement type present in Äiwoo: I do in fact use phrasal movement to model the clause structure above the stem and the position of full arguments, as presented in section 5.3.

---

[4] This is a formal implementation of the most common type of verb serialization in Äiwoo, i.e. the head-modifier one. In chapter 3 I present the so-called complex-event construction, where the voice/valence properties of the whole form are determined by the rightmost stem instead of the leftmost one. I do not propose a formal model of the latter construction.

5.2.3 Why head movement (and why phrasal movement does not work)

5.2.3.1 Affixation

The first of these three symptoms is affixation, something that Äiwoo verb forms (can) show in fairly extensive amounts. The addition of an affix to a root is often modelled with the lower head containing the root undergoing head movement to a higher head, containing the affix. An example of this is the standard treatment of tense and person/number inflection on verbs in e.g. French, with V^0 moving to T^0 (Pollock 1989). This correlation between head movement and affixation was also exploited in Baker (1985, 1988) to formulate the Mirror Principle. In these highly influential works, head movement is treated as a tool to build words in the syntax. Two assumptions are (i) that syntactic structures reflect semantic scope relations (i.e. if XP has scope over YP, XP c-commands YP), and (ii) morphological affixation is modelled as the adjoining of lower heads to higher heads via head movement. Given this, in addition to the fairly strict constraints on head movement (its local nature and the ban of excorporation from complex heads), the Mirror Principle explains and predicts what is a possible affix order and what is not. Therefore, Baker concludes that the morphological structure of complex words will mirror the syntactic derivation.

However, as Harley (2013a,c) points out herself, affixation cannot be taken as conclusive evidence neither for nor against head movement. For example, heads can adjoin to empty heads, so that one has head movement but no (visible) affixation. On the other hand, one can have affixation without head movement: in head-final languages, a word consisting of the morphemes α-β could in principle be modelled without head-movement (153a), although for theory-internal reasons a string-vacuous head-movement is assumed, as in (153b).

(153) a.

b.
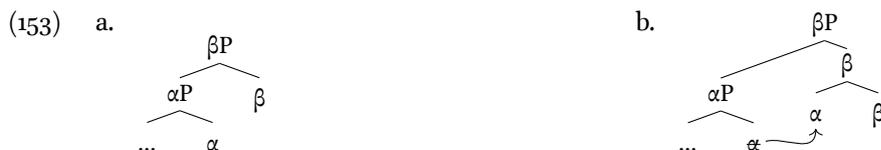
5.2.3.2 Absence of semantic interpretive effects

Another property that has been claimed to be typical of head movement is that it does not have any interpretive effects; in other words, moving a head to a higher position does not result in any change in the semantic (scopal) relationship between the involved elements[5]. At this point, it is in order to make clear that all available evidence points to Äiwoo being a head-initial language: the constituent order is verb medial (AVO/OVA), it has prepositions, and relative clauses follow their antecedent.

However, consider the verb form in (154a), where *päko* 'good' has scope over *lotâlâ* 'prepare.AV'. Therefore, in the syntactic structure *päko* must c-command *lotâlâ*. Given the head-initial character of Äiwoo, the scope relationship is then the opposite of the linear sequence: *lotâlâ* precedes *päko*, instead of following it (this phenomenon has been called "inverse order", e.g. in Massam 2010). One possible solution for this, which I will ultimately reject, would be that (at least some) VP structures in Äiwoo are head-final, as sketched in (154b).

(154) a. *ki-li-*[[*lotâlâ*]-*päko*]=*kâ*
          IPFV-3AUG-prepare.AV-good=DEIC.DIST
          'They prepared (it) properly'
          (Fermenting breadfruit 72)

b.

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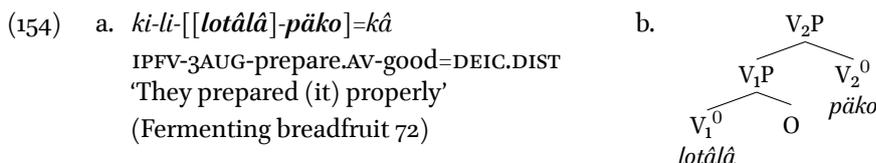
[5] Counterexamples to this, where head movement does in fact seem to have interpretive effects, are discussed in e.g. Lechner (2006) and Roberts (2010); see also Harley (2013a,c) and references therein. This goes against the traditional conception in e.g. Chomsky (1995, 2000), where head movement is essentially a phonological operation (i.e. at PF).

However, in all other respects Äiwoo seems to be a consistently head-initial language. For example, it has prepositions and verb-medial word order (as indicated in (154b) by the lowest VP being head-initial; note that an overt O in a sentence like (154a) would be to the right of the verb, not to its left). A structure such as the one in (154b) would constitute a violation of the so-called Final-Over-Final Condition (FOFC; see e.g. Sheehan et al. 2017), a postulated syntactic universal – or at least a very strong tendency – that prohibits head-final phrases to directly dominate head-initial ones, i.e. exactly the configuration in (154b). With semantically vacuous head movement, on the other hand, one can keep assuming a consistently head-initial structure, and the problem is solved (155): *lotâlâ* adjoins to the left of the higher head (*päko*), and the semantic relation between them stays the same, i.e. with *päko* scoping over *lotâlâ*; finally, the O will still surface to the right of the whole form.

(155)

$$
\begin{array}{c}
V_2P \\
\overbrace{\qquad\qquad\qquad} \\
V_2{}^0 \qquad\qquad V_1P \\
\overbrace{\qquad} \qquad\qquad \overbrace{\qquad} \\
V_1{}^0 \quad V_2{}^0 \qquad t_{V_1{}^0} \quad O \\
\textit{lotâlâ} \quad \textit{päko}
\end{array}
$$
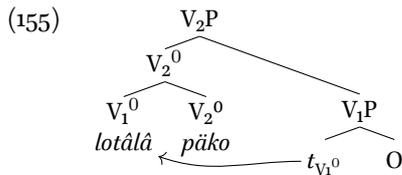
5.2.3.3   THE POSITION OF THE ARGUMENTS

Finally, as is the case with all (overt) movement, a symptom of head movement is that the linear order of elements does not correspond entirely to what could be expected from the hierarchical structure: quite trivially, some element has moved around. In addition to the semantic scope arguments presented above, another piece of evidence supporting a head movement analysis for the Äiwoo stem is the position of the arguments.

Consider the sentence in (156), which shows the standard position of overt DPs in an UV clause; in the first line, I have annotated coarsely the syntactic position of the relevant constituents[6]. The linear order O-$V_1{}^0$-$V_2{}^0$-A is clearly different from the base-generated one ([$V_2{}^0$ [A [$V_1{}^0$ [O]]]]).

(156)

O	$V_1{}^0$	$V_2{}^0$	A
[*nuwopa to-ngopu=wâ*]	*i*-[*vetängä*]-*ive*-[*wâgulâ-i*]		[*nyengi*]=*to*
house POSS:LOC-1AUG=DEIC.DIST	PFV-damage-APPL-completely-UV.AGR		wind=CS
'Our houses were completely destroyed by the wind'			(Däive 33/34)

If the verb stem where to be built by phrasal/roll-up movement, one would risk "dragging the arguments along" to the wrong position. First, the O might end up adjacent to $V_1{}^0$, as it is merged in its complement. The A argument's position in the linear string is not trivial to achieve either by only phrasal movement: moving the whole VoiceP would bring the A to the left of $V_2{}^0$, instead of stranding it to its right.

To avoid this, one would have to postulate a highly complex series of cyclical movements of the arguments outside of the phrasal movement domain before the movement itself would happen: the O would have to move out of the lowest VP before this moves to an outer specifier of VoiceP; then both arguments would have to move to additional outer specifiers of VoiceP before the VoiceP itself (now containing only the V_1P, and no arguments) can move to a specifier of V_2P, etc. (cf. an explicit tree representation of a similar approach in (161a) below; anti-locality constraints could also constitute a problem for this approach, cf. e.g. Abels & Neeleman 2012). This would complicate the model considerably, and make it much less economical than one in which the verb moves by head movement, thereby simply leaving the arguments in situ (the details of how pronominal arguments are marked on the verb are explored in more detail in chapter 6).

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[6] The verb in this sentence carries an applicative suffix, and the O argument is actually base-generated in a different position than Os of regular underived transitive verbs, as presented in section 5.2.4.2 below. However, as far as I can see the argument being made here still holds; if anything, the addition of the Applicative phrase would only complicate the matter even more, bringing the surface linear order further away from the base-generated one.

A different possible attempt at saving the phrasal movement approach would be to assume that the additional VPs are not added above VoiceP, but directly above V_1P, i.e. below VoiceP. In this way, the A argument would be introduced above the phrasal movement domain, thereby avoiding the risk of surfacing in the wrong place (i.e. close to V_1P, instead of at the right edge). Determining whether the modifying VPs are merged below or above the VoiceP is not a too different question from that of determining whether in a sentence such as *John walks slowly*, the adverb *slowly* is merged above or below the vP[7]. However, even merging the modifying VPs below the VoiceP in Äiwoo would only be a partial solution to the problem, since the O argument would still be "trapped" in V_1P, and therefore it would have to escape the phrasal movement domain cyclically. In fact, it could not be the case that the O moves first to the specifier of V_1P and V_1P moves together as a whole, in a roll-up fashion: if this were the case, the O would be within a movement constituent, and could then not move to the left of Asp^0 due to the ban on subextraction (cf. e.g. the "Specifier Condition" in Ormazabal et al. 1994, or the "Activity Condition" in Chomsky 2000; see also Gallego 2010 for an overview), as shown in (157). Due to these reasons, I argue that modelling the Äiwoo stem with head movement is more economical, and therefore a preferable analysis in terms of the principle of the Occam's razor.

(157)
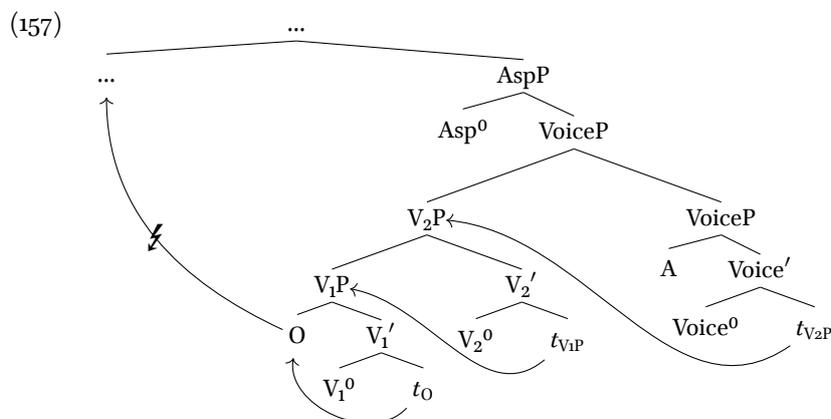
Yet another example of how uneconomical a phrasal movement analysis of the Äiwoo stem would be is provided by the behaviour and position of the causative prefix *wâ-*. Example (158) summarizes the main pattern illustrated in more depth in chapter 3, sections 3.3.2-3.4.1: adding the causative prefix *wâ-* to an intransitive verb derives a transitive verb in AV. In order to turn this to UV, the suffix *-eâ/-wâ* is added[8].

(158)   *nubo* 'die'
    wâ-nubo CAUS-die 'kill.AV'
    wâ-nubo-wâ CAUS-die-UV 'kill.UV'

In analyzing forms like these, a reasonable assumption to make is that the prefix *wâ-* is the realization of a $Caus^0$ head, while the suffix *-eâ/-wâ* is the realization of the $Voice^0$ head. If this is the case, and following the standard assumption that A arguments are base-generated in specVoiceP, then a clause containing the verb *wânubowâ* 'kill.UV' and an overt A DP will look like (159).

(159)	$Caus^0$	V^0	$Voice^0$	A (specVoiceP)			(Nupo eä nubââ 74)
	ku-	*wâ-*	*nubo*	*-wâ*	[*ilâ*	*nää*	*nogo=nâ*]
	IPFV-	CAUS-	die	-UV	that	spirit	POSS:UTEN.3MIN=DEIC.DIST
	'His spirit will kill [them]'						

---

[7] For the purposes of this thesis it is not necessary to provide a definitive answer to this question; I take here the working assumption that the modifying VPs are merged above the VoiceP, without too much impinging on this.

[8] This suffix has 4 allomorphs: *-eâ, -â, -nâ* and *-wâ*, shown in (158); the latter is only coincidentally similar to the causative prefix *wâ-*. See chapter 3, section 3.4.1 for more details.

The attested linear order of these morphemes is not trivial to achieve through pharasal movement. At first sight, it seems as if the CausP would have to move to somewhere *in between* Voice^0 and VoiceP, as in (160). Later, this group of elements (which is less than a phrase, but more than a head) would have to move to the left of the A argument, i.e. above specVoiceP.

(160)

...
... VoiceP
A ? Voice$'$
Voice^0 -wâ
CausP
Caus^0 wâ- VP
nubo O
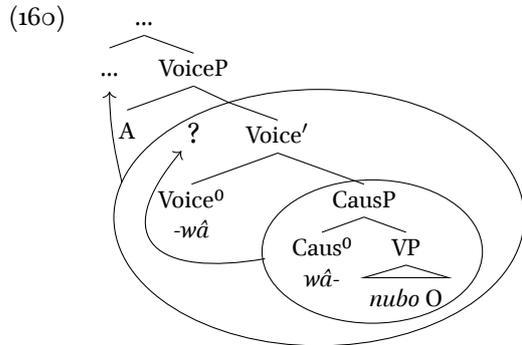
Note that the position of the O argument would constitute a problem in this model as well, since it would surface close to the verb root. As presented above for the case of (156), a possible solution to this problem might be to postulate an articulated series of cyclical movements of both arguments out of the phrasal movement domain to outer specifiers of the same projection; an illustration of this approach is presented in (161a). A model like this is clearly considerably more complex and less economical than one in which the verb head moves first into the Caus^0 head and then into the Voice^0, leaving the arguments in situ, as sketched in (161b); note that the Voice^0 is independently assumed to adjoin to higher heads (Dir^0 or Asp^0) later in the derivation (see section 5.2.1), so that it will surface to the left of the A.

(161) a. Alternative analysis 1: phrasal movement   b. Alternative analysis 2: head movement

a.
VoiceP
VoiceP — *wâ-nubo-wâ*
VoiceP
A VoiceP
O VoiceP
CausP — *wâ-nubo*
A Voice$'$
Voice^0 -wâ
CausP
O
CausP
Caus^0 wâ- VP
V^0 O
nubo

b.
AspP
Asp^0 VoiceP
Asp^0 ku- Voice^0 ←
Caus^0 Voice^0 -wâ
Caus^0 V^0 wâ- *nubo*
A Voice$'$
t_{Voice^0} CausP
t_{Caus^0} VP
t_{V^0} O
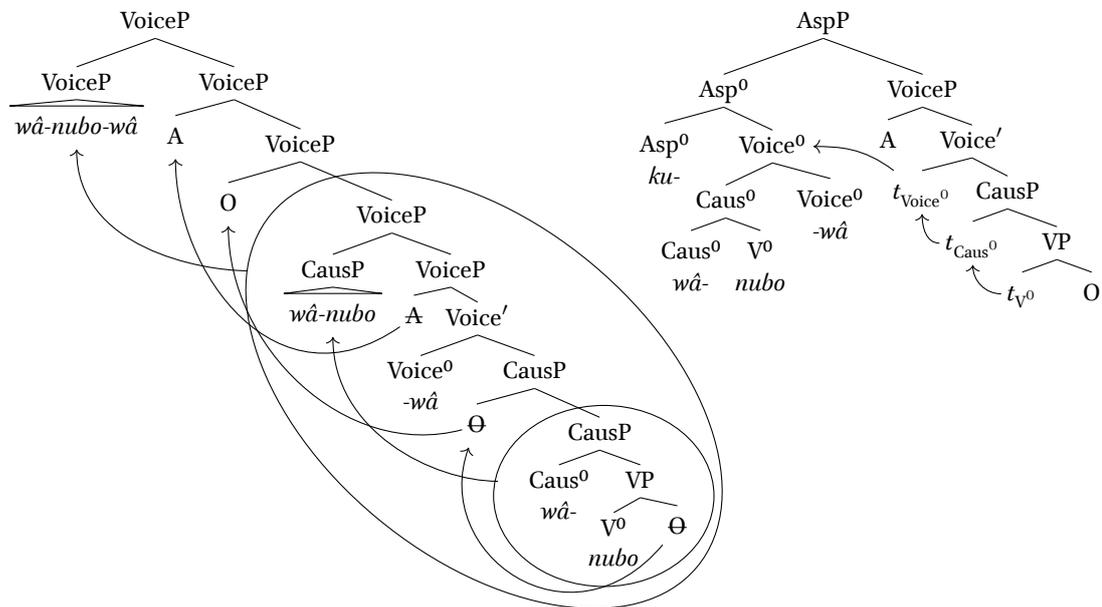
5.2.3.4 A LESS RESTRICTIVE THEORY OF HEAD MOVEMENT

One theoretical drawback of modelling the Äiwoo stem with head movement is that the operation of head movement itself must be modelled with a slightly larger degree of freedom then usual. In a strictly Antisymmetric framework (Kayne 1994), a lower head H^0 must adjoin to the left of a higher head I^0, as in (162a). This is also what is found in Baker's (1985, 1988) original formulation of the Mirror Principle: head adjunction to the right, as in (162b), is not possible.

(162) a. Head adjunction to the left:
          possible
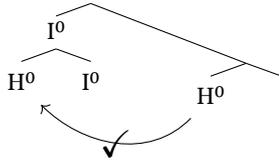
b. Head adjunction to the right:
   impossible
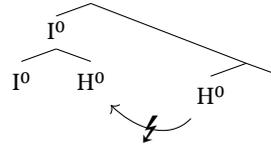
Given that the higher head contains an affix, the impossibility of configurations such as (162b) effectively rules out any chance of modelling prefixing structures via head movement, even those structures where the order of the involved elements might respect the Mirror Principle. However, the configuration in (162b) can be permitted in a less strict framework such as Distributed Morphology, where the linearization of heads is parametrized (Harley 2011a, 2013c). Harley, in fact, suggests that affixes have their linearization specified individually: in other words, every affix (or every category of affixes, cf. Harley 2013c: fn. 9) that undergoes head movement will determine itself whether it will attach to the right or to the left of its host. She notes also that, even though this approach to head movement is less strict and predicts more possibilities than Kayne's (1994), it still excludes a series of logically possible orders, e.g. those in which the Asp^0 head is between V^0 and Voice/v^0 (given the series of functional projections TP > AspP > VoiceP/vP > VP)[9].

Applying this model of head movement to the Äiwoo data, this would mean that the causative morpheme *wâ-* is linearized to the left of its host, i.e. it surfaces as a prefix (cf. the tree in (161b)); the other series of morphemes with the same behaviour is the family of aspect markers (cf. the trees in (147) and (151)), which surface as prefixes as well.

5.2.4 Other morphology within the stem

5.2.4.1 Causative *wâ-* (and undergoer voice *-eâ*)

As already introduced, I model the causative prefix *wâ-* as the realization of a $Caus^0$ head, above (the deepest embedded) VP and below VoiceP; the V^0 head adjoins the $Caus^0$ head via head-movement, then the $Caus^0$ head-moves into $Voice^0$ (I remain agnostic as to whether this CausP is actually vP or distinct from it; cf. Harley 2017 for a review of both positions). As exposed in the previous section, the $Caus^0$ head must be specified to linearize to the *left* (as part of the complex head $Caus^0+V^0$) in order to surface as a prefix as opposed to a suffix. This is illustrated for the form *wâ-nubo-wâ* CAUS-die-UV 'kill.UV' in (161b), repeated here (simplified) as (163).

(163)
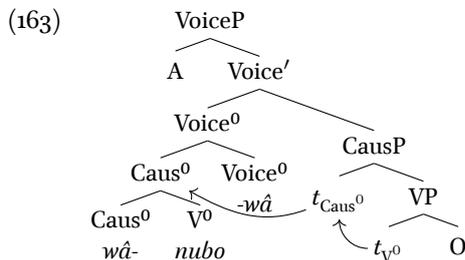
I follow here Harley (2013b) in assuming that the causative head does not introduce the A argument itself, but only its own causation-related semantics; the A argument is introduced in specVoiceP, as usual. Additionally, I model the UV marker *-eâ* (or *-wâ/-nâ*; for more details about the allomorphy, see chapter

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[9] An antisymmetric proposal that still predicts the behaviour of prefixes is Julien (2002, 2007). However, due to simplicity of exposition I adopt Harley's (2013c) approach.

3, section 3.3.2) as the realization of the Voice⁰ head when it has a CausP as its complement; this could for example be modelled in Distributed Morphology in the forms of context-dependent spell-out rules (Harley & Noyer 1999: 4–5). In doing this I abstract away from the unclear cases and exceptions in the use of *-eâ*, described in chapter 3, section 3.3.2.

An exceptional pattern I do not propose an explicit formal analysis of is the behaviour of the causative prefix in combination with the four directional verbs *to, lâ, ee, woli* 'go in, out, up, down', as described in chapter 3, section 3.4.1, from which the following examples are repeated. When exactly these four verbs are causativized, the 3AUG prefix *li-* can be inserted between the causative and the verb stem if the O argument (of the whole complex form) is plural. The derivational process is informally illustrated in (164): first, *li-* 3AUG is prefixed to *to* 'go in'; then, the whole inflected form is causativized, rendering *to*'s S argument into the O argument of the newly formed transitive verb.

(164) a. *li-to* 3AUG-go.in 'they go in'

   b. *wâ-li-to* CAUS-3AUG-go.in 'make them go in', i.e. 'put in' for a plural O

The sequence CAUS-3AUG-STEM is only attested with these four directional verbs; in all other cases, *li-* (*lu-* is a phonological variant) always indexes the A argument of the causativized form, and is found to the left of the causative, as in (165)[10,11]. Compare (165) to (166), where *li-* refers to the O argument. Note also that if both the A and the O are plural, there can be two *li-* prefixes, such as in (167) (*nâbo* is a preparation of dried breadfruit; in these case, the plural reading arises because it is pieces of *nâbo* that are being moved). In these examples I have included 'A' and 'O' in the gloss of *li-* (according to which argument's features it indexes) for clarity of exposition; I do not intend to imply that *li-* '3AUG.A' and *li-* '3AUG.O' are two different morphemes.

(165) *ku-**lu**-pwâ-nubo=to*   sii   *ngämi=nâ*   (Fishing cairn 56)
   IPFV-**3AUG.A**-CAUS-die=CS fish   there=DEIC.DIST
   'They kill fish in there'

(166) ***wâ-li**-to-no*   *ngä*   *täpilo*   (Fishing for food 114)
   CAUS-3AUG.O-go.in-1MIN LOC.PREP bowl
   'I put them in a bowl'

(167) *nâbo*   *lâ*   ***lu**-pwâ-**li**-to*   *ngämi=nâ*   (Nyiveina benuwää 150)
   dried.breadfruit DEIC.DIST **3AUG.A-CAUS-3AUG.O**-go.in   there=DEIC.DIST
   'They put the *nâbo* (pieces) into it'

In order to model this behaviour, one would have to assume an agreement relation (for number) between the V⁰ and the O argument, matching an unvalued/uninterpretable number feature on the verb head with a [PL] feature on the O; crucially, this unvalued number feature could only be present on the four lexical items *to, lâ, ee, woli*, and not e.g. on *nubo* 'die', as shown in (165). This would not be the only anomaly shown by these four verbs: they are also the only ones that do not take the UV agreement suffix *-i/-nyi* when serialized to other UV stems, cf. section 5.2.4.3 below.

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[10] Some morphophonological notes are in order about these forms. The prefix *li-/lu-* always triggers a /p/-initial form of all following morphemes that begin with /v/ or /w/. Finally, /p/ and /b/ alternate with the labialized variants /pw/ and /bw/. See chapter 1, section 1.5.3 for more details.

[11] In (165), one could argue that the O argument is not (properly) plural, as it may be considered uncountable. If the O is not plural, then it is not surprising that there is no plural agreement with it such as in (167). However, even clearly plural Os are not cross-referenced by *li-* on causativized verbs other than the four directional ones, as can be seen in (i), where the O is marked by the collective prefix *pe-*, rendering clear the plural reading.

   (i) *me-wâ-ngâbo-ee*   *pe-dowâlili* *ngä*   *nyä-nenu*   (Basket weaving 11/12)
      1AUG-CAUS-climb-go.up   COLL-child   LOC.PREP tree-coconut
      'We get some kids to climb up into a coconut tree'

5.2.4.2   APPLICATIVES *-ive/-i*

The second group of morphemes occurring within the stem comprises the general applicative *-ive* and the comitative applicative *-i*. Apart from the more specific semantics of the latter, their syntactical behaviour is entirely the same; I choose therefore to treat them together. The examples in (168)-(169), repeated from chapter 3, section 3.4.2, illustrate the syntax of *-ive*: in the former sentence, the verb *lopâ* 'talk' is intransitive, as shown by the presence of the person prefix/proclitic *mi-* 2MIN and the fact that the following argument is a PP, i.e. an oblique; in the latter sentence, on the contrary, *-ive* transforms *lopâ* into an UV verb, as can be seen by the presence of the person suffix/enclitic *-no* 1MIN and the fact that the O argument ('the story about the flying fox and the parrot') is not marked by anything[12]. For more details about *-ive* (and the comitative applicative *-i*), see chapter 3, sections 3.4.2-3.4.3.

(168)   **mi**-*ki-lopâ-kä=naa*   [*ngä   bäli   ngä   nenelu*]_OBL PP   (Dancing leluwo 3)
        2MIN-IPFV-talk-DIR3=FUT   LOC.PREP side LOC.PREP dance
        'You are going to talk about the topic of dance'

(169)   *kâ-no=ngä   nâ-lopâ-**ive**-wâ-no=nge*   [*naae wä tepekâ   mo   vili*]_O
        want-1MIN=CV   IRR-talk-**APPL**-DIR2-1MIN=DEIC.PROX story of   flying.fox and parrot
        'I want to tell you the story about the flying fox and the parrot'   (Flying Fox 1)

I assume both *-ive* APPL and *-i* COM to be the realization of a High Applicative head (in Pylkkänen's 2002, 2008 classification), above VP and below VoiceP – like the causative prefix *wâ-*, treated in the previous section. As with the causative, I assume that the V⁰ head adjoins the Appl⁰ via head movement, and this in turn head-moves into the Voice⁰ above it. This process is shown in (170).

(170)
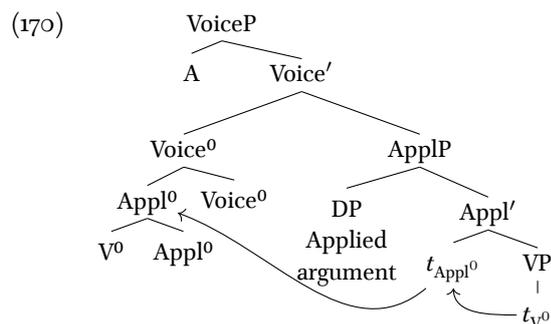
There are a small number of differences between these ApplPs and CausP. First, the applicatives surface as suffixes to the verb stem, instead of as prefixes; this implies that the Appl⁰ must be linearized to the right, instead of to the left. Second, the Appl⁰ head introduces its own argument in its specifier as opposed to CausP, that does not (again, this follows Harley 2013b). Third, whereas the causative prefix *wâ-* can derive transitive verbs in both AV and UV (marked respectively by the absence and the presence of the suffix *-eâ*), the applicative suffixes constitently derive UV verbs, with no attested exception. If the voice distinction is represented in the syntax by two different "flavours" of VoiceP, as in Erlewine (2018) (see section 5.3.3 below), then this restriction on the applicative might be modelled by saying that only Voice_UV⁰ can co-select ApplP, whereas Voice_AV⁰ cannot.

5.2.4.3   UV AGREEMENT *-i/-nyii*

Finally, the last stem-internal morpheme I offer a syntactic modelling of is *-i/-nyii*, described in chapter 3, section 3.3.1 as marking 'UV agreement' (*-i* and *-nyii* are two allomorphs, the distribution of which

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[12] Although the standard constituent order in UV is OVA, this sentence shows VO order; in the Äiwoo corpus there seem to be effects similar to heavy NP shift (Ross 1967), and this might be one of those cases. Moreover, the clause-final position in Äiwoo is used for argument focus (Åshild Næss, p.c.), and this could be another likely explanation for the position of this DP.

seems to be lexically determined, i.e. most verb stems take *-i* and some take *-nyii*, without any other apparent governing factor); all the examples below are elaborated from that section. This morpheme is suffixed to intransitive verb stems when these are serialized to UV stems, as shown in (171). Moreover, the suffixation of *-i/-nyii* is recursive, attaching to every following stem (172).

(171) *bäli   enge=ke   i-kää-päko-i-no*   (Fermenting nâbo 1)
       side   DEM.PROX=DEIC.PROX   PFV-know.UV-good-UV.AGR-1MIN
       'I know this topic very well'

(172) *i-kää-päko-i-mana-i-no*   (Nylieteina 395)
       PFV-know.UV-good-UV.AGR-very-UV.AGR-1MIN
       'I know it very well'

In section 5.2.2 I have modelled serial verb constructions – i.e. the use of several verb roots at once with only one set of aspect and person marking – as the layering of additional bare VPs above a VoiceP, belonging to the most embedded verb (the linearly leftmost one). Given this, one can assume that the [UV] feature of an UV VoiceP spreads upward to the modifying VPs, and that it is spelled out on every single one of them as *-i* or *-nyii*, as showed in the tree in (173); clearly, if serial verb constructions were modelled with the hierarchy VoiceP » V_3P » V_2P » V_1P, this Voice feature would have to spread downward instead.

(173)
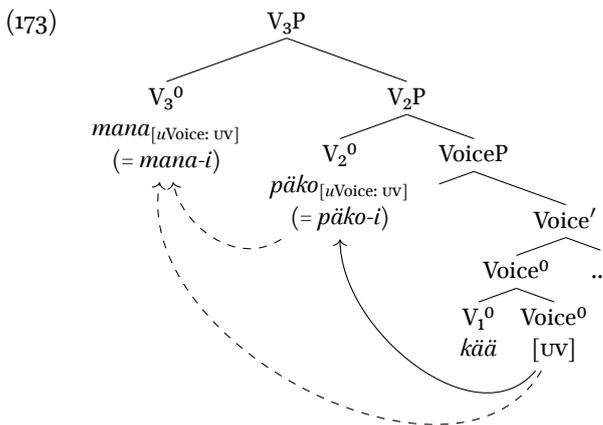
One possibility to model the spreading of this [UV] feature is to assume that all verbal roots (apart from the four directional verbs presented in section 5.2.4.1 above, which are never suffixed with *-i/-nyii*) carry an unvalued [*u*Voice: __] feature, and act therefore as probes. The third merged stem, in this case *mana* 'very', may get its [UV] feature either from V_2^0 or directy from Voice^0 (represented by dashed arrows in the tree) depending on the theoretical model of features one assumes.

5.3 CLAUSE STRUCTURE

5.3.1 SKETCH OF THE PROPOSAL

The model I propose for the Äiwoo clause is essentially an extension of a VP-fronting analysis, already proposed for other Oceanic languages (especially Polynesian ones, that tend to be verb-initial); cf. for example Massam (2000, 2001, 2005, 2010, 2013) for Niuean, Collins (2017) for Samoan, van Urk (2019b) for Fijian and references contained in the two latter works; see also van Urk (2019a) for a VP-fronting analysis in Imere, a Polynesian language with verb-medial (SVO) order.

After the stem has been built through head movement, creating a complex head in Asp^0, the whole AspP (instead of just the VP) is fronted. The main piece of evidence for this is the asymmetrical position

of the non-pivot argument with respect to the post-verbal clitics. In UV, the A surfaces to the left of the clitics (174a), i.e. immediately adjacent to the verb; in AV, on the contrary, the O argument surfaces to their *right* (174b).

(174) a. Undergoer voice: b. Actor voice:
          O V A=CL   A V=CL O

In order to model these orders, I argue that the O argument first moves out of the AspP; in AV, in addition, the A argument moves too, ending up above the O. After these movements, I argue that the whole AspP undergoes phrasal (remnant) movement to the front of the clause; this is the part of the analysis similar to the VP-fronting one. The "escape" of an argument from the phrasal movement domain and the successive remnant movement of the predicate phrase is an ingredient of several similar analyses, e.g. Massam (2010) for Niuean. To result in the correct verb-medial order (AVO/OVA), I assume that after the movement of AspP, the voice-selected argument (i.e. the A in AV and the O in UV; each of these is by now the structurally highest argument) is attracted to a higher position to the left of the AspP. These processes are illustrated for UV and AV respectively in (175a,b). Note that these derivation apply only to nominal arguments (i.e. full DPs); pronominal arguments behave differently (see chapter 6). Through the next sections, I present more in depth the composition of the clausal spine in Äiwoo and the derivations of transitive sentences in AV and UV.

(175) a. Undergoer voice: b. Actor voice:
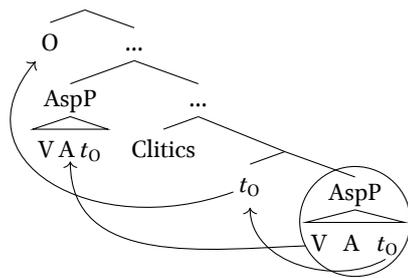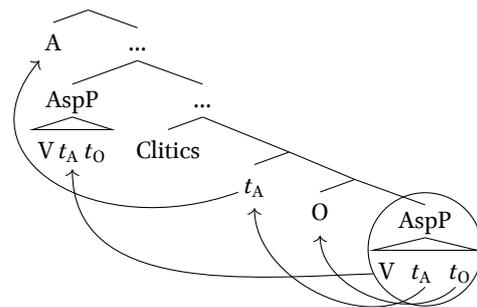
5.3.2 The clausal spine

After having discussed in section 5.2 the series of projections from VP to AspP, I proceed with discussing the area above AspP. I assume that the clausal spine includes the projections shown in (176), the upper portion of which I will comment on through the rest of this section (in (176), αP » βP is to be read as "αP dominates βP").

(176) TopP » TP » [PhaseAspP » NegP » FutP » DeicP]$_{\text{CliticP}}$ » FP » AspP » DirP » VoiceP » VP

The uppermost projection, TopP, is the one in whose specifier the voice-selected argument is attracted (i.e. the A of AV clauses and the O of UV clauses). The label 'Top(ic)P' may be misleading, as the voice-selected in Äiwoo does not necessarily need to have topic status in the sense of e.g. Lambrecht (1994) (for whom a sentence's topic is "the thing which the proposition expressed is ABOUT"; Lambrecht 1994: 118, emphasis in the original). However, the choice of AV vs UV is clearly based on pragmatics and discourse-related factors; functionally speaking, the voice morphology is used to "highlight" the most salient or prominent argument of the clause (see Næss 2015b for a detailed discussion). Since pragmatics is an important factor conditioning the usage of the different voice constructions, it seems therefore reasonable that the voice-selected argument is attracted (syntactically) to a high position, perhaps somewhat related to the left periphery, commonly associated with pragmatic and discourse-related functions (see e.g. Rizzi & Bocci 2017). The label 'TopP' may not be the most suitable or descriptively correct one, but I will adopt it for the sake of simplicity, as an in-depth investigation of the pragmatic and information-structural properties of the voice-selected arguments in Äiwoo are outside of the scope of this thesis.

Under TopP, TP is the projection standardly assumed to be related to marking tense and/or person and number agreement[13]; I assume that the whole AspP moves to the specifier of TP, similarly to what is proposed – *mutatis mutandis* – in e.g. Massam (2001) for Niuean VPs and Rackowski & Travis (2000) for Malagasy. A different possibility, instead of having a TopP and a TP as described here, would be to figuratively "move it down one step". TP would do the work that is done now by TopP, i.e. attracting the voice-selected argument to its specifier, whereas another projection under TP would host the fronted AspP in its specifier; this is what is argued in Collins (2017) for Samoan. For the time being, there is no clear evidence for either approaches; I choose the model described here as opposed to Collins' for simplicity of exposition.

Below TP one finds a series of projections (bracketed in (176) and labelled collectively as CliticP) that host the postverbal clitics described in chapter 2, section 2.3.2; these surface at the very right edge of the verbal complex (which, in my analysis, corresponds to the fronted AspP), to the right of overt A arguments in UV (cf. section 5.3.3). A detailed analysis of these clitics would be outside the scope of this thesis, so I do not make any strong claims about them other than working assumptions. I model them as being in direct order, i.e. their linear surface order reflecting their hierarchical order. The first projection of the series I label here PhaseAspP due to its two most common realizations, i.e. the clitics =*to* 'change of state' and =*jo* 'progressive'. However, at the linear level this same slot also contains clitics with less clear semantics and function (=*eo* 'prohibitive', =*ta* 'just' and =*ja* 'hortative'), that seemingly have more to do with modality than aspect.

The projection labelled NegP I take to host the negative clitic =*gu*; I do not offer here a complete treatment of negation in Äiwoo, which is bipartite (see chapter 2, section 2.3.2, or Næss 2015a: 84-85). An argument for the direct order of these projections is that when =*to* 'change of state' co-occurs with =*gu*, the reading is mostly 'not anymore', i.e. 'now' scopes over the negation[14]; therefore, I assume that the projection hosting =*to* c-commands the one hosting =*gu*.FutP is the projection hosting the future clitic =*Caa*; I do not comment on this further. Finally, the lowest projection of the series, labelled here DeicP, contains the deictic clitics =*Câ* 'distal' and =*Ce* 'proximal', the functions of which are, as yet, at best unclear; I decide therefore to ignore them for the scope of this work.

Under the series of projections hosting the postverbal clitics, and above AspP, I posit a phrase labelled FP as to remain neutral to its exact constitution and identity. This projection is necessary to model correctly the different attested word orders, providing a landing site for the O argument in a series of different constructions (AV, and some pronominal Os in UV; cf. sections 5.3.3, 5.3.4 and the next chapter); see also the model in Cinque (1999), where landing sites for DP movement are interspersed between functional projections related to adverbs. Despite the fact that this FP is needed for model- and theory-internal reasons, it would of course be ideal to confirm its presence with independent evidence, which cannot be obtained from the currently available data. However, since the positioning of arguments is not a central focus area of my thesis, I decide to leave the question of whether FP is tenable or not open for further scrutiny.

5.3.3   THE DERIVATION OF A SENTENCE IN UNDERGOER VOICE

Having described the clausal spine that I assume, I proceed now to present the derivations of transitive sentences in both voices. In UV, recall from chapter 3, 3.2 that the basic order is OVA, with the A argument to the left of the post-verbal clitics (this is the order when the arguments are full DPs; pronominal

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[13] Äiwoo does not have morphologically marked tense. The 'future' clitic =*Caa* can indicate future, but among its functions it also indicates habituality, often with present tense or even past tense reading. Therefore, I do not consider it to be a (pure) tense marker. Despite this, this projection does not seem to be related to person/number features, so I keep the label TP instead of e.g. InflP. I do not take any stand as to whether Äiwoo may be a tenseless language or not, i.e. whether it may lack a TP altogether (see e.g. Amritavalli & Jayaseelan 2008), and whether one might want to label this projection differently.

[14] See Roversi & Næss (ms.) for more details about the scope relationship between negation and other elements.

arguments behave differently, cf. chapter 6). A simple sentence presenting all the relevant elements is (177), repeated from (142). Here one can see the pre-verbal O (*de-enge* 'this one, him'), followed by the verb, followed by the A *isäpelivano* 'his wife', and finally the aspectual clitic =*jo* 'progressive'.

(177) <u>   O   </u>   <u> V </u>   <u>   A   </u>=**CL**   (Nubulaa 53)
       [*de-enge*]   *i-ngä-kä*   [*isäpelivano*]=*jo*
       BN:thing-DEM.PROX   PFV-eat.UV-DIR3   wife.3MIN=**PROG**
       'His wife ate him/this one' ('him' = a child; in this story, the wife is a giant in disguise)

As presented in section 5.3.1, in order to get the A argument to the left of the clitics, the AspP has to move phrasally. At the same time, having the O attracted to the pre-verbal position from within the fronted AspP would violate the ban on subextraction (Ormazabal et al. 1994, Chomsky 1995, Gallego 2010). The whole derivation I propose is illustrated in the tree in (178). First, the O must first move out of the AspP, to the specifier of FP (movement arrow marked with ①). Afterwards, the whole AspP is fronted to the specifier of TP, bringing along the A argument (②). Finally, the TopP attracts to its specifier the highest DP available for movement, namely the O (③). All elements are now in their surface order (these are shown as boxed in the tree).

(178)
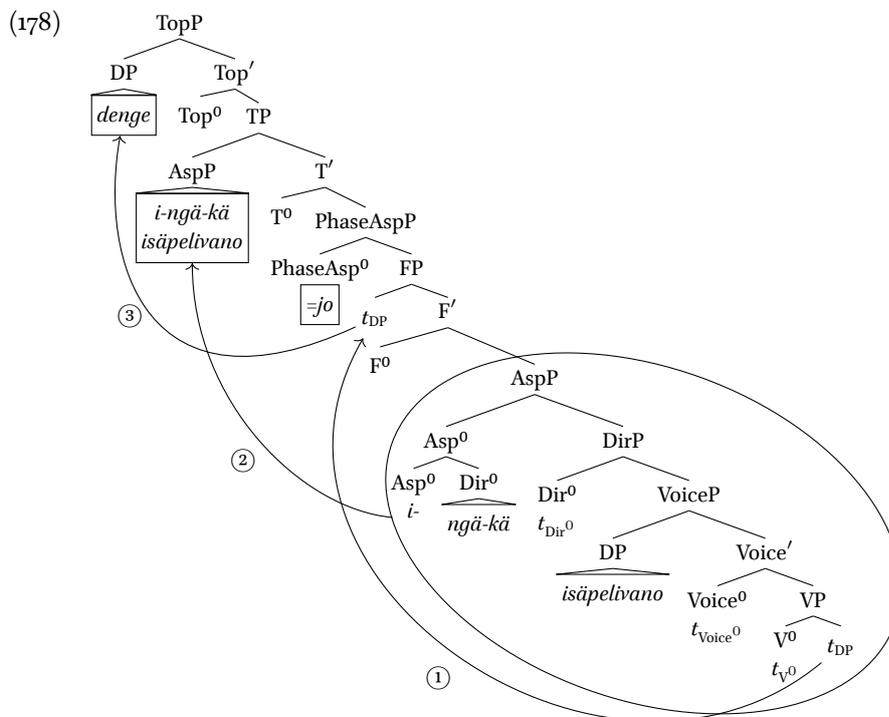
Although mechanically plausible, this implementation has its weakest point in the movement of the O to specFP; given the available data, I cannot bring independent evidence for this. Two questions arise related to this movement: why it would happen, and how. As for the why, it might be related to the licensing of the O argument, e.g. if the Voice⁰ head cannot license arguments in its complement; this would have to be true of both voices, cf. the sketches in (175). As for the how, the question is complex, and bears into exactly how the voice system is modelled and implemented in the syntactic machinery. Let us assume that the F⁰ contains a probe that looks for an argument and makes it move to specFP (i.e. something similar to an EPP feature). For this probe to find the O argument first, the O would have to be structurally higher than the A; otherwise, the A would be found first. A number of analyses of Austronesian voice systems (i.a. Aldridge 2004, Rackowski & Richards 2005, Erlewine 2018) implement a mechanism of this sort: in these analysis, the UV v^0/Voice⁰ head contains a feature that triggers the movement of the O to an outer specifier of vP/VoiceP, thereby bringing it above the A, from where it can

subsequently be attracted to higher position (179a). The AV v^0/Voice^0 head, on the other hand, does not contain this feature; thereby, the A keeps being the structurally highest argument (179b) (trees elaborated from Erlewine 2018: 672).

(179)   a. Undergoer voice:
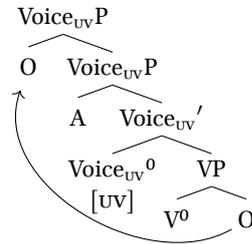
b. Actor voice:
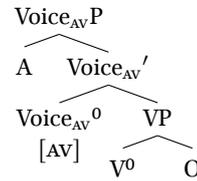
If this model is adopted, the tree in (178) can be amended with the addition of an intermediate landing site for the O in an outer specifier of VoiceP above the A, as in (179a). However, in e.g. Aldridge's (2004) or Erlewine's (2018) analyses this mechanism is related to the voice system: the presence or absence of this movement is what explains a different argument being selected as subject/pivot depending on the voice morphology. In Äiwoo, on the other hand, the O argument has to move to specFP in both voices; in other words, both the AV and the UV Voice^0 heads would have to bring the O above the A. If this does not happen, that is, if the O were not to move to an outer specifier of VoiceP (i.e. above the A) in AV, what would be attracted to specFP would be the A, as it would be the structurally highest argument. At this point, there could be two outcomes, both making wrong predictions, illustrated in (180). In the first scenario (180a), FP has attracted the A to its specifier, and the O is still in situ; later, the whole AspP moves, thereby dragging along the O, which would then be to the left of the clitics, instead of to their right as it should. In the second scenario (180b), FP could attract the O as well, bringing it out of the AspP; but at this point FP has alread attracted the A, so that the O would be above the A, and TopP would therefore attract the wrong argument (the O instead of the A). Recall that the attested order in AV is A V=CL O.

(180)   a. Possible AV scenario 1 (wrong):
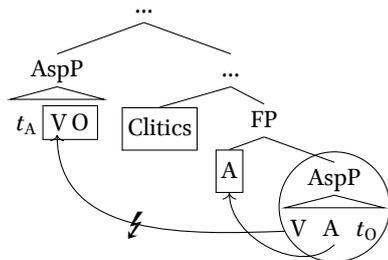
b. Possible AV scenario 2 (wrong):
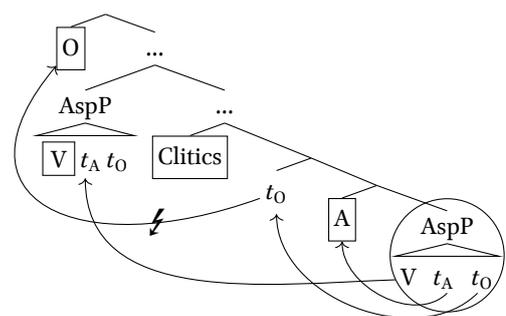
Summarizing, the main desideratum of the analysis is that in UV the O has to move to specFP, whereas in AV both arguments have to move there, ending in A-O order. A movement of the O across the A to an outer specifier of VoiceP has been argued for in order to model UV in related languages; however, in Äiwoo this would have to happen in both voices. Therefore, it is unclear what could motivate all these movements. In chapter 6 I present another argument against letting the O move across the A in UV, related to the workings of the person marking system. If O does not in fact move to an outer specifier of Voice$_{UV}$P, above the A, it is then an open question how the movements to specFP are best modelled (and justified).

One last interesting aspect of the model presented here is how the A argument is licensed. The position of the A argument in UV (adjacent to the verb and to the left of the postverbal clitics) is reminiscent of the restricted distribution of non-pivot agents in other languages with comparable voice systems such as Balinese, where non-pivot agents (i.e. A arguments in UV) must be strictly adjacent to the verb, as shown in (181); when an adverb intervenes between the verb and the agent, the sentence is ungrammatical (181b). Similar restrictions are also known from Malagasy (Erlewine et al. 2017) and Toba Batak (Erlewine 2018), in addition to (pseudo-)noun incorporation patterns in Niuean (Massam 2001) and Tongan (Ball 2005).

(181)   Balinese (Malayo-Polynesian; Erlewine et al. 2017: 392, glosses adapted)

    a.   *be-e   daar   ida/Nyoman/cicing*
       fish-DEF   UV.eat   3SG/Nyoman/dog
       '(S)he/Nyoman/A dog ate the fish'

    b.   **be-e   daar   keras-keras   ida/Nyoman/cicing*
       fish-DEF   UV.eat   quickly   3SG/Nyoman/dog
       '(S)he/Nyoman/A dog ate the fish quickly'

Erlewine et al. (2017) and Erlewine (2018) argue that non-pivot agents are restricted in their distribution due to the way in which they are case-licensed. They assume that the only source of (abstract) Case is connected to the pivot position; therefore, non-pivot agents must be licensed in some other way. In these works it is proposed that non-pivot agents are licensed by linear head-to-head adjacency between the nominal and the verb at PF (a process related to noun incorporation). According to this proposal, if no material intervenes between the two heads, then a post-syntactic process adjoins them, "shielding" thus the nominal from the case filter (Baker 2014, Levin 2015). This constraint on head-to-head adjacency explains why in e.g. Balinese or Malagasy only certain types of nominals can occur in this position, i.e. all and only those that are head-initial (to comply with the head-head adjacency restriction). In Äiwoo, on the other head, it is currently not known whether there is any such restriction; recall that even fairly long nominal constituents can occur in this position, even containing a full relative clause (see chapter 2, section 2.3.2.1). A syntactic analysis of the Äiwoo DP has not been carried out so far, and it is not within the scope of the present work[15]. Future research will be able to investigate whether the analysis in Erlewine et al. (2017) and Erlewine (2018) may be adapted to Äiwoo.

5.3.4   THE DERIVATION OF A SENTENCE IN ACTOR VOICE

Transitive sentences in AV are an almost mirroring image of those in UV, with an already noted asymmetry: whereas the non-pivot argument in UV is to the left of the postverbal clitics, in AV it surfaces to their right. This is illustrated in sentence (182): the O argument *opo nyigi lakwaio tä=nâ* 'a small house for her' (lit. '(that is) hers') is to the right of the change of state clitic *=to*. Compare the UV sentence (183), repeated from (177), where the A argument is to the left of the progressive clitic *=jo*.

(182) | A | V   =CL | O | (Moliki 78) |

    [*tumwä*]   *i-lâwââ-kä=to*   [*opo   nyigi   lakwaio   tä=nâ*]
    father.3MIN   PFV-build.AV-DIR3=CS   house   one   small   POSS:LOC.3MIN=DEIC.DIST
    'Her father built a small house for her'

---

[15] At a highly preliminary glance, Äiwoo DPs seem to be mostly noun-initial, with the exception of (i) the quantifier *dä* 'some', which can appear both before and after the noun (ii) the two putative adjectives *nyibengä* 'huge' and *nuwola* 'old'; (iii) the two demonstrative morphemes *ilâ/ile* 'DEM.DIST/PROX' (Næss 2018a); all other modifiers, including other demonstrative morphemes, numerals, and quantifiers, are post-nominal. If Äiwoo DPs are head-final, this would result in the noun – the most embedded head – surfacing to the left (and head-final DPs would not constitute a violation of the FOFC, cf. Sheehan et al. 2017). Alternatively, if Äiwoo DPs are head-initial, the noun would have to undergo roll-up movement.

(183)   <u>   O   </u>   <u>   V   </u>   <u>   A   </u>=**CL**   (Nubulaa 53)
    [*de-enge*]   *i-ngä-kä*   [*isäpelivano*]=***jo***
    BN:thing-DEM.PROX   PFV-eat.UV-DIR3   wife.3MIN=**PROG**
    'His wife ate him/this one'

In order to model this asymmetry, I propose that the only difference in the derivation of UV vs AV is that in AV, after the O moves to specFP (①), the A moves across it, whereas this does not happen in UV; this movement is marked as ①′ in the tree in (184). After this, the series of movement is the same as in UV: the AspP fronts to the specifier of TP (②); subsequently, A is the highest argument and is attracted to specTopP (③), while the O stays in specFP, i.e. below the clitics.

(184)
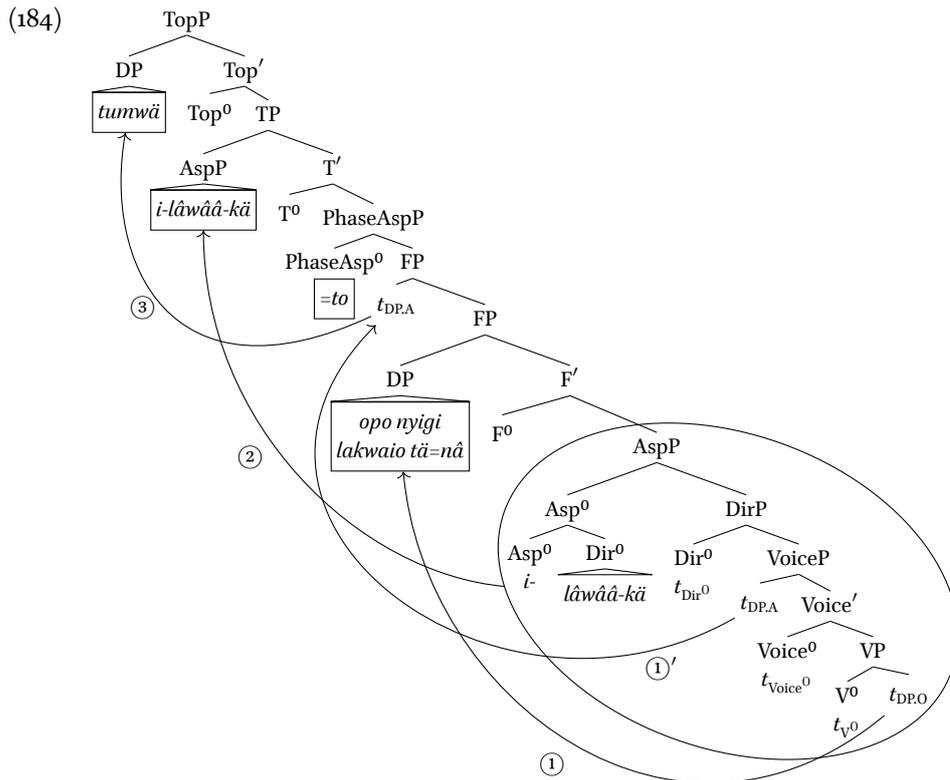
The theoretical challenges here are the same as in the model of UV presented in the previous section. First, it is not clear how and why the movement of the arguments to specFP happens (see section 5.3.3 above). Moreover, the specFP in AV has to attract both arguments in the correct order, as opposed to only the O; however, this could be derived from Richards' (1999, 2001) version of cyclicity, in which movement of several objects to multiple specifiers of one head is order-preserving: since A dominates O in their base-generated position, then A will dominate O also when both are in specFP[16]. An alternative to this – only for AV – would be not to let the AspP move phrasally, but to stick to head movement all the way: the Asp⁰ would progressively adjoin to the left of the post-verbal clitics (in (184), PhaseAsp⁰), and possibly T⁰. In this way, both arguments would be left in situ; the A argument would subsequently be attracted to specTopP, as it would be the structurally highest argument, and the O argument would be stranded to the right of the post-verbal clitics. However, this solution would imply that the difference between AV and UV are larger, as they would differ in terms of the movement mechanics being at work in the different clauses.

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[16] In this case, the first argument to move to specFP is the A, and at a second step the O moves and "tucks in" in a second specFP, lower than the first one. See Richards (1999, 2001) for details.

5.4 THE (UNSOLVED) PROBLEM OF CIRCUMSTANTIAL VOICE

5.4.1 DESCRIPTIVE SUMMARY

As presented in chapter 3, 3.2, the Äiwoo voice system is not limited to a two-way alternation comprising AV and UV. A third construction exists, labelled circumstantial voice, which selects a semantically oblique argument – e.g. a location, instrument, benefactive, cause/stimulus, etc. – as the most prominent one[17]. Circumstantial voice is marked by the post-verbal clitic =*Cä*, occurring at the very right edge of the post-verbal clitic series, only to the left of the deictic clitics (the functions of which are not well understood, and which I therefore ignore for the purpose of this work). The status of this construction is somewhat different from the other two voices, since it is not in paradigmatic alternation with them: in fact, =*Cä* can attach to verbs in both UV and AV (as well as to intransitive verbs). This is shown in the sentences in (185)-(186): in the former, =*Cä* attaches to *vili* 'weave.UV', whereas in the latter =*Cä* attaches to its AV equivalent *vei*. Given the present state of documentation of the language, it is not yet known what differences arise, if any, when =*Cä* is combined with transitive verbs of either voices; the number of near-minimal pairs such as this one is very low, something that hinders any systematic investigation.

(185) *lâto   ile   ki-**vili**-wâ-no=**ngä***   (Nyiveina betepu 38)
       then   this   IPFV-**weave.UV**-DIR2-1MIN=**CV**
       'And now I'm weaving with them' (UV + =*Cä*)

(186) *nye-ki-**vei**-lâ-i=**lä***   *benuwää*   (Nyiveina benuwää 275)
       BN:manner-IPFV-**weave.AV**-go.out-3AUG=**CV**   kind.of.basket
       'The way they weave the *benuwää* basket' (AV + =*Cä*)

Another important peculiarity of =*Cä* is that, although it attaches to both AV and UV, it seems to neutralize the difference between them in terms of person marking. Normally, AV verbs and intransitives are marked for person with prefixes/proclitics, but the addition of =*Cä* makes these verbs take suffixes/enclitics instead, e.g. the 3AUG suffix -*i* in (186); a more detailed presentation of person marking patterns can be found in chapter 6. Another aspect in which circumstantial voice patterns more similarly to UV than to AV is related to the distribution of the argument DPs. In UV, an overt A DP surfaces to the left of the post-verbal clitics (cf. section 5.3.3 above, and chapter 6), and the same happens in circumstantial voice (187).

(187) *ku-wâ-nubo   [penyibe]ᴀ=kä deu*   (Fishing Cairn 38)
       IPFV-CAUS-die   old.man=CV   before
       'The elders used it to fish before'

5.4.2 CHALLENGES PRESENTED BY THE POSITION AND BEHAVIOUR OF =*Cä*

As already noted in chapter 4, the circumstantial voice marker =*Cä* is problematic from a morphosyntax-theoretical point of view. To begin with, its distribution is typologically unexpected, in relation to e.g. Bybee's (1985) relevance hierarchy, repeated in (188) (where ≪ stands for "external to", i.e. further away from the root); see chapter 1, section 1.3.4 for the relation between Bybee's hierarchy and Baker's (1985, 1988) Mirror Principle[18]. In her balanced sample of 50 languages, Bybee finds that verbal morphemes show strong tendencies to occur in the order presented here: valence-related morphology is the closest one to the verb stem, often fused to it (cf. intransitive/causative alternations such as *lie~lay*); voice is

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[17] The reader is referred to chapter 3, section 3.2.3 for a more detailed exposition of the descriptive data and examples.

[18] Compared to the exposition in chapter 1, section 1.3.4, I have added here the VALENCE category to the hierarchy (in parentheses) for clarity, since =*Cä* is related to valence as well as to voice.

also one of the categories usually marked closest to the verb stem, then followed by aspect, tense and mood, which are found in more distant position.

(188)   MOOD $\ll$ TENSE $\ll$ ASPECT $\ll$ VOICE ($\ll$ VALENCE) (Bybee 1985)

The clitic =*Cä* is related to both voice and valence, since it adds a peripherical argument and marks it as the most prominent one; however, it is not close at all to the verb stem, surfacing instead in the furthest possible position from it.

   Not only the position of =*Cä* is unexpected. Even more problematic, in fact, is its behaviour with respect to person marking, i.e. the fact that the presence of =*Cä* changes person marking on AV verbs and intransitives from prefixes/proclitics to suffixes/enclitics, as shown in the previous section. It seems here to be the case that an outer morpheme – i.e. =*Cä*, appearing at a distance from the stem – conditions the appearance/position of an inner morpheme, i.e. the person markers, closer to the stem. This constitutes a so-called morphological look-ahead problem: after an AV or intransitive stem is chosen, whatever process that builds the complex verb form has to "know" that =*Cä* will be present before adding the person markers, in order to add them in the correct position. The presence of such discontinuous dependencies (i.e. non-adjacent morphemes influencing each other in unexpected ways) is usually considered a characteristics of templatic morphological systems, because the morphemes' linear sequence is then not explicable in terms of syntactical or semantic principles, but has to be stipulated.

5.4.3   CHALLENGES FOR A FORMALIZATION OF =*Cä*

In a generative/minimalistic framework, the fact that =*Cä* combines with verbs in both AV and UV can be modelled by merging this morpheme after the voice properties of the verb stem have been determined, i.e. above VoiceP. At the same time, I model the differences in person marking (between prefixes/proclitics and suffixes/enclitics) by positing two different φ-probes, each merged by a different voice construction, that are linearized differently (189a). The φ-probe selected in AV constructions (and intransitive verbs) is linearized to the left; therefore, the clitics attracted by it surface as proclitics (189b). As opposed to this, the φ-probe selected in UV is linearized to the right, giving therefore rise to suffixes/enclitics (a detailed exposition of the person marking system and a formalization of it are given in chapter 6).

(189)   a. AV: left-linearized φP   b. UV: right-linearized φP
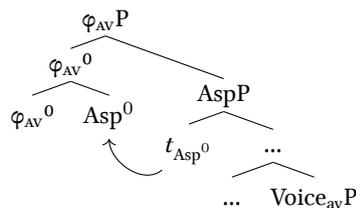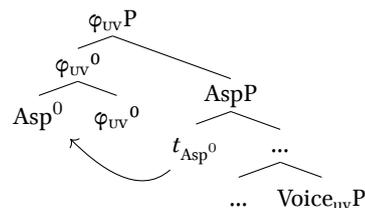
Recall now that =*Cä* can attach to all types of verbs (UV, AV and intransitives). AV and intransitive verbs normally take person marking in the form of prefixes/enclitics (i.e. they deploy the left-linearized φP in (189a)); however, when combined with =*Cä* these take suffixes/proclitics instead. In such a model, the fact that verbs with =*Cä* can only be marked by suffixes/enclitics implies the φP at work is the right-linearized UV one (189b), regardless of what kind of VoiceP is below; in turns, this entails that =*Cä* itself must be merged below the φ-probe, so that the correct one (i.e. the right-linearized one) is selected. In other words, it must necessarily be the case that =*Cä* is merged somewhere between φP and VoiceP, as shown in (190).

(190) φP » ... =*Cä* ... » VoiceP

Given its base-generated position, it is then rather puzzling that =*Cä* surfaces where it does, i.e. at the very right edge of the verbal complex, as the next-to-last post-verbal clitic.

A first hypothesis can be made about the morphosyntactic status of the morpheme =*Cä*: as all other morphemes related to voice and valence, it might be a head, and the peripheral argument promoted by it might be in the specifier of this head. In other words, =*Cä* would be a high applicative-like element (Pylkkänen 2002, 2008). If it is a head generated between VoiceP and φP, however, it is difficult to imagine how the head movement process that builds the verb stem would skip this head, given the locality constraints on head movement (see e.g. the original formulations in Travis 1984), as illustrated in (191). Moreover, if the head movement process does not skip the head in which =*Cä* is, then in order to model the attested linear order one would have to posit its excorporation from the complex head into a higher position (191), a movement which is banned under current syntactic theory (Matushansky 2006). The lightning symbols in these trees represent impossible movement operations.

(191)   a.   φP   b.   ...
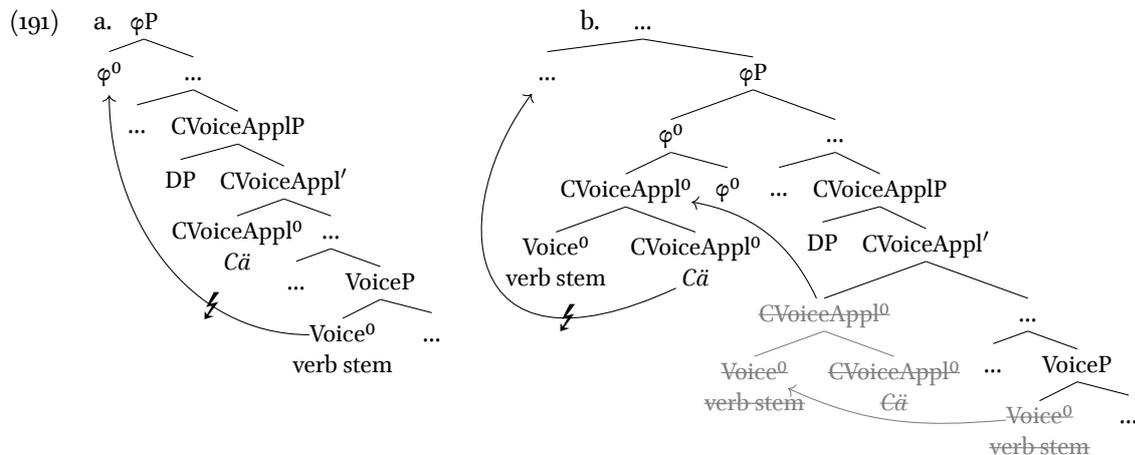
These problems related to head movement would be avoided if =*Cä* were base-generated above φP (i.e. plausibly in the position in which it surfaces), making it a "higher" applicative (for the possibility of higher applicatives merged above *v*P/VoiceP, see e.g. Boneh & Nash 2010, Öztürk 2013). However, as explained above, the behaviour of =*Cä* in relation to person marking makes this impossible.

To see why, let us consider what would happen if =*Cä* were merged after the φ-probe. AV verbs and intransitive verbs would select the left-linearized φ-probe (i.e. they would be marked by prefixes/proclitics), as normal; at this point, there is nothing in the structure that would trigger anything else. When =*Cä* is then merged, it would be "too late": the left-linearized φ-probe has already been chosen, and the person markers would then surface in the wrong place[19]. This would give the wrong predictions, since all verbs combined with =*Cä* take suffixes/enclitics, regardless of their original voice properties. The question of where *Cä* might be generated is then nothing else than a restatement in minimalist terms of the morphological look-ahead problem presented above.

Having seen that an analysis of =*Cä* as an applicative head runs into a series of problems, let us now entertain the possibility that =*Cä* is a determiner- or preposition-like element, in an external projection of the argument introduced in the specifier of the applicative phrase, as sketched in (192). The head of the applicative phrase would be null.

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[19] Note that it does not matter that the linearization itself happens after =*Cä* is merged. If morphemes are lexically specified as for how they linearize (cf. section 5.2.3.4 above), then it seems implausible to postulate that the linearization property on the φ-probe would change (from left to right) when another morpheme is merged somewhere above it.

(192)

```
                        ...
            _____|_____
          ...                  CVoiceApplP
                        _____|_____
                      XP              CVoiceAppl′
                   ____|____         _____|_____
                 DP       X⁰     CVoiceAppl⁰    ...
              applied      Cä
             argument
```
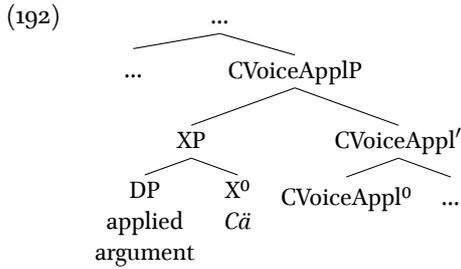
Such a proposal runs into problems when taking into consideration the position of the arguments and of *=Cä*. In sections 5.3.3-5.3.4, I have modelled the landing of the most prominent (voice-selected) argument to the right of the verb as an attraction to specTopP. Now, if they are base-generated in the same XP, the applied argument and the *=Cä* do indeed end up at quite a distance, respectively pre-verbal and as the (almost) rightmost element in the post-verbal clitic series. If the proposal in (192) is followed, there are then two options as for how to make the applied reach specTopP. The first one consists in moving the whole XP to an outer specifier of FP, above the O argument, following the same behaviour of the A argument in AV (cf. section 5.3.4 above). Later, the DP within the XP would have to move further up to specTopP, stranding *=Cä* in place, as illustrated in (193). However, as mentioned earlier, subextraction – the movement of a constituent from within a larger constituent which has moved itself, exactly the case depicted here – is banned in current syntactic theory.

(193)
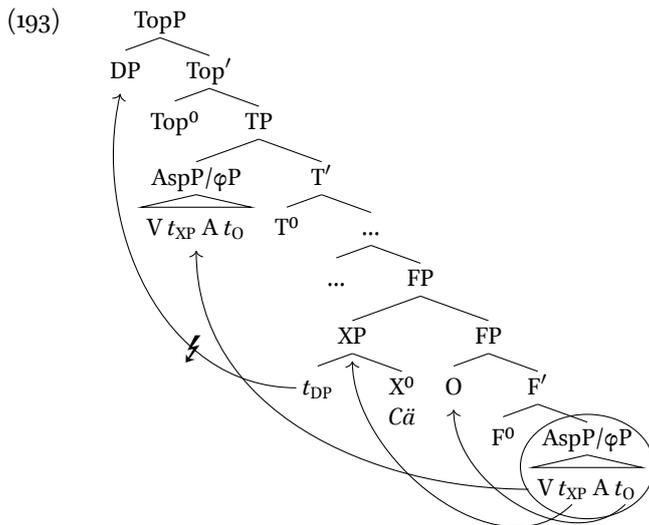
An alternative option to the one presented in (193) would be to move only the DPs to the outer specifier of FP. Now, if *=Cä* is stranded in its base-generated position within the larger verbal phrase (AspP/φP), this would obviously predict the wrong order, with *Cä* being the first of the post-verbal clitic instead of the next-to-last one. The only solution would to postulate a series of movements to the outer specifiers of FP: first the O, then the argument DP, then the whole XP (now containing only *=Cä*); this is illustrated in (194). This approach seems highly stipulative and *ad hoc*, as it seems to be difficult to motivate these movements and their order. Note that it still cannot be the case that the applicative phrase containing the XP in its specifier is base-generated above FP, for the reasons presented above (it would produce the wrong person marking pattern on intransitives and AV verbs, cf. above).

(194)
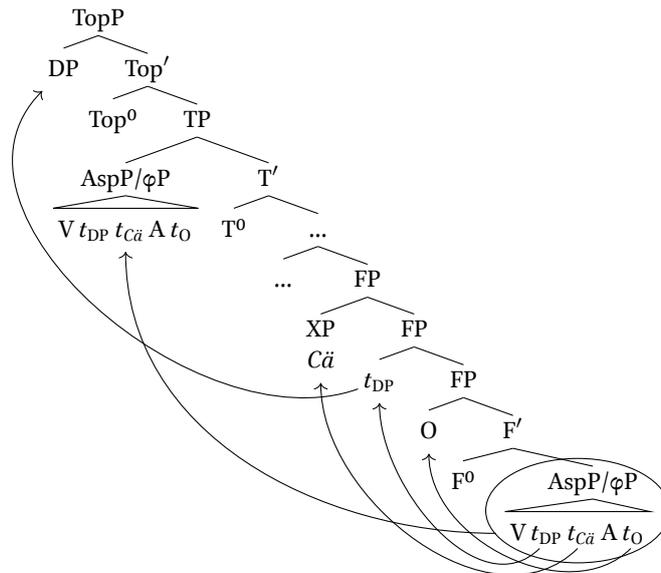
Summarizing, the circumstantial voice marker =*Cä* is analytically problematic in more than one aspect. First, its position at the edge of the verbal complex is unexpected, given its relation to valence and voice; typologically, it is more common for morphemes related to these functions to appear close to or even fused onto the verb stem. Second, the way it influences person marking is unexpected as well given its position, posing a look-ahead problem, i.e. an outer morpheme influencing the distribution of inner morphemes. Given these facts, it is difficult to propose a formalization that both covers the attested patterns and explains them in a non-stipulative manner. An implementation in the minimalistic framework runs into problems when trying to model how something that must be base-generated relatively low (i.e. below the φ-probe) surfaces at the right edge of the verbal complex. Its linear position seems in fact not to follow from any other independent syntactic or semantic principles, requiring instead to be stipulated ad hoc. It seems therefore that =*Cä* is one morpheme where the principles of templatic morphology (i.e. independent constraints on the linear string) might be at work. Given the state of knowledge about Äiwoo, how exactly to model the behaviour and distribution of =*Cä* in a minimalistic framework remains an open question.

The person marking system

6

6.1 THE FORM AND NATURE OF THE PERSON MARKERS

6.1.1 THE FORMS

The marking of pronominal arguments on the Äiwoo verb constitutes a rather complex system. One of its main characteristics is that intransitive verbs and actor voice transitives take person prefixes, whereas undergoer voice transitives take suffixes[1]. In (195a), the 1AUG marker is *me-*, prefixed to the verb stem, whereas in (195b) the same person is marked by *-ngopu*, suffixed to the verb stem. The same phenomenon is also illustrated in (196a/b).

(195)   a. ***me**-nä-vei*   (Basket weaving 11)   b. *ki-vili-**ngopu***   (Basket weaving 13)
           1AUG-IRR-weave.AV   IPFV-weave.UV-1AUG
           'We (want to) weave it'   'We weave it'

(196)   a. ***de**-ki-ebi=kâ*   (Baking 83)   b. *ki-bi-**de**=ngâ*   (Baking 82)
           12AUG-IPFV-bake.AV=DEIC.DIST   IPFV-bake.UV-12AUG=DEIC.DIST
           'We were baking'   'We were baking'

As an additional difference, the suffixes (used for UV) can mark both arguments, with certain restrictions (a detailed exposition is given in section 6.3); as opposed to this, the prefixes (used for AV and intransitives) consistently only mark the A argument.

The whole paradigm of prefixes, suffixes and independent pronouns is shown in Table 6.1. Äiwoo makes four person distinctions (1st, 1st+2nd abbreviated below to 12nd, 2nd, 3rd) and three number distinctions (minimal, unit-augmented, augmented; see chapter 1, section 1.6 for a note about these terms). The unit-augmented number is consistently marked by a combination of the augmented forms and the suffix *-le* – even when the person marker is a prefix, cf. the prefix column. The fact that the augmented person marker and the unit-augmented suffix are not adjacent could be taken at first sight to be a discontinuous dependency, i.e. a symptom of templatic morphology. However, in section 6.2.1 I propose an analysis that avoids making linear stipulation, based on analysing *-le* as a sort of floating quantifier.

Table 6.1: Äiwoo person markers and pronouns

	Prefixes			Suffixes			Pronouns		
	MIN	UA	AUG	MIN	UA	AUG	MIN	UA	AUG
1	*i-*	*me- ... -le*	*me-*	*-no (-nee)*	*-ngo-le*	*-ngo(pu)*	*iu*	*iungo-le*	*iungopu*
12	*ji-*	*de- ... -le*	*de-*	*-ji*	*-de-le*	*-de*	*iuji*	*iude-le*	*iude*
2	*mu-/mi-*	*mi- ... -le*	*mi-*	*-mu*	*-mi-le*	*-mi*	*iumu*	*imi-le*	*imi*
3	*(∅-)*	*li- ... -le*	*li-*	*-∅*	*-i-le*	*-i*	*inâ, ine*	*ijii-le*	*(i)jii*

In these paradigms, 3rd person forms stand out for special morphological properties (and as I will point out in section 6.1.2, syntactic properties too). First, the 3AUG prefix *li-* (with the phonologically conditioned allomorph *lu-*) is in a special position compared to the other prefixes: whereas these occur

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[1] Cf. section 6.1.2 and footnote 3 for a discussion of affixes vs clitics.

before the aspect prefix (cf. (195a)), *li-* occurs consistently after it, as shown in (197). This difference in placement between 1st/(12nd)/2nd and 3rd person markers is highly reminiscent of a similar distinction made in Athabaskan languages (Rice 2000), which has been traditionally taken to be an indication of their templatic morphological systems[2].

(197)   *ki-**li**-epave-mä=kaa*
        IPV-**3AUG**-cook.AV-DIR1=FUT
        'They will cook'

As opposed to 3AUG, there is no (visible) prefix marking 3MIN arguments, in any position. I argue that this can be explained by considering the nature of person and number features. In the rest of this chapter I follow the assumption that "3rd person" is actually not represented in the morphosyntax per se, but consists in the lack of person features; similarly, "singular" is the absence of number features (see sections 6.1.2, 6.2.1, 6.3.2 for a more detailed exposition, and references). Thus, the prefix *li-* can be said to mark only agreement in number (although I maintain the gloss '3AUG' for clarity); similarly, 3MIN only represents the lack of agreement altogether, since 3MIN arguments do not have person nor number features. If the verb and a nominal cannot agree, it is not surprising not to find any marking. Alternatively, one can stipulate there to be a ∅-prefix, in the same slot as *li-*, that is the result of failed agreement.

In fact, there is independent evidence for the existence of a -∅ 3MIN suffix, namely considering the allomorphy of a following consonant-initial clitic. After forms that would carry this putative 3MIN -∅ suffix, the consonant-initial clitics appear in their *n*-initial form instead of the *k*-initial one (the "elsewhere" form; see chapter 2, section 2.3.2). Compare in this respect (198a) to (198b), repeated from (196a) above. If one does not assume a -∅ suffix, it is difficult to justify the allomorphy of the clitic.

(198)   a. *i-bi-∅=**nâ***   (Moliki 202)   b. *de-ki-ebi=**kâ***   (Baking potatoes 83)
            PFV-bake.UV-3MIN=**DEIC.DIST**   12AUG-IPFV-bake.AV=**DEIC.DIST**
            'She baked it'   'We are baking'

Note that in claiming that all 3MIN arguments are marked by ∅ affixes, I deviate from the available literature (e.g. Næss 2015b), where the suffix *-gu* is analysed as a marker of 3MIN. In fact, in section 6.3.2 I argue that *-gu* is not a marker of 3MIN, but of inverse alignment. The reasons behind this analytical choice are explained in greater detail in section 6.3. Having shown how 3rd person markers differ morphologically from 1st/2nd person markers, I procede to show how they differ syntactically.

6.1.2 AGREEMENT MARKERS VS PRONOMINAL CLITICS

I argue that an additional difference between 1st/2nd person markers and 3rd person markers is that while the latter represent the result of agreement with a DP (or lack thereof, cf. section 6.4), the former represent the pronominal argument themselves; in other words, 1st/2nd markers are in fact clitics[3]. The main argument for this distinction is that 3rd markers consistently co-occur with overt DPs, whereas 1st/2nd markers do not (as a strong tendency, but see below for a possible exception).

An example of this is shown in (205), where the 3AUG prefix *li-* co-occurs with the overt DP *pesibiliwâlili ilâkâ* 'the young women'. Another example, with the suffix *-i* instead of the prefix *li-*, is shown in (200) (recall that in UV, the A argument is post-verbal, so *sime* 'people' cannot be interpreted as referring to the O 'her'; here I argue *contra* Næss 2018a: 38, where the suffix *-i* is claimed not to co-occur

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[2] When listing 1st, 12nd and 2nd person, I omit henceforth 12nd, since it consistently patterns with 1st and 2nd person; the reader might want to keep in mind that whenever I mention 1st/2nd in Äiwoo, I make implicit reference to 12nd person forms as well.

[3] Here I use the term "clitic" in a different way compared to e.g. when I label the postverbal morphemes *=to* or *=Caa* as "clitics". When I label the 1st/2nd person markers as clitics, I intend this in the morphosyntactic sense, similarly to e.g. Romance clitics, although in Äiwoo they behave (morpho)phonologically as affixes. The post-verbal clitics, on the other hand, are clitics in the (morpho)phonological sense proper, i.e. they can attach to a variety of hosts (cf. e.g. Zwicky & Pullum 1983).

with a nominal argument). The morpheme *-gu* – previously analyzed as a marker of 3MIN A arguments – can also co-occur with an overt DP, as in (201)-(202); in the latter sentence, one can also see the suffix *-i* co-occurring with the overt O DP *lilutowâ pelivalite* 'two of his brothers'. Note that at this point I leave the morpheme *-gu* unglossed. In the available literature, this has been analyzed as a 3MIN suffix (e.g. Næss 2015b); however, I will argue in section 6.3 that this is actually a marker of inverse alignment, as mentioned above.

(199) ***pe-sibiliwââlili***   ***ilâkâ*** *ki-li-epave-mä=kaa*   *de-ki-li-ngä*   (Burials 66)
        COLL-young.woman   there   IPFV-**3AUG**-cook.AV-DIR1=FUT   BN:thing-IPFV-GEN.A-eat.UV
        'The young women will cook food'

(200) *dee* *ku-tubuli-**i***   ***sime***   (Childbirth 195)
        this   IPFV-persist.UV-**3AUG**   person
        'The people help/support her'

(201) *ku-wâ-lile-â-**gu**-mu*   ***tumo-mu=wâ***   (Marriage 27)
        IPFV-CAUS-marry-UV-**GU**-2MIN   **father-2MIN=DEIC.DIST**
        'Your father would arrange your marriage' (lit. 'make you marry')

(202) ***lilu=to=wâ***   ***pelivalite***   *ki-ngä-kä-**gu**-i*   ***siväle***
        two=CS=DEIC.DIST   **man's.brother.3MIN**   IPFV-eat.UV-DIR3-**GU**-3AUG   **wife.3MIN**
        mi-pe-sikumâpolâ=kâ   (Nubulaa 66)
        BN:person-COLL-giant=DEIC.DIST
        'His wife who is a giant (lit. 'wife, the giant one') ate two of his brothers'

As opposed to this, 1st/2nd markers almost never co-occur with overt DPs: in sentences (203)-(204) a pronoun is used for contrastive focus, and there is no correspond person marking on the verb.

(203) *go* ***ku-mo*** *ngâ* *nuumä=ke* ***iumu***   (Næss 2015b: 292)
        because   **IPFV-stay**   LOC.PREP   village=DEIC.PROX   **2MIN**
        '[You must have seen it], because you are the one who stays at home'

(204) *ba,* *dee* *sii=ee*   ***ku-wâ-nubo=kâ***   ***iu***
        NEG   this   fish=DEIC.PROX   **IPFV-CAUS-die=DEIC.DIST**   **1MIN**
        '"No, I am the one who killed these fish."'

There are only extremely sparse attestations of 1st/2nd markers co-occurring with an overt DP that does not show any indications of it maybe being dislocated or topicalized, such as in (205); the only attested cases are in actor voice.

(205) ***ingopu*** *me-ki-lää-ute-kä*   (Burials 159)
        1AUG   1AUG-IPFV-give.AV-again-DIR3
        'We give again [the last respect to the dead person]'

Given the available data, cases such as this seem rather exceptional, and they might be handled by saying that Äiwoo allows for the clitic doubling of subjects, at least in actor voice. The phenomenon of clitic doubling, well attested from a.o. Romance languages, Greek, Slavic, Albanian, and Semitic (see Anagnostopoulou 2017a for an overview and references), consists in the co-occurrence within the same clause of a pronominal clitic and a co-referential DP in its standard argument position, as in (206), where the object *Juan* co-occurs with the object clitic *lo* (the morpheme *a* represents here differential object marking, and it is not to be considered a prepositional or dative-like element).

(206)   Rioplatense Spanish (Romance, Argentina; Jaeggli 1986: 32, as cited in Anagnostopoulou 2017a: 3, glosses adapted)
        lo$_i$ *vimos* *a* ***Juan$_i$***
        3SG.OBJ   saw.1PL   A   **Juan**
        'We saw Juan'

The clitic doubling of subjects, although not typically occurring in languages typically known for clitic doubling such as certain varieties of Spanish, does indeed occur in e.g. Northern Italian dialects (Poletto 2000), as illustrated with Emilian (in the variety spoken in Correggio) in (207), where the independent pronoun *tè* and the clitic *t*= co-occur[4].

(207)   Correggio Emilian (Romance, Northern Italy; native speaker competence of the author)
   tè *t=fê*   *sèimper* *da* *magnêr* *bèin*
   2SG **2SG.SUBJ**=make.2SG always to eat well
   'You always cook well'

In recent generative literature some diagnostics have been developed to distinguish agreement markers from doubling clitics (for an overview, see Kramer 2014, Harizanov 2014, Anagnostopoulou 2017a, Baker & Kramer 2018). First, agreement markers are considered to be the spell-out of features on a head, whereas doubled clitics are pronominal elements. This makes a prediction on their syntactic status: while the latter are full arguments and can therefore influence e.g. binding relations and semantic scope, the former are syntactically "inert". However, since the type of tests that might shed light on these issues require data that is not currently available for Äiwoo, other criteria have to be considered.

 A criterion proposed in Nevins (2011) is that agreement markers (tend to) vary depending on tense marking and possibly aspect, whereas doubling clitics do not. Now, tense is not marked in Äiwoo, so this criterion is not immediately useful either; if one considers aspect, all person markers – including 3rd person – have exactly the same forms regardless of aspect, something that supports the view that at least some of them are clitics. Another criterion, argued for in Preminger (2009, 2014), is that clitics tend to be superficially similar to the full pronouns, effectively being reduced forms of these, whereas agreement markers often do not (need to) look alike the full pronouns at all. In Äiwoo, 1st/2nd person markers are superficially very similar to the full pronouns (with the exception of *me-* 1AUG and *-no* 1MIN), whereas 3rd person markers are not as easy to see as reduced forms of the corresponding pronouns. This supports my analysis of 1st/2nd markers as clitics vs 3rd markers as agreement markers (although the exceptions above weaken this argument somewhat).

 Finally, a syntactic criterion from Preminger (2009, 2014) makes it possible to distinguish clitics and agreement markers on the basis of what happens when the (agreement) relation between the verb and a given DP is obstacled: a failure in pure agreement will result in some default marker (most often the 3SG/3MIN form), whereas a failure in cliticization will result in no material at all, i.e. the lack of a clitic. Preminger argues for this on the basis of Basque, considering phenomena where dative arguments intervene between the verb and the direct object[5]. While Äiwoo does not have true indirect objects (i.e. they are all marked with a preposition), a similar effect can be argued for regarding 3MIN markers, if one assumes the hypothesis that what is normally called "3rd person" is actually the lack of person features (see e.g. Benveniste 1971, Siewierska 2004). According to this hypothesis, since a 3rd person DP lacks person features, the verb cannot enter in a relation with it, and one would then expect a difference between failed agreement and failed clitic doubling. As showed earlier, the 3MIN marker is ∅, and this is visible in undergoer voice due to the clitic allomorphy. By Preminger's diagnostic, if 3MIN was a clitic, there ought to be nothing there at all, but then there would be nothing to trigger the allomorphy (recall that the post-verbal clitics' different allomorphs are chosen on the basis of the item strictly adjacent to their left); if 3MIN -∅ is agreement, on the contrary, it might as well be the default agreement that surfaces when a verb does not agree with any DP.

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[4] Note that in an equivalent sentence in French, the pronoun *toi* – corresponding to *tè* here – would be left-dislocated, thereby leaving the clitic *tu* – corresponding to *t*= here – as the only expression of the subject in the clause proper. See Poletto (2000: chapter 6) for arguments as to why (at least some) Northern Italian pre-verbal subjects should not considered to be left-dislocated even when clitic-doubled. However, how to determine whether a pre-verbal argument in Äiwoo is somehow left-dislocated or topicalized or not is an open question, given the current state of documentation of the language.

[5] Preminger works in a minimalist framework, where "intervention" is to be understood as happening at the level of the hierarchical structure represented in the syntactic trees, and crucially not at the level of the surface linear string.

Finally, the fact that one observes restrictions related to person- and number-hierarchies (e.g. direct/inverse systems, the Person-Case Constraint etc.) is often considered a sign of the fact that the involved morphemes are more clitic-like than agreement-like (Nevins 2011, Anagnostopoulou 2003, 2017a). In Äiwoo similar effects are present in undergoer voice, where two arguments might be marked at the same time, but only for given combinations of person and number features on the A and the O (cf. section 6.3 for a detailed overview and syntactic implementation).

In this section I have argued that 3rd person markers differ from 1st/2nd person markers not only morphologically (i.e. in their linear position and null exponency), but also syntactically: the former are agreement affixes, whereas the latter are (possibly doubled) clitic pronouns. Given these differences, it is in fact completely expected that they behave differently in the morphosyntax: explaining their difference in behaviour does not require linear stipulations (i.e. an appeal to templatic morphological principles), but follows from their different nature. In the next sections, I present first a formalization within a generative minimalist framework of person marking in actor voice and intransitive verbs (section 6.2.1). The treatment of undergoer voice, given its complexity, occupies the two following sections: section 6.3 offers a descriptive analysis, and in section 6.4 I propose a formalization.

6.2   Actor voice and intransitives

6.2.1   Two different slots

As described in the previous section, transitive verbs in actor voice and intransitive verbs are person-marked by prefixes/proclitics. I argued that 1st/2nd person markers are pronominal clitics, possibly allowing clitic doubling of the indexed argument (at least from certain positions); these occur before the aspect marker. On the contrary, I analyze 3rd person markers as agreement markers, of which only 3AUG *li-* is visible; these occur after the aspect marker. This is illustrated in (208).

(208)   **1st/2nd** – aspect – **3rd** – verb stem

This exact behaviour, with 1st/2nd person occurring in one slot and 3rd person in a different one, is found in Athabaskan languages (Rice 2000: chapter 10). Consider the optative forms of the verb 'hide' in (209) (Rice does not gloss the individual morphemes in these forms; I keep her boldface on the person marker). In (209a), the 1SG marker *h* occurs in the second-to-last slot, whereas in (209b), the 3DU/PL marker *k* is in the second slot. Rice argues that their difference in placement follows from their difference in morphosyntactic nature, and that no linear stipulations are needed.

(209)   Slave (Athabaskan, Canada; Rice 1989: 555, as cited in Rice 2000: 182-183)

    a.   *ní-né-o-**h**-'į*   1SG: *h*   b.   *ní-**ke**-n-éo-'į*   3DU/PL: *k*

Following her approach, I assume that this split between 1st/2nd and 3rd person follows from the fact that "3rd person" actually consists in the lack of person features: in other words, the slot (in Äiwoo) in which *li-* is found does not mark person agreement, but only number agreement, making therefore a simple distinction between singular/minimal (no affix, or $\varnothing$) and plural/augmented.

Given that 1st and 2nd person clitics attach to the left of the aspect marker, I posit that an agreement probe situated above AspP agrees with a nominal argument carrying 1st/2nd person features, triggering its cliticization, as illustrated in (210)[6]; the head movement of the verb stem through Dir[0] and [0] is as presented in chapter 5. After the A has cliticized, the O is moved to specFP (directly dominating φP),

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[6] I follow here the implementation of clitic doubling from Nevins (2011), Preminger (2014, 2019), where the doubled clitic is a determiner-like D[0] element that, after agreement between the probe and the argument, undergoes long head movement (i.e. skipping the heads in between) and adjoins to the probe, leaving the argument – possibly just a null *pro* – in situ; see the cited works for more details.

and later the whole φP is fronted, giving thus the (A) V=CL O order; this is shown in (211), where parts of (210) have been abbreviated.

(210)

(211)
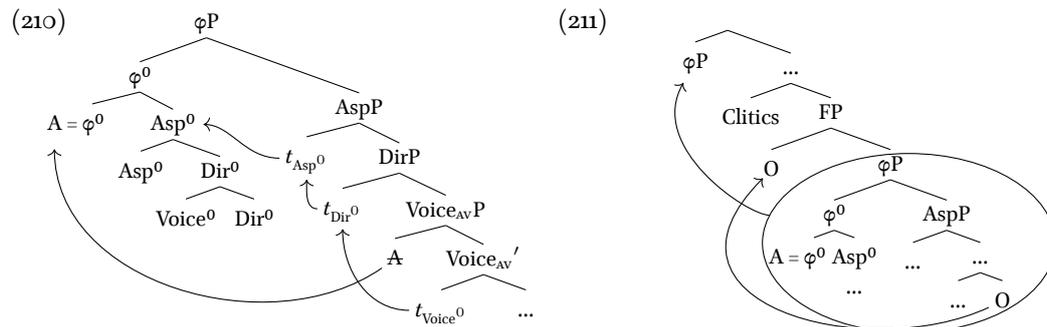
If the A argument (i.e. the closest one to the probe) does not have 1st/2nd person features, this probe does not agree with anything (as 3rd person arguments do not have person features, and therefore cannot be agreed with), and there will therefore no visible morphology (this rests on a view of agreement as an operation that can fail without crashing the derivation, as in Preminger 2014; cf. section 6.4.1.2 below for more details). However, a plural 3rd person A argument triggers number agreement on the verb stem with *li-*. To model this, I have to posit that the actor voice Voice$_{AV}$^{0} has an uninterpretable [uPL] feature that can be checked if a plural argument is merged in its specifier, as illustrated in (212)[7].

(212)
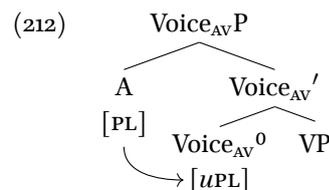
This proposal, however, has a series of problems. First, it is not clear what would prevent the Voice^0 head to look *downward* for a goal at the moment of its merge, and agree with a plural O argument, something that is not attested. In this thesis I assume a uniformly downward agreement (see footnote 7), but agreement between the Voice$_{AV}$^{0} and the O could only be avoided by agreement working upward; notice that in UV, we must assume the agreement probe to be able to interact with both arguments, in a downward fashion (cf. section 6.4 below). Second, this number agreement only happens with 3rd person arguments, i.e. if the A DP lacks person features. In some way, the presence of person features must render a [PL] feature invisible to this agreement process (something which can possibly be considered as another piece of evidence for analyzing 3rd person as the lack of person features). Finally, saying that the 3AUG prefix *li-* is only available in AV is a simplification. In fact, it can be found in UV, where it has a "generic agent" reading (Næss 2015b: 285, footnote 10). This "generic agent" function is often compatible with a 1AUG reading as in (213) – note the "We'll see" translation. Parallels can also be traced to the 1PL pronouns *on* in French and *a gente* in Brazilian Portuguese, both of which have their diachronic origin in elements with a "generic agent" reading (respectively 'one' and 'the people').

(213)   *ki-**li**-amoli-kä=naa*   *maa ki-eve=kaa*   *e   ku-uvä*   (Gardening 640)
        IPFV-**GEN.A**-look.at.UV-DIR3=FUT if   IPFV-three=FUT or IPFV-four
        [How many children would you like to have?] 'We'll see, maybe three or four'

However, the precise semantics of this construction is as yet not fully understood. Summarizing, the prefix *li-* seems to mark (i) 3AUG S/As and (ii) generic agents, with the latter being compatible with a 1AUG reading. This combinations of functions for one morpheme is also attested in several of the Athabaskan

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[7] Exactly when this agreement happens impinges on whether agreement is assumed to work upward, as in Zeijlstra (2012), Bjorkman & Zeijlstra (2014, To appear), or downward, as defended in e.g. Preminger (2013, 2014), Preminger & Polinsky (2015).

languages surveyed in Rice (2000), here examplified with the *ts'* 'human subject' prefix of Slave (as far as I understand from Rice (2000), the *e* in the boldtyped morphemes is an epenthetic vowel, as the form she mentions in the running text is *ts'*).

(214)   Slave (Athabaskan, Canada; glosses adapted from Rice 2000: 184-188)

a.   3PL reading:
*dene   jǫ   ná-**ts'e**-dé*
person   here   preverb-**H.SUBJ**-stem
'People live here'

b.   Generic agent reading:
*yahtį́kǫ́   go-**ts'e**-h-tsį*
church   area-**H.SUBJ**-valence-build
'A church is being built'

c.   Generic/1PL reading:
*'eyáhdi   hé   ná-go-**ts'e**-ye*
ball   with   preverb-area-**H.SUBJ**-play
'Let's play ball'

To summarize, intransitives and actor voice transitives present what could seem to be an instance of templatic morphology, as not all "subjects" (S/As) are marked in the same place, but in different slots depending on whether they are 1st/2nd person or 3rd. I argued that this distinction is not due to arbitrary linearization constraints, but to the fact that these markers do not constitute a homogeneous class. To the left of aspect, the 1st/2nd person markers are proclitics, bearing the person and number features of the S/A argument. To the right of aspect, on the other hand, one finds a slot that only marks number agreement, as opposed to person. Their respective order in relation to the aspect markers is also accounted for in Rice (2000: 192–193, 348–350), based on the semantic/pragmatic differences between 1st/2nd person arguments and 3rd person arguments (recall that the order found in Athabaskan languages in Rice 2000 is 1st/2nd – aspect – 3rd, i.e. exactly the same order as in Äiwoo); in brief, 3rd person arguments can only be interpreted if they are assigned a referent, whereas 1st/2nd person arguments are inherently referential in virtue of their being speech act participants.

6.2.2   THE UNIT-AUGMENTED SUFFIX *-le*

I analyze the unit-augmented suffix *-le* as a floating quantifier-like element, restricting semantically the augmented number of the constituent it modifies to 'only one more'. A sentence containing this suffix combined with a 1st person prefix/proclitic is presented in (215).

(215)   ***me**-ku-wo-wâ-**le**=naa   ngä   Sunday*   (Pale 47)
1AUG-IPFV-go-DIR2-UA   LOC.PREP   Sunday
'We two will come on Sunday'

In my proposal, *-le* can be stranded in situ by this cliticization, thereby surfacing to the right of the verb stem, and at a distance from the person clitic itself, as shown in (216); this applies not only to 1st/2nd arguments, but to all types of S/A arguments, since in AV and intransitives they all move at a certain point upward in the structure, thereby stranding *-le* to the right of the verb stem. Importantly, this account of *-le* is compatible with UV as well: the only difference is that in UV, the clitics attach to the *right* of the probe instead of to its left, which is why *-le* surfaces adjacent to the pronominal marker it modifies.

(216)
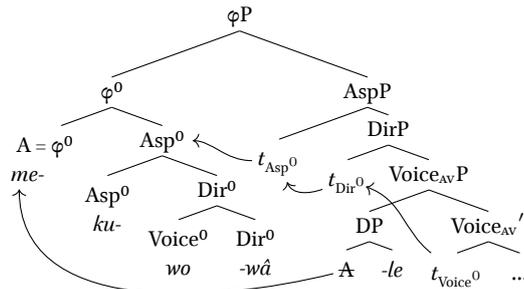
A couple of interesting properties of *-le* discussed in Næss (2018a) are not accounted for by this proposal. First, this suffix can mark the number of the O argument (as opposed to the A) in imperatives, as shown in (217). I do not propose any syntactic model of the structure of Äiwoo imperatives; therefore, I leave this issue aside for the purpose of this thesis.

(217)   *mo   kâ-no=ngä   vevaale-le   ngâ   nuwopa   to-de*   (Næss 2018a: 35)
         but   say-1MIN=CV   look.after-UA   LOC.PREP   house   POSS:LOC-12AUG
         'So I said, [you two] look after our house'

A second interesting case is one sentence in which *-le* is suffixed to an A suffix, but indexes the O argument. Example (218), from Næss (2018a: 36), consists of two consecutive sentences from a text about four brothers who have got lost at sea while fishing, and their parents are mourning while talking to the fifth brother. First, sentence (218a) has the four brothers as its S; as expected, there is no unit-augmented suffix here (since the S argument consists of four entities). In (218b), however, *-le* cannot refer to the brothers (i.e. the A argument), but it must refer to the two parents (the O argument). As further evidence, the O argument (the pronoun *iungo-le* 'we two') bears the same unit-augmented marking.

(218)   a.   *pelivali-si-mu*   *mi-li-elââ*   *lâ*   *li-po-du=to=wâ*
               PL-same.sex.sibling-2MIN   BN:one-3AUG-be.big.PL   DEIC.DIST   3AUG-go-all=CS=DEIC.DIST
               'Your big brothers have all gone.'

         b.   *kâ-ngo-le=nä*   *maa*   *nâ-tu-kä-i-le=naa*   *ingo-le*   *ngâ*   *numobâ*
               say-1AUG-UA=CV   if   IRR-bring.UV-DIR3-3AUG-UA=FUT   1AUG-UA   PREP.LOC   hole
               'We (2) thought they (PL) would take us (2) to the grave.'

What might give a clue as to what happens in this sentence is precisely the double presence of *-le*, i.e. both on the verb and on the argument it refers to. If *-le* in fact is a floating quantifier, then these two positions correspond respectively to the positions in which the analysis proposed in chapter 5 predicts it to pass through. The *-le* attached on the verb is the lower copy, marked by ① in (219), whereas the *-le* on the pronominal argument is the higher copy, i.e. after the O has moved to specFP (marked by ②). The question is then why both copies are pronounced instead of only the highest one (cf. e.g. the cases in Polinsky & Potsdam 2006); more research is needed in order to gain a better understanding of this construction and of its systematicity.

(219)
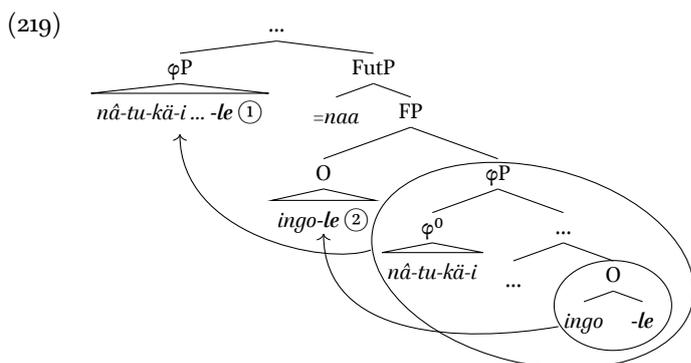
6.3   UNDERGOER VOICE: DESCRIPTION[8]

6.3.1   TWO MUTUALLY EXCLUSIVE PATTERNS

The marking of pronominal arguments on verbs is the most complex in undergoer voice, and it will take a considerable detour to describe it and formalize it, before tracing the discussion back to the layered

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vs templatic morphology issue. As opposed to the person marking system found in AV and intransitive verbs, where only the S/A argument is marked, in UV both arguments can be marked in certain contexts. If both arguments are pronominals, one of two (mutually exclusive) patterns can obtain, depending on the combination of person and number features of the A argument and the O argument; I label these two patterns "direct" and "inverse", for reasons to be made clear in section 6.3.2. In the *direct* construction, the A is marked by an enclitic/suffix, and the O surfaces as an independent pronoun, as shown in (220); in the notation X → Y, X corresponds to the A argument and Y to the O. Note that for brevity of exposition only some combinations of A and O are illustrated here, although all combinations that do not appear in the inverse construction (see below) will follow this pattern. Throughout this section, the examples containing the verb *togulo* 'hit.UV' and the next have been constructed in order to maximize clarity and simplicity of exposition; they are based on paradigms otherwise consistently attested throughout the corpus; see appendix B for attested verb forms showing the same alternations.

(220)   Direct construction:

    a. *i-togulo-**no**=ngaa*   ***ijii***   1MIN → 3AUG   c. *i-togulo-**mu**=waa*   ***iu***   2MIN → 1MIN
       PFV-hit.UV-**1MIN**=FUT   **3AUG**   PFV-hit.UV-**2MIN**=FUT   **1MIN**
       'I will hit them'   'You will hit me'

    b. *i-togulo-**i**=laa*   ***imi***   3AUG → 2AUG   d. *i-togulo-**ji**=ngaa*   ***ijii***   12MIN → 3AUG
       PFV-hit.UV-**3AUG**=FUT   **2AUG**   PFV-hit.UV-**12MIN**=FUT   **3AUG**
       'They will hit you (pl.)'   'You and me will hit them'

The second pattern is the *inverse* construction, where both the A and the O are marked by enclitics/suffixes. The inverse construction is found in all and only the cases in (221).

(221)   a. A = 1MIN, O = 2nd person (either MIN or AUG)

    b. A = 3MIN, O = non-3MIN

The sentences in (222) represent all the possible combinations of A and O for which the inverse construction is used. The examples in (222a) correspond to case (221a) above, while (222b) correspond to case (221b). A description of this pattern where -*gu* is analyzed as a marker of 3MIN A arguments can be found in e.g. Næss (2015b) and previous literature.

(222)   Inverse construction:

    a. 1MIN → 2MIN/AUG:

       i. *i-togulo-**nee-mu**=waa*   1MIN → 2MIN   ii. *i-togulo-**nee-mi**=(w)aa*   1MIN → 2AUG
         PFV-hit.UV-**1MIN-2MIN**=FUT   PFV-hit.UV-**1MIN-2AUG**=FUT
         'I will hit you (sg)'   'I hit will you (pl)'

    b. 3MIN → non-3MIN:

       i. *i-togulo-**gu**-∅=ngaa*   3MIN → 1MIN   iv. *i-togulo-**gu-ngopu**=waa*   3MIN → 1AUG
         PFV-hit.UV-**GU-1MIN**=FUT   PFV-hit.UV-**GU-1AUG**=FUT
         '(S)he/it will hit me'   '(S)he/it will hit us.EXCL'

       ii. *i-togulo-**gu-ji**=ngaa*   3MIN → 12MIN   v. *i-togulo-**gu-de**=ngaa*   3MIN → 12AUG
         PFV-hit.UV-**GU-12MIN**=FUT   PFV-hit.UV-**GU-12AUG**=FUT
         '(S)he/it will hit you and me'   '(S)he/it will hit us.INCL'

       iii. *i-togulo-**gu-mu**=waa*   3MIN → 2MIN   vi. *i-togulo-**gu-mi**=(w)aa*   3MIN → 2AUG
         PFV-hit.UV-**GU-2MIN**=FUT   PFV-hit.UV-**GU-2AUG**=FUT
         '(S)he/it will hit you (sg)'   '(S)he/it will hit you (pl)'

                                        vii. *i-togulo-**gu-i**=laa*   3MIN → 3AUG
                                          PFV-hit.UV-**GU-3AUG**=FUT
                                          '(S)he/it will hit them'

At this point, a note is in order about 3MIN O arguments. These are never marked, neither by an independent pronoun nor by an agreement suffix or clitic, with the possible exception of emphatic/contrastive readings. Whenever no O argument is overtly expressed, the default reading is with a 3MIN O, as shown in the examples in (223). Sentence (223d) here shows how a 3MIN A triggers the *n*-initial form of the allomorphy, as presented in section 6.1.1. As opposed to this, there seems to be no evidence for postulating a 3MIN O suffix, since this would be "transparent" as for the clitic allomorphy: the clitics would have to "skip" this putative ∅ 3MIN O suffix, and choose their allomorph on the basis of the item to its left (i.e. in these sentences respectively *-no* 1MIN, *-mu* 2MIN, *-i* 3AUG, *-∅* 3MIN).

(223)   Direct construction with a 3MIN O:

a. *i-togulo-**no**=ngaa*   1MIN → 3MIN   c. *i-togulo-**i**=laa*   3AUG → 3MIN
   PFV-hit.UV-**1MIN**=FUT   PFV-hit.UV-**3AUG**=FUT
   'I will hit him/her/it'   'They will hit him/her/it'

b. *i-togulo-**mu**=waa*   2MIN → 3MIN   d. *i-togulo-**∅**=naa*   3MIN → 3MIN
   PFV-hit.UV-**2MIN**=FUT   PFV-hit.UV-**3MIN**=FUT
   'You will hit him/her/it'   '(S)he/it will hit him/her/it'

The fact that 3MIN Os are never marked by a suffix/enclitic is the main evidence for not including the combination 3MIN → 3MIN among those that use the inverse construction, cf. the gap in (222b) above.

Although 3MIN Os are never marked on the verb and routinely dropped altogether, they do not appear to be the only case of an O not receiving any overt marking. In fact, the combination 3MIN → 1MIN in (222b-i), repeated here as (224a), seems to be an exception. Here, there is no overt marking of the O argument, and as in all other cases where the O is not marked, one would expect this verb form to have a 3MIN O reading (i.e. '(S)he will hit him/her/it'). However, the only possible reading of verb forms like this is with a 1MIN O, as shown in the translation. The 1MIN O, although non-overt, does seem to be present: the following clitic appears in its *ng*-initial form, as it does after 1MIN markers (of both As and Os) such as in e.g. (223a), repeated here as (224b). Due to this allomorphy, I assume there to be a *-∅* 1MIN suffix, only available in this specific context, i.e. after *-gu*[9].

(224)   a. *i-togulo-**gu**-**∅**=ngaa*   3MIN → 1MIN   b. *i-togulo-**no**=ngaa*   1MIN → 3MIN
           PFV-hit.UV-**GU**-**1MIN**=FUT   PFV-hit.UV-**1MIN**=FUT
           '(S)he/it will hit me'   'I will hit him/her/it'

Table 6.2 summarizes the different combinations of A and O and which construction they use. Cells marked with a dash represent reflexive combinations. The cells marked with a question mark are those in which there is a referential overlap between the A and the O, e.g. *I see us*. These combinations are quite rare in natural speech, and they can feel quite awkward to native speakers outside of rather specific contexts, even in English. In Äiwoo, they are unattested; I decide therefore to ignore them for the time being, and leave their investigation open to future inquiry (the formalization I propose in section 6.4 predicts these combinations to use the direct construction, something that may be tested with their elicitation from native speakers).

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[9] This exceptional combination has a diachronic explanation. The Äiwoo morpheme *-gu* is in all likelihood cognate to similar morphemes in other Oceanic languages; crucially, these mark 1SG (Os). Ross & Næss (2007) propose that in Äiwoo, the suffix *-gu* has been reanalyzed from marking a 1MIN O in sentences like (224a) to a different function, namely marking a 3MIN A (or, in my analysis, inverse alignment), thereby extending its distribution. At a synchronic level, however, one can either consider *-gu* as a portmanteau morpheme encoding 3MIN→1MIN, or assume – as I do – that the 1MIN marker has a special null allomorph used only for this combination. Either way, this cell represents an exception in the paradigm; to keep the syntactic implementation simple, I will assume there to be a null morpheme as showed in the examples above. Interestingly, *-gu* in Äiwoo still unambiguously marks a 1MIN O in imperatives (where there clearly is no 3MIN A), as in (i).

(i)   *meli-kâ-**gu**=to*   (Heron 19)
      let.go-DIR3-**1MIN**=CS
      'Let me go!'

Table 6.2: Distribution of direct vs inverse construction for all combinations of arguments

O A	1MIN	12MIN	2MIN	3MIN	1AUG	12AUG	2AUG	3AUG
1MIN	—	?	Inv	Dir	?	?	Inv	Dir
12MIN	?	—	?	Dir	?	?	?	Dir
2MIN	Dir	?	—	Dir	Dir	?	?	Dir
3MIN	Inv	Inv	Inv	Dir	Inv	Inv	Inv	Inv
1AUG	?	?	Dir	Dir	—	?	Dir	Dir
12AUG	?	?	?	Dir	?	—	?	Dir
2AUG	Dir	?	?	Dir	Dir	?	—	Dir
3AUG	Dir	Dir	Dir	Dir	Dir	Dir	Dir	Dir

The behaviour of 12nd person is notable, as it does not seem to interact with the system of construction alternation. In fact, all combinations where the A is AUG take the direct construction (cf. the lower portion of table 6.2), and this applies to 12MIN as well. In a sense, this seems to be the only piece of evidence for a singular-plural distinction in Äiwoo, since 12MIN, which refers to more than one individual, patterns together with the AUG forms (as opposed to the strictly singular MIN forms); see also Næss (2018a) for a detailed discussion about how plurality is coded in Äiwoo. Table 6.3 abbreviates away the 12nd person forms, making the patterns more visible. To summarize, in (225), repeated from (221) above, I restate the generalization describing all and only the combinations for which the inverse construction is used.

(225)   The inverse construction is used when:

    a.   A = 1MIN, O = 2nd person (either MIN or AUG)

    b.   A = 3MIN, O = non-3MIN

Table 6.3: Occurrence of direct vs inverse construction patterns, simplified

O A	1MIN	2MIN	3MIN	1AUG	2AUG	3AUG
1MIN	—	Inv	Dir	?	Inv	Dir
2MIN	Dir	—	Dir	Dir	?	Dir
3MIN	Inv	Inv	Dir	Inv	Inv	Inv
1AUG	?	Dir	Dir	—	Dir	Dir
2AUG	Dir	?	Dir	Dir	—	Dir
3AUG	Dir	Dir	Dir	Dir	Dir	Dir

6.3.2   A DIRECT/INVERSE SPLIT

In this section I argue that this subset of the Äiwoo grammar shows a split based on the notions of "direct" and "inverse", that is, in a person marking system indexing two arguments at once, there are at least two possible constructions, and which construction is chosen depends on which of the arguments is highest on a so-called person hierarchy (Silverstein 1976, Zúñiga 2006, Jacques & Antonov 2014). This is something previously unrecognized in the available literature about this language. Once again, I propose that there is no need to stipulate arbitrary linear constraints to explain the behaviour of (this subsystem of) the verbal morphosyntax; in this case, an explanation of the attested patterns is available as effects related to person and number hierarchies (in section 6.4 I argue that even the hierarchies themselves, however descriptively useful, are not needed as a grammatical primitive). Furthermore, my analysis can

contribute to the typological knowledge of inverse systems, due to its interesting and complex interplay of person and number in Äiwoo, and the fact alone that this system is found in an Oceanic language (recent overviews such as Jacques & Antonov 2014 or Haude & Zúñiga 2016 do not mention Austronesian languages at all).

The terms "direct" and "inverse" are mostly known from the literature about languages of the Americas (especially the Algonquian family, but also e.g. Paraguayan Guaranì; Zubizarreta & Pancheva 2017), and Rgyalrongic ones (Jacques & Antonov 2014). In many of these languages, both arguments of a transitive sentences can be marked on the verb. Which argument is the A and which is the O, however, is not signalled by e.g. different series of affixes or different positions; rather, it has to be calculated on the basis of a hierarchy (cf. e.g. Silverstein 1976), which specifies which arguments are most likely to be an agent and which are not. On this hierarchy, 1st/2nd person are always ordered above 3rd person; the respective order of 1st and 2nd person can vary, with most languages having 1st ≫ 2nd but some – especially Algonquian varieties – showing 2nd ≫ 1st (Jacques & Antonov 2014). When the A argument is hierarchically higher than the O argument (226a), so-called direct morphology is used; this is often the unmarked case. On the contrary, when the A is lower than the O, an inverse marker is used (226b).

(226)   a. Direct: b. Inverse:

         A   ≫   O   A   ≫   O

         high ≫   low   high ≫   low

         (Figure from Zúñiga 2006: 24, Coon & Bale 2014: 87)

In the examples in (227) from Plains Cree, both arguments are marked in the same position and by the same morpheme (*ni-* 1, *-w* 3) regardless of their grammatical function. The only thing indicating which one is the A and which one is the O is the direct/inverse marker. In (227a) the verb bears the direct marker *ā*, meaning that the arguments must be interpreted with direct reference to the hierarchy: 1 ≫ 3, and therefore 1 must be the A. In (227b), on the other hand, the inverse marker *-ikw* signals that the hierarchy has to be read "in the opposite direction", so that 3 is now the A.

(227)   Plains Cree (Algonquian, Canada; Zúñiga 2006: 24, glosses adapted)

         a. *ni-wāpam-**ā**-w*   b. *ni-wāpam-**ikw**-w*
            1-see-**DIRECT**-3   1-see-**INV**-3
            'I see him/her'   '(S)he sees me'

I propose that the two constructions for person marking in undergoer voice in Äiwoo differ in terms of the notions of direct/inverse, along a 2 ≫ 1 ≫ 3 hierarchy. In fact, all the combinations of A and O in which Äiwoo uses what I called the inverse construction are such that the A is lower than the O on this hierarchy: 1MIN → 2MIN/AUG, and 3MIN → non-3MIN (cf. table 6.3 above). In order to capture the system correctly, another constraint is necessary: the inverse construction can only be used if the A is singular. In fact, all combinations in which the A is AUG (or 12MIN, as explained above), i.e. when it refers to more than one entity, will use the direct construction. In a sense, the Äiwoo system seems to employ two interacting hierarchies, i.e. a person one and a number one, where PL ≫ SG. In order to trigger the inverse construction, the A argument has to be low(er) on both hierarchies at once: it has to be low on the number hierarchy, so i cannot be plural; at the same time, it has to be lower than the O on the person hierarchy, so either 1 → 2 or 3 → non-3(MIN), but not 1 → 3. Another consideration to be made is that while the number hierarchy seems to take only the A argument into consideration (i.e. the number of the O is never a determining factor for any combination, possibly apart from 3MIN → 3AUG), the person hierarchy considers both arguments up against each other, as would be expected.

Having characterized the alternation between the two Äiwoo constructions as a direct/inverse split, I can now proceed to explain why I decide to analyze the morpheme *-gu* (cf. (222) above) not as 3MIN marker as previously claimed (Næss 2015b), but as a marker of inverse, as shown in (228a). This morpheme only appears in the inverse construction, specifically, in those cases where the A is lowest on both

the person and number hierarchy, namely 3MIN. In a way, *-gu* behaves as a sort of "placeholder". If it were not there, the resulting construction would be superficially identical to the direct one, and there would be no way to understand that the only marked argument would have to be interpreted as the O rather than as the A. This is illustrated in (228b): in a hypothetical variety of Äiwoo where *-gu* is not present, this sentence might have both readings – something that would be highly impractical, as it would lead to a great amount of ambiguity.

(228)   a. Actual Äiwoo:
            *i-togulo-**gu**-**mu**=waa*
            PFV-hit.UV-**INV**-**2MIN**=FUT
            '(S)he will hit you'

        b. Hypothetical ambiguous Äiwoo:
            *i-togulo-**mu**=waa*
            PFV-hit.UV-**2MIN**=FUT
            '(S)he will hit you'; 'You will hit him/her/it'

Given its behaviour as a placeholder, *-gu* has exactly the same function as inverse markers have in languages like Plains Cree: it signals that what one would expect to be the A argument – a hierarchically highly-ranked argument, e.g. a 2MIN – is in fact the O argument. A last advantage of analyzing *-gu* as an inverse marker as opposed to 3MIN is that it makes the system "cleaner", i.e. it provides a more economical analysis, following which 3MIN arguments are always marked by $\emptyset$ affixes, whereas *-gu* has a different function. Note that my analysis of this part of Äiwoo grammar as a direct/inverse system does not depend on on analyzing *-gu* as an inverse marker. Even if *-gu* does indeed mark 3MIN, the system is still split along the same lines of person and numbers; for non-canonical inverse systems where an inverse marker may be lacking, cf. Jacques & Antonov (2014), Haude & Zúñiga (2016), Arkadiev (2018).

A last point to be made in this respect is that the inverse construction in Äiwoo is not always marked by *-gu*. In the cases where the A is 1MIN and the O is 2nd person (cf. (222a-i/e) above), there is no marker of inverse, and both arguments are marked by enclitics (*-nee-mu/mi* 1MIN-2MIN/AUG). If *-gu* is analysed as an inverse marker (thereby not indexing an argument), then this is the only case where two arguments are marked at once on one verb.

In the next section I propose a formalization within the minimalist framework of the Äiwoo direct/inverse split, based on recent literature about complex agreement systems and hierarchy effects. I follow i.a. Preminger (2014), Harley & Ritter (2002), Rice (2000), Benveniste (1971) in assuming that what is covered by the term "3rd person" is actually not present *per se* in the syntax, but consists in the lack of person features; similarly, "singular" is nothing else than the lack of [PLURAL] features. Stated in non-formal terms, I argue that the Äiwoo verb can agree (in undergoer voice) with either only the A argument, only the O argument, or both at once. The direct construction surfaces in the former case, i.e. when the verb only agrees with the A. When the A is 3MIN, the verb cannot agree with it due to its lack of person and number features, and therefore it only agrees with the O argument; these are the cases where *-gu* is inserted. The 1MIN → 2MIN/AUG combinations, on the other hand, are the only ones in which the verb enters into an agreement relation with both arguments. Following other minimalist accounts of systems showing hierarchy effects (not only direct/inverse splits, but also e.g. differential object marking or person case constraint effects; see i.a. Wiltschko 2008, Béjar & Rezac 2009, Coon & Bale 2014, Preminger 2014, Anagnostopoulou 2017b, Bárány 2018), I argue that person and number hierarchies do not need to be postulated as a grammatical primitive, but are an epiphenomenon of how agreement works between the verb and the arguments.

6.4   FORMAL IMPLEMENTATION OF THE DIRECT/INVERSE SPLIT

6.4.1   THEORETICAL BACKGROUND AND ASSUMPTIONS

The core of my proposal for the Äiwoo direct/inverse split is based on (a slight extension of) the model of Cyclic Agree (Béjar & Rezac 2009). In such a model, φ-probes can be articulated, i.e. include more than one uninterpretable feature; if a probe has agreed with an argument but it still has uninterpretable

features left, it will try to look for a second argument to agree with, until exhaustion. Combined with the idea that features have a complex (geometric) internal structure, this makes it possible to model hierarchy effects without having to postulate a person hierarchy. In this section I go through all the assumptions on which my proposal rests, while the section 6.4.2 shows how I capture the Äiwoo phenomena in this model.

6.4.1.1   Geometrically complex φ-features

As Béjar & Rezac (2009) and a lot of subsequent work, I take φ-features to be not atomic but to have a complex inner structure, as argued for in Harley & Ritter (2002) (see also McGinnis 2005). The features playing a role in the Äiwoo system are – clearly – person and number, and I assume them to be organized along the geometry in (229) (this is a rather simplified version of the more complex geometry in Harley & Ritter 2002; cf. also Preminger 2014). Through the rest of the chapter I use the abbreviations π and # for, respectively, person and number.

(229)

```
                φ
              /   \
           (π)     (#)
            |       |
      [PARTICIPANT]  [PLURAL]
            |
       [ADDRESSEE]
```
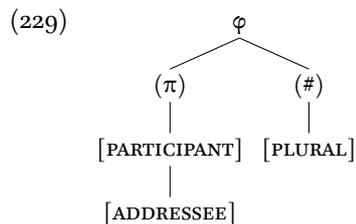
In this tree, every node entails its parent node, but not viceversa. This means that e.g. an argument bearing a [ADDRESSEE] feature (henceforth [ADDR]) will also bear a [PARTICIPANT] feature (henceforth [PART]). With this mechanism, a logically impossible combination such as "addressee, non-participant" is excluded. In this feature-geometrical model, 1st and 2nd person are distinguished from 3rd person by their [PART] feature; further, 2nd person is distinguished from 1st by its [ADDR] feature (in this system, person and number features are privative and not binary; for proposals with binary features, see e.g. Nevins 2011, Zubizarreta & Pancheva 2017). Therefore, 3rd person is simply nothing else than the lack of person features, in the same manner as singular is the lack of a [PLURAL] feature (henceforth [PL]). Note that the parenthesized (π) and (#) nodes in the tree in (229) are only notational devices, and are not to be intended to be proper features. A 3rd person argument (not only a pronoun then, but any DP) will therefore only carry the feature in the root node φ, i.e. what all other nominal constituents carry as well; in fact, this node in Harley & Ritter 2002 is called "referring expression" to make it clear that it is common to all nominals.

By giving the different persons a different featural make-up, the prediction is that 2nd person will behave (morphosyntactically) differently from 1st person, and that both will differ from 3rd person; this is precisely what is attested. The person hierarchy is then implemented as a result of these featural differences: 2nd person is the "hierarchically highest" one because it is more featurally specified than 1st, which in turn is more featurally specified than 3rd person, as illustrated in (230)[10].

(230)   2nd person > 1st person > 3rd person
              | |
           [PART]   [PART]
              |
           [ADDR]
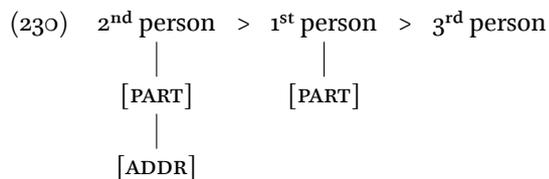
I do not propose an explicit featural decomposition of all Äiwoo pronouns. The main problem lies in how to model 12nd person, especially with respect to number. The fact that 12AUG patterns with other

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[10] A person hierarchy of the type 1 > 2 > 3 can be modelled by singling out 1st person with a [SPEAKER] feature, instead of an [ADDR] feature on 2nd person. Cf. Béjar & Rezac (2009) for more details.

AUG forms is not surprising; however, it is indeed surprising that 12MIN patterns with the AUG forms, since it does not otherwise (for example, it does not combine with the unit-augmented suffix *-le*). For present purposes, I assume that 12MIN does indeed bear a [PL] feature, even though at a descriptive level the Äiwoo system is better captured without reference to the categories "singular" and "plural" (see chapter 1, 1.6).

6.4.1.2   AGREEMENT CAN FAIL

In a traditional minimalistic framework (Chomsky 1995, 2000, 2001) agreement is an operation that happens between a *probe* and a *goal*. For my purposes here, it is sufficient to characterize the probe as the (verb-related) element that enters into an agreement relationship with a nominal argument, which then is the goal. One definition of agreement is given in (231), from Chomsky (2000: 122):

(231)   Matching is a relation that holds of a probe P and a goal G. Not every matching pair induces Agree. To do so, G must (at least) be in the domain D(P) of P and satisfy locality conditions. The simplest assumptions for the probe-goal system are shown [below:]

    a.   Matching is feature identity.
    b.   D(P) is the sister of P.
    c.   Locality reduces to "closest c-command."

Agreement happens in order to eliminate uninterpretable/unvalued features; if these reach the post-syntactic interfaces, the derivation crashes, and the sentence is ungrammatical. In a sense, agreement is not obligatory, as there is nothing in principle that forces it to happen, other than the ungrammaticality resulting from its not taking place (this is, of course, a rather distorted sense of "not obligatory", since the lack of this non-obligatory operation will lead to a derivational crash).

In more recent work (see e.g. Preminger 2009, 2014 and references therein), however, agreement is conceived as an obligatory, but fallible operation. This means that given the existence of an appropriate configuration (i.e. the presence of a probe and of an appropriate goal[11]), agreement will always (obligatorily) be attempted. However, if agreement does not succeed – e.g. if the probe and the goal do not have compatible pairs of features – this does not cause ungrammaticality. In other words, a probe will always try to agree with a goal (or more goals, cf. below) "as much as possible", but will not cause the derivation to crash if it does not succeed. In Deal's (2015) terminology, a probe will have to "interact" with a possible goal, but it does not need to be "satisfied" by it, and it might keep searching further for other goals. This notion of agreement as a fallible operation is at the core of the model of Cyclic Agree. In the next section I expose more precisely how and when a probe will be able to agree with more than one goal; see at the end of the next section why fallible agreement is not to be considered in contradiction with the non-fallibility of argument licensing, and more details about this in section 6.4.2.6.

6.4.1.3   CYCLIC AGREE

The Cyclic Agree model (Béjar & Rezac 2009), in a slightly extended version to account not only for person but also number effects, is at the basis of my proposal for the Äiwoo system. The first ingredient of this model is the idea that probes are specified as for what they look for (Preminger 2014 uses the term *relativized probing*, where "relativized" is to be intended in the sense of Relativized Minimality, cf. Rizzi 1990). This is a relatively traditional assumption, for example when applied to *wh*-movement. The *wh*-probe on C^0 will only attract a DP carrying a <+*wh*>-feature, and will skip any constituent that does not

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[11] Note that I do not include "...*in the probe's c-command domain*": in a cyclic model of syntax such as the mainstream minimalist one, where syntactic structure is built bottom-up, at the time that the probe is merged there is nothing in the structure it does not c-command (apart, of course, from the node that dominates both the probe and its sister); this precisation therefore is strictly speaking redundant (cf. Preminger 2014 for details).

carry it. This is illustrated in the sentences in (232), from Preminger (2014: 40–41): especially in (232b,c), C^0 must skip closer possible goals to attract exactly the one carrying the named feature.

(232) a. [C^0 [who]$_{<+wh>}$ gave [this dish] to [Bob]]

b. [C^0 [John] gave [what]$_{<+wh>}$ to [Bob]]

c. [C^0 [John] gave [this dish] to [who]$_{<+wh>}$]

In Béjar & Rezac (2009), the same line of reasoning applies to person: probes can therefore be specified as looking for a [φ] feature, or e.g. an [ADDR] feature. A probe carrying an uninterpretable feature [uφ] (i.e. specified as looking for nominal arguments) will only agree with a constituent carrying that feature (and therefore skip PPs, VPs, etc.). A probe specified as looking for e.g. [uPART] will be "pickier": it will not look for and try to agree with any nominal argument, but only 1st/2nd person ones, and it will skip 3rd person arguments. This applies as well to all other features ([uADDR], [uPL], etc.).

At this point the featural geometry from Harley & Ritter (2002) is highly relevant. As presented in section 6.4.1.1, person features are in an entailment relationship between each other: the presence of [ADDR] entails the presence of [PART], which entails the presence of [φ] (recall that this feature is taken to be common to all nominal arguments, be they pronouns or DPs; I will henceforth consistently omit it from representations). A probe carrying an unvalued feature [uADDR] will also automatically carry [uPART] (and [uφ]), since the former cannot exist without the latter. With respect to person features then, to determine what feature a given probe is specified as looking for equals to determine how *articulated* the probe is: from a "flat" one as in (233a), to a fully articulated one as in (233c).

(233) a. $φ^0$ b. $φ^0$ c. $φ^0$
           ([uφ])   [uPART]   [uPART]
                                                             [uADDR]

Note that these differences do not put a restriction onto what kind of arguments a probe will be able to agree with, due to the geometrical structure of person features. A flat probe will be able to agree with a 1st/2nd person argument, because these will carry [φ] anyway. On the other hand, as mentioned earlier I take "3rd person agreement" to be really the lack of (successful) person agreement, resulting in default morphology.

The final ingredient of the Cyclic Agree model is what gives it its name to begin with, i.e. cyclicity. Given that probes can be articulated and carry more than one unvalued feature, in principle they could/should be able to agree with more than one argument. This is achieved through the "cyclic expansion of the search space" (Béjar & Rezac 2009: 48). First, a probe will try to agree with its closest possible goal. Then, if the probe is a flat one, the operation is finished; an articulated probe, however, depending on what it agreed with, might still have uninterpretable features left. If this is the case, the probe will start a second cycle of agree, searching for a new goal, and (possibly) agreeing again; this repeats until the probe has no more uninterpretable features left (until it is completely *satisfied*, cf. Deal 2015).

This is illustrated in the tree in (234), for a sentence such as *I VERB you*[12]. First, the probe finds the closest argument (the subject, i.e. *I*) and gets its [uPART] feature valued; this is the first cycle, notated with a one-lined arrow and strike-through. However, at this point the probe still has an uninterpretable

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[12] For simplicity of exposition, I deviate here somewhat from Béjar & Rezac (2009). In their model, the agreement probe is in *v*, i.e. between the subject and the object. When the probe is merged, the first argument to be checked is the only one which is there at that point, i.e. the object. Later, if the probe still has uninterpretable features, it will agree upward (or its features will percolate up to the *vP* level, and then agree downward) with the subject. They motivate putting the probe in *v* on empirical basis; however, for my purpose here it does not make a relevant difference; see the original paper for a detailed argumentation. Another difference between my implementation and the original one is how inverse combination of arguments are handled. In Béjar & Rezac (2009), if the O is more featurally specified than the A, the probe will not be able to agree with the A at all, and as a repair strategy, an extra probe may be inserted. In my system, on the other hand, inverse combinations are those in which the probe agrees with both arguments, as opposed to only the A.

feature [uADDR]; therefore, a new cycle starts, notated with a double-lined arrow and strike-through. In the second cycle, the probe checks for the next closest goal (i.e. it expands its search space), and finds the object. Now, the probe can get its last feature valued, because the object carries an ADDR feature; the probe has been now completely satisfied. If the arguments were in the opposite order (*you VERB me*), the second cycle would never have started, because the probe would have had all of its features checked by the first argument it would have found, i.e. *you*.

(234)

φ^0

[uPART]
[uADDR]

I

[PART]

You

[PART]
[ADDR]
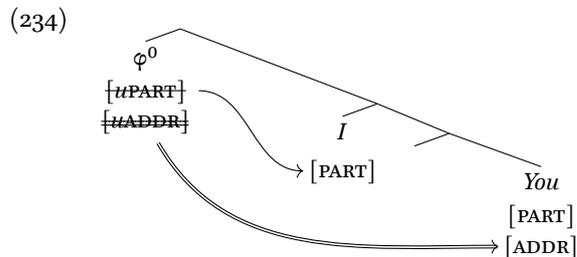
Note that the combination of arguments in this tree, i.e. *I VERB you*, is exactly the one where, in Äiwoo, both arguments are marked by clitics on the verb (1(MIN) → 2, cf. section 6.3); in the opposite, *you VERB me* (2 → 1), only the A argument is marked by a clitic (how number features come into play will be the focus of the next section). The composition of the probe and the mechanism of how agreement works provide a neat explanation of effects relating to person hierarchies: a verb may behave differently (e.g. show different morphology) depending on whether the first argument it agrees with is more or less featurally specified than a possible second one. A timely question is then why some languages show person hierarchy effects, while others do not: in the Cyclic Agree model, this depends once again on the articulation of the probe. A more articulated probe will be "pickier", as it will take more featurally specified arguments to satisfy it completely and stop it from probing further[13]. A language where the agreement probe is a "flat" one (i.e. looking only for a nominal argument, carrying a [φ] feature), on the other hand, will show no person hierarchy effects because the probe will always be completely satisfied by the first argument it finds, whatever be its featural make-up.

Note that although agreement is seen here as a fallible operation, this should be held separate from the need of arguments to be licensed, which can in fact crash the derivation if it fails. Moreover, certain types of arguments (e.g. 1st/2nd person arguments) have special licensing needs, and this is at the basis of well-studied phenomena such as licensing by Case/case and, more relevant to Äiwoo, the Person Licensing Condition (Béjar & Rezac 2003: 53), whereby "an interpretable 1st/2nd feature must be licensed by entering into an Agree relation with an appropriate functional category" (see Preminger 2019: 7 for a more nuanced formulation). In Äiwoo, I exposed in section 6.2.1 how 1st/2nd person arguments are cliticized as proclitics on the verb through previous agreement with a φ-probe; this cliticization process constitutes a way to license these arguments, thereby satisfying the Person Licensing Condition. I will take this special licensing need of 1st/2nd person arguments as to explain why and how they are cliticized to the verb in certain environments, and appear as independent pronouns in other environments: when the agreeing probe has not interacted with them (thereby triggering their cliticization) they have to be licensed in another way, specifically, by moving to specFP (see section 6.4.2.6).

6.4.1.4   INTERACTION OF PERSON AND NUMBER: EXTENDING BÉJAR & REZAC (2009)

Although the model proposed by Béjar & Rezac (2009) gives a neat explanation of person hierarchy effects, it does not cover phenomena related to number. In the Äiwoo data, however, number does play an important role, as showed in section 6.3. Therefore, in order to describe and explain the Äiwoo

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[13] Of course, languages with a fully articulated probe as in (234) will not *require* each sentence to have a 2nd person argument. If all arguments in a sentence are 3rd person, the probe will indeed be left with two unvalued features. However, given the fact that agreement is seen as a fallible operation, this does not cause any grammaticality problem.

phenomena correctly, one must extend the model, and develop a proposal about how exactly it is that person and number features interact.

A popular approach to person and number features is to keep them separated, as distinct probes that interact with their syntactic environment each on its own (Anagnostopoulou 2003, Béjar 2003, Béjar & Rezac 2003). This separation has proven fruitful to capture a number of seemingly unrelated phenomena, from the person case constraint, to Agent Focus construction in Mayan languages, to unergative verbs in Basque (Preminger 2014 and references therein). One clear example of their independence is the so-called "two-and-a-half" agreement pattern (Baker 2011) found in a number of languages and shown in (235) with Nahuatl. Here, the verb agrees with the subject and the indirect object in both person and number (boldfaced), but it agrees with the direct object only in number (underlined).

(235)   Nahuatl (Uto-Aztecan, Mexico; Baker 2011: 883)
         xi-nēch-<u>im</u>-maca   *huēhuèxōlô*
         2SG.SUBJ.IMP-1SG.OBJ-<u>PL</u>-give   turkeys
         '(You) give me some turkeys.'

Clearly, if one can have agreement for number but not person (or viceversa), it is difficult to avoid Coon & Bale's (2014: 85) conclusion that "φ-agreement [...] is not an all-or-nothing affair". This asymmetry between the two is exploited in Preminger (2014) to argue that there is a deeper syntactic difference between person and number and their relation to arguments licensing. As stated in the previous section, I take the Person Licensing Condition to be active in Äiwoo: in brief, 1st/2nd person arguments must be licensed, and this can happen via clitic doubling, triggered by agreement between a φ-probe and the argument in question. In Preminger (2014), however, φ-probing is split between person and number features by using two independent heads, π^0 and $\#^0$, merged in that order; moreover, these heads have slightly different properties. Preminger argues that π^0, when agreeing with an argument, will (be able to) trigger clitic doubling of that argument, whereas $\#^0$ cannot[14]; I follow Preminger for my proposal as to what #- and π-probes can and cannot do.

However fruitful it may be to keep person and number (syntactically) apart from each other, certain languages present highly complex interactions of person and number features, so that the separating approach might prove unhelpful. This has been argued to be the case i.a. for the Algonquian languages and varieties Mi'gmaq (Coon & Bale 2014), Cheyenne (Despić et al. 2017, 2019), Nishnaabemwin (Thivierge 2017) and Ojibwe (Bhatia et al. 2018). The proposals for these have used as one of their ingredients the concept of "fused probes". The two probes π^0 and $\#^0$ search separately and for different things, but they determine jointly whether the complex probe fails to agree or not: in particular, a failure in agreeing for one of the two sub-probes results in a failure in agreeing for the complex probe as well (see Coon & Bale 2014 for details; see also Coon & Keine in prep. and Bárány 2018 for more details about fused probes and their workings). The complex probe stops looking for new targets to agree with only when both sub-probes are completely satisfied; in other words, the result of the complex probe corresponds to the logical conjunction of the results of the sub-probes.

Going back to the Äiwoo data, it seems indeed that a fused probe solution is necessary. If number and person features were completely separated, one would not predict 1MIN to behave differently from 1AUG, or 3MIN from 3AUG; however, the MIN forms trigger the inverse construction, whereas the AUG ones block it. In fact, I will argue that the best way to model the Äiwoo phenomena is to let the two sub-probes jointly determine not the failure of the complex probe, as in Coon & Bale (2014), but its *success*: as soon as *either* sub-probe is completely satisfied, the whole complex probe stops searching for new targets to agree with; as opposed to Coon & Bale's 2014 model, the result of the complex probe corresponds to the logical *disjunction* of the results of the sub-probes. A more detailed exposition of this specific mechanic and of the motivation for using it is given in section 6.4.2.

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[14] As Preminger notes, this was already implicitly assumed in Béjar & Rezac's (2003) account of the person case constraint.

6.4.1.5   Position of the Äiwoo probe

In Béjar & Rezac's (2009) model, the agreeing probe is placed between the external and the internal argument, i.e. in v^0. In this manner, the probe examines the object first, since it is the only present argument when the probe is merged; later, when the subject is merged too, the probe will examine it too (provided that it has not been completely satisfied; see the original paper for details about the implementation and the direction of agreement). In Äiwoo, however, having the probe interact with the O argument first would give wrong predictions, because which construction is used (direct or inverse) is more strongly constrained by the A argument's feature than the O's. For example, if the probe finds a 2nd person O first, the π probe would check all its features with it, regardless of the A's features (since it has not been merged yet). Later, if a 1AUG or even 3AUG A is merged, the probe would somehow have to "un-agree" with the O (given that 1AUG and 3AUG As trigger the direct construction, cf. section 6.3). Instead, the probe must interact with the A argument first, and only probe further down to the O if the A does not satisfy completely either of the π and # sub-probes, that is, if the A is neither 2nd person nor plural (i.e. 1MIN or 3MIN, the only types of A that can potentially trigger the inverse construction).

As in AV (cf. section 6.2.1), the φ-probe must be above DirP/AspP, given where the arguments are cliticized (i.e. to the left of aspect marker in AV and to the right of the directional suffixes in UV). At the same time, as illustrated in (211) for AV, it must be below FP, given that specFP is where the O argument must move if not agreed with by the probe; this excludes the possibility that the probe is in T^0 (for a discussion of agreement probes lower than TP or in (Outer)AspP, cf. Bliss et al. 2010). I therefore choose to assume the structure in (236).

(236)   (TopP » TP » CliticPs ») FP » φP » AspP » DirP » VoiceP » ...

If the probe has to interact with the A first and only afterward with the O, as argued for above, this means that the A must be closer to the probe, i.e. the A must dominate the O. This is an argument against adopting for Äiwoo Erlewine's (2018) model of symmetrical voice, where in UV the O moves across the A (to an outer specifier of VoiceP), as discussed in chapter 5. If this was the case, then the O would dominate the A instead of the other way around, and the probe would therefore interact with the O first, giving the wrong results (cf. the discussion above). Again as discussed in chapter 5, if the O stays in situ in UV, it is then an open question how exactly the movement to specFP happens.

At this point, we have seen two different person marking systems: a relatively simpler one in actor voice and intransitives, and a more complex one in undergoer voice. I argue that this difference can follow from independent assumptions one already has to make: (i) the different voices being modelled as different $Voice^0$s, and (ii) the fact that heads are individually specified for how they linearize. First, I assume with Aldridge (2008), Legate (2014) that the $Voice_{AV}{}^0$ merged in actor voice is different from the $Voice_{UV}{}^0$ merged in undergoer voice (see chapter 5 for more details and arguments about this). Second, in chapter 5 I have also followed Harley's (2013c) assumption that head-movement is not uniformly to the left, but that the linearization properties are specific of each head (i.e. head movement can create both suffixes and prefixes, *contra* Baker 1988, Kayne 1994, Julien 2002, 2007). Being two different heads, it is not surprising that they have different properties: φ_{UV}P is more articulated, following the system presented above, whereas φ_{AV}P is a "flat" one, agreeing with all nominals (however see section 6.2.1 above for details about the 1st/2nd vs 3rd person split in actor voice and intransitives). Through the rest of the chapter I will omit the voice specification on the φ-probe for the sake of simplicity.

6.4.2   Derivation of the Äiwoo inverse split

6.4.2.1   Summary of the analysis

At this point a very brief review of the data my proposal aims to model is in order. I use the two hierarchies in (237) as a descriptive tool.

(237)   a. Person: 2 ≫ 1 ≫ 3   b. Number: PL ≫ SG

In order to trigger the inverse construction, the A argument must be low on *both* hierarchies at once, i.e. neither 2nd person nor plural, therefore only 1MIN or 3MIN. The O must be higher than the A on at least one of the hierarchies. Therefore, the combinations of arguments that trigger the inverse construction are 1MIN → 2MIN/AUG, and 3MIN → non-3MIN.

Further, I assume that the pronominal markers of 1st/2nd are the result of clitic doubling triggered by agreement between the probe and the argument in question; I follow Nevins's (2011) and Preminger's (2014) implementation of clitic doubling, cf. footnote 6, section 6.2.1. If an argument is not cliticized, it must have never been agreed with: therefore, a desideratum of the analysis is that, in the direct construction, the probe never agrees with the O argument.

Finally, the proposed analysis must implement the fact that an A which is ranked high on either hierarchy (i.e. either 2nd person or plural) will automatically trigger the direct construction. To account for this, I propose that for a complex φ-probe consisting of two fused sub-probes π and #, whenever either of them is completely satisfied (i.e. without any uninterpretable feature left) the entire complex probe will stop searching for new goals. This is a deviation from what is proposed in Coon & Bale (2014) (cf. section 6.4.1.4), for which I will argue more in detail below. With these considerations in place, I proceed to show the derivation of different combinations of pronouns, both direct and inverse ones.

6.4.2.2   2 → X: DIRECT

If the A is 2nd person, as in (238), the construction used will be the direct one, regardless of the φ-features of the O. This follows from the standard Cyclic Agree model: 2nd person is the most featurally specified one, and satisfies therefore the π-probe completely. The tree in (238) illustrates the derivation. First, the π probe interacts with the closest argument (the A), and is completely satisfied by it. Since the A argument has been person-licensed by π, it is cliticized to the probe head, and is rendered invisibile to further probing (if any were to happen), as in Preminger (2014). The O argument has not been licensed: how it will end up as an independent pronoun in the post-clitic position (i.e. specFP; cf. chapter 5) will be the focus of section 6.4.2.6.

(238)   *i-togulo-**mu/mi**=waa*   *ijii*
        PFV-hit.UV-**2MIN/AUG**=FUT   3AUG
        'You will hit them'
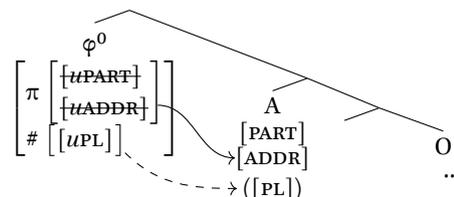
In this case, the # probe may or may not agree with the A (depending on its number), as represented with a dashed arrow; crucially, it will never interact with the O. The fact that the π probe is completely satisfied halts the search of the complex φ-probe altogether. If this were not the case, in fact, a 2MIN A would allow the # probe to agree with a possible AUG O argument. As for this exact combination (2MIN → XAUG), one might solve the problem by adopting an assumption from Preminger (2014: see chapter 4). Consider a situation where the π probe has cliticized one argument and the # probe has agreed with a different argument: according to Preminger, in this context the only visible result will be the doubled clitic, because spelling-out a pronominal head will take precedence over the spelling-out of agreed-with number feature. This assumption is independently necessary to rule out agreement with the O's number in any MIN → AUG combination. However, letting the φ-probe keep searching after one of the sub-probes has been completely satisfied would bring more serious problems for combinations with a 1AUG/3AUG A, to which I turn now.

6.4.2.3 1AUG → 2: DIRECT

In these combinations, the A is lower than the O on the person hierarchy ($1 \ll 2$); however, it is ranked high on the number hierarchy, being plural. A central desideratum of the model is that plural As will block the inverse construction completely. Once again, this is achievable by letting the first sub-probe to be satisfied completely (either π or #) halt the complex probe from searching further. In the derivation in (239), first the π probe checks its [uPART] feature with the A argument, and the # probe checks its [uPL] features with it; the A, having been agreed with, is cliticized to the probe head.

(239) *i-togulo-**ngopu**=waa* *iumu/imi*
     PFV-hit.UV-**1AUG**=FUT 2MIN/2AUG
     'We will hit you'

$$
\begin{array}{l}
\varphi^0 \\
\left[\begin{array}{l}
\pi \left[\begin{array}{l}[u\text{PART}]\\{}[u\text{ADDR}]\end{array}\right] \\
\# \,[u\text{PL}]
\end{array}\right]
\quad
\begin{array}{l}
\text{A} \\
\to[\text{PART}] \\
\to[\text{PL}]
\end{array}
\quad
\begin{array}{l}
\text{O} \\
[\text{PART}] \\
[\text{ADDR}] \\
([\text{PL}])
\end{array}
\end{array}
$$
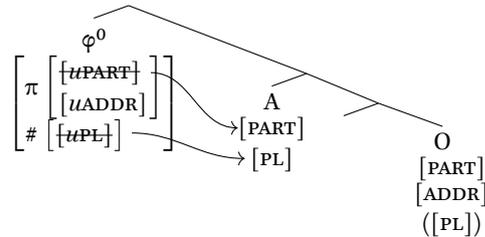
At this point, if the probing were to proceed, the π probe – which is not completely satisfied, as it still has an uninterpretable [uADDR] feature – would interact with the O, check its features, and cliticize it as well. However, this is not what is attested. Therefore, it is necessary to have means to halt the probing in the presence of a plural A: crucially, the π probe is not completely satisfied, but the # probe is. This is the reason why I assume that both sub-probes jointly determine the *success* of the complex probe: when either is satisfied, the whole probe stops searching for new goals. The derivation presented here applies to all combinations where the A is plural, thereby satisfying completely the # probe and halting the search, regardless of the φ-features of the O. In the next sections, I present derivations for the inverse cases, where the A is neither 2nd person nor plural, thereby not satisfying completely any of the two sub-probes, and letting the φ-probe interact with the O.

6.4.2.4 1MIN → 2: INVERSE

In the first series of combinations triggering the inverse construction, the A is 1MIN and the O is 2nd person, either MIN or AUG. The premise is still as above, i.e. that the complex φ-probe only halts when either one of its sub-probes is satisfied completely. In the 1MIN → 2 case, first the probe checks its [uPART] feature with the A argument; having been person-licensed, the A is cliticized to the probe head and removed as an intervener from further probing, as in the previous cases; this is marked in (240) with the single-lined arrow and strike-through. At this point however, neither the π probe nor the # probe have been satisfied completely: both still have uninterpretable features. Therefore, a second agreement cycle is started (notated with the double-lined arrow and strike-through). Now, the π probe checks its [uADDR] feature with the O, and the # probe might check its [uPL] feature with the O if this is plural (this possible agreement is notated with the dashed double-lined arrow). Since the O has had its person features licensed by agreeing with the probe, it cliticizes in exactly the same way as the A; therefore, the verb is marked by two clitics.

(240) *i-togulo-**nee-mu/mi**=waa*
     PFV-hit.UV-**1MIN-2MIN/AUG**=FUT
     'I will hit you'

$$
\begin{array}{l}
\varphi^0 \\
\left[\begin{array}{l}
\pi \left[\begin{array}{l}[u\text{PART}]\\{}[\cancel{u\text{ADDR}}]\end{array}\right] \\
\# \,[u\text{PL}]
\end{array}\right]
\quad
\begin{array}{l}
\text{A} \\
\to[\text{PART}]
\end{array}
\quad
\begin{array}{l}
\text{O} \\
[\text{PART}] \\
[\text{ADDR}] \\
([\text{PL}])
\end{array}
\end{array}
$$
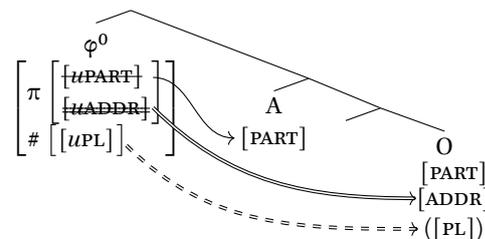
If the O was not more featurally specified than the A (e.g. if it was 3rd person instead of 2nd), the π probe would not have found anything in the second agreement cycle. If the combination was 1MIN → 3AUG, however, one might expect to see morphology spelling out agreement between the # probe and the O's

number. To explain the lack of this agreement, recall from section 6.4.2.2 that whenever the π probe has cliticized one argument and the # probe has agreed with another one, the only visible result will be the doubled clitic; the number features of the O will not be spelled-out. In addition to Preminger's (2014) argument about "precedence" (a doubled clitic will take precedence over the spell-out of agreed with features), within a Distributed Morphology framework one could hypothesize a post-syntactic operation of Impoverishment that targets the φ-probe whenever the different sub-probes have had their features checked by two different arguments, deleting then the entire # probe (for application of Impoverishment rules in inverse systems and their timing, whether exclusively post-syntactic or amidst the narrow-syntactic operations, see Keine 2010, Bárány 2018). However, it would not be entirely clear why the case of two (partially) independent sub-probes being checked by two different arguments would have to be more problematic (and therefore the target of an Impoverishment rule) than a single sub-probe agreeing with two arguments, as in (240).

6.4.2.5   3MIN → NON-3: INVERSE

Finally, I present the derivation of inverse combinations in which the A is 3MIN and the O is not. At the first agreement cycle, neither sub-probe is able to agree with anything, since the closest argument does not bear any person or number features; this is marked in (241) by the single-lined arrow with the superimposed lightning symbol. Since neither sub-probes are completely satisfied, the second agreement cycle starts, notated with the double-lined arrow and strike-through; at this point, the O is person-licensed and cliticized.

(241)   *i-togulo-**gu**-**mu**=waa*
         PFV-hit.UV-**INV**-**2MIN**=FUT
         '(S)he will hit you'
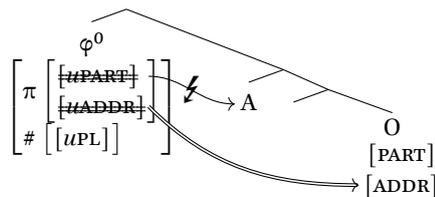
It is relevant at this point to remind the reader that the morpheme *-gu* can in fact co-occur with overt DPs, similarly to 3rd person markers, and differently from the 1st/2nd person clitics. A sentence in which the 3MIN A is an (overt) DP will still show *-gu* on the verb if the O is non-3MIN, appearing therefore in combination with an object clitic, as in (201), repeated here as (242), where *-gu* co-occurs with the A DP *tumomu* 'your father'. This behaviour follows from the analysis of *-gu* as a marker of "inverse": in this particular model, what "inverse" means is that the verb signals that it has *not* managed to agree with anything on its first cycle, but it has managed to agree with something at its second cycle. The morpheme *-gu* is then inserted to mark an "unexpected" scenario, where the expected thing would be that the verb either finds something to agree with at its first cycle (i.e. the direct combinations), or nothing at all (the 3MIN → 3MIN combination).

(242)   *ku-wâ-lile-â-**gu**-mu*   *tumo-mu=wâ*   (Marriage 27)
         IPFV-CAUS-marry-UV-**INV**-**2MIN**   father-2MIN=DEIC.DIST
         'Your father would arrange your marriage' (lit. 'make you marry')

I assume therefore that the morpheme *-gu* is the spell-out of the φ⁰ head itself whenever this has failed the first agreement cycle, but succeeded the second one. I have to posit that the φ-probe somehow "keeps track" of its failures and successes: if it fails at the first attempt, it will receive a diacritic. Then, if the second agreement cycle succeeds, the φ⁰ head carrying this diacritic is spelled out as *-gu*. Note that if the second agreement cycle does not succeed either – i.e. in the case of 3MIN → 3MIN –, the verb only gets default agreement (i.e. the -∅ suffix triggering the *n*-initial allomorph of a following clitic, cf. section 6.3 above). The spell-out rule inserting *-gu* must then not only be triggered by φ⁰ not agreeing with anything at the first cycle, but it must also make reference to whether the φ⁰ has agreed with anything else at the *second* cycle or not. This spell-out rule does not need to consider whether the second cycle agreement

has generated a doubled clitic or not: in fact, *-gu* is inserted also before the plural agreement marker *-i* (again, I keep here the '3AUG' gloss for clarity), as shown in (243). Recall from section 6.4.2.4 that [PL] feature on the # probe will only be spelled-out if there has been no clitic doubling, which is precisely the case for the combination 3MIN → 3AUG.

(243)   *i-togulo-**gu**-**i**=laa*
        PFV-hit.UV-**INV**-**3AUG**=FUT
        '(S)he will hit them'
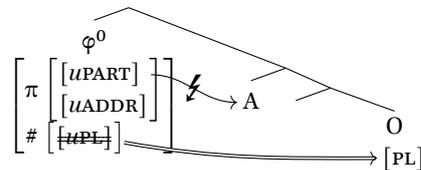
The account for *-gu* presented here is admittedly suboptimal. However, work on complex agreement systems has attested the presence of so-called *second-cycle effects* (Béjar 2003: 80; Béjar & Rezac 2009: 51): how a given agreeing head is spelled out morphologically may differ depending on whether agreement has happened at the first attempt (cycle) or at a following one[15]. When a probe attempts agreement and fails, Béjar (2003: 79) mentions explicitly the possibility that the probe in question will be marked by a diacritic, i.e. a way of "keeping track" of failed agreements, as I suggest above. This is documented i.a. in Georgian and Karok, an isolate language of California (Béjar 2003). In Äiwoo, the marker *-gu* might be related to this kind of effect, since its presence is conditioned by agreeing failing at the first cycle, but succeeding at the second one. Another interesting data point is the allomorphic variation in the 1MIN: the form *-nee* is only available in the inverse 1MIN → 2 combinations; in all other cases, a 1MIN A is marked by *-no*. This allomorphy might also be a result of the syntax keeping track of when agreement happens with which argument.

### 6.4.2.6   THE DESTINY OF UN-AGREED WITH O ARGUMENTS: SPECFP

The last question to be answered is how (pronominal) O arguments that have not been agreed with by the probe end up in the post-verbal position, identified in chapter 5 to be the specifier of a functional projection FP above AspP (and above the φ-probe) and below the post-verbal clitics. I argue that accounting for this does not any additional stipulation, but follows directly from the series of movements building the Äiwoo clause, as described in chapter 5. When F^0 is merged, all the possible agreement between the arguments and the φ-probe has happened. At this point, either the O has been agreed with, and cliticized to the $φ^0$ head, or it has not, and it is in situ. F^0 scans its c-command domain to look for the O argument, and if the O is still in situ (i.e. it has not been agreed with), F^0 attracts to its specifier via an EPP-like feature. Recall that this movement is independently needed to explain the position of O DPs in all voices; however, how exactly the F^0 locates and attracts specifically the O is an open question.

Now, the independently motivated Person Licensing Condition (see section 6.4.1.3 above) imposes that $1^{st}/2^{nd}$ person arguments cannot go unlicensed. If the π sub-probe inside the φ-probe never agrees with the ($1^{st}/2^{nd}$ person) O argument, its π-features will in fact be unlicensed. I have therefore to assume that the movement to specFP represents a last-resort strategy to license these features; note that F^0 must be assumed to have strict co-selectional requirements (it can only take φP as its complement), and cannot be merged at any given point in the derivation just to license person features (something which would overpredict). If the O argument is never agreed with, the whole derivation is illustrated in a simplified manner in (244), adapted from (211) above: after the φ-probe has completed its agreement cycle(s), the O will move to specFP (cf. the discussion above about this being a theoretically problematic

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[15] In Béjar & Rezac (2009) these second-cycle effects are traced back to the fact that in an inverse combination, what agrees with the O and what agrees with the A are in fact two different probes, the second of which (the one agreeing with the A, in their model) has been inserted extraordinarily as a repair strategy. In my proposal I do not adopt this insertion of an extra probe, so the implementation of second-cycle effects would necessarily have to be different. I do not propose an explicit implementation for this, limiting myself to highlighting how *-gu* might be related to this family of effects.

movement, with no proper account); later, the whole φP – possibly containing an A DP, or a cliticized A pronoun – will front, and later again the O will be fronted to the clause-initial position.

(244)

O   φP

Clitics   FP

t_O φP

φ⁰   AspP

Asp⁰   φ⁰(= A)   ...   ...

... t_O
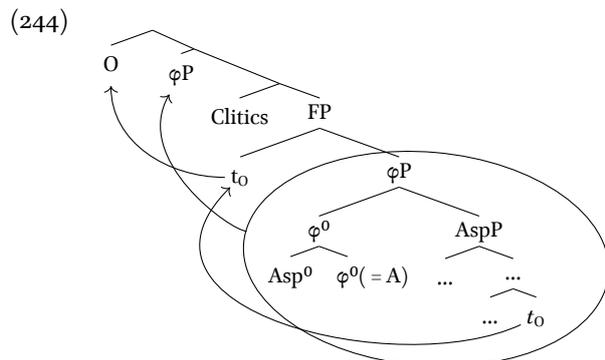
As opposed to this, if the O has in fact been agreed with and it has cliticized onto the verb (i.e. in the inverse construction), one can imagine two solutions. The first possible account is that the cliticization process has taken away all that there was of an O: there is simply nothing left in the original position for F⁰ to attract upward. Another possibility is based on seeing cliticization as clitic doubling of a pro-like null element (see Preminger 2019: 14). In this case, the cliticization process triggered by agreement between the probe and the O has rendered the O invisible to further operations (as proposed accounting for the person case constraint in Anagnostopoulou 2003, Béjar & Rezac 2003, Preminger 2014, Coon & Keine in prep.), and therefore F⁰ cannot attract to its specifier; however, since the O is null, it will not be visible. If this approach is pursued, then it is in fact hard do determine whether F⁰ has or has not attracted the O up to its specifier, since this would be null anyway.

6.4.2.7   SUMMARY

Through section 6.4 I have proposed a formal analysis of a complex direct/inverse split in Äiwoo, based on the model of Cyclic Agree (Béjar & Rezac 2009). This split does not only depend on the person features of the A and the O, but on their number as well; due to this interweaving of (descriptive) hierarchies, the model had to be extended slightly in order to account for the number effects. I have therefore exploited the notion of "fused probes" (Coon & Bale 2014): the person and the number probe are independent and probe separately, but they are fused on one complex probe, and they determine this complex probe's result conjunctly. Deviating from Coon & Bale (2014), I proposed that while only the person probe can cliticize arguments (as in Preminger 2014), both the person and the number probe can halt the search by the entire complex probe in case either of them has had all of its features checked, i.e. the two sub-probes determine the complex probe's results *disjunctly*. This explains why all plural A arguments will block the inverse construction: since the number probe will have its only feature ($[u\text{PL}]$) checked by a plural A argument, it will be completely satisfied, and it will therefore halt the search, thereby preventing the O from being interacted with by the complex probe. Lastly, in order to account for the distribution of the inverse marker *-gu*, I have to assume that the (complex) probe can somehow "keep track" of when it agrees with arguments: *-gu* surfaces in all and only the cases where the complex probe has failed the first cycle (i.e. not agreeing with anything), but succeded the second one.

Finally, to trace back the discussion to the issue of the distinction between templatic and layered morphology, I have argued that the distribution of pronominal markers in undergoer voice does not need to be captured by exploiting arbitrary linear stipulations. On the contrary, the presence of two different patterns can be accounted for by analyzing them as following a direct/inverse split. Although it is possible to describe this split with the help of two interwoven hierarchies (person and number), *á la* Silverstein (1976), I propose a syntactic implementation in which the hierarchies are epiphenomenal, and the split emerges from the interaction of the morphosyntactic processes that build the verbal form, (i.e. how agreement works), and how person and number features are internally structured.

Polysynthesis in the Pacific? 7

7.1 WHAT IS A POLYSYNTHETIC LANGUAGE, AND COULD ÄIWOO BE ONE?

The previous 6 chapters of this thesis have been devoted to an in-depth investigation of the rather complex verbal morphosyntax of Äiwoo. Now, the languages known *par excellence* as morphosyntactically complex are the so-called polysynthetic ones, often characterized precisely in terms of this complexity. However, the phenomenon of polysynthesis (if it is a unitary phenomenon at all) seems to eschew strict definitions, and most scholars attempting at one encounter one of two problems. On one side, Baker (1996) gives a categorical definition of polysynthesis within the generative framework; however, his categorization excludes several languages that are often analysed as polysynthetic, such as e.g. Yimas (Papua New Guinea; Foley 2017b), several Athapaskan languages or Navajo (Baker 1996: 18). On the other side, Evans & Sasse (2002: 3) relax the definition from a categorical one to a prototype-based one:

> [...] [A] prototypical polysynthetic language is one in which it is possible, in a single word, to use processes of morphological composition to encode information about both the predicate and all its arguments, for all major clause types (i.e. one-, two- and three- place predicates, basic and derived), to a level of specificity allowing this word to serve alone as a free-standing utterance without reliance on context.

Despite the apparent lack of precise definitions of polysynthesis, several scholars appear to have at least an intuitive understandig of it: Watanabe (2017: 634) writes about "that polysynthetic 'feel'"; Baker (1996: 8) tries to find what gives Mohawk "its distinctive 'Mohawkness'", and in doing so he recalls back to Sapir's (1921: 120) concept of "the structural 'genius' of a language".

If a linguist were be to explain quickly to a layman what polysynthesis is, a formulation that she would plausibly use could be something along the lines of "polysynthetic languages are languages that can say a whole sentence with a single word"; this might almost be considered the stereotype of polysynthesis. Then, one could refine the definition some more: a single word in these languages can, through the use of relatively complex morphology, express all units of meaning that in other languages would be expressed as independent words. This is not far from informal definitions which are often found in introductory linguistic textbooks: for example, Velupillai (2012: 109) describes polysynthetic languages as having "the possibility to express entire sentences as one phonological word"; this property is often called *holophrasis*, cf. i.a. Mithun (2017), Nichols (2017), Fortescue (2017)[1]. Definitions (or, more precisely, descriptions) like these often go hand-in-hand with examples of "exuberant", "spectacular" or "baroque" morphology (Trudgill 2017: 186 and references therein), such as those in (245)-(246). It may have been word-sentences like these that prompted scholars as early as Duponceau (1819) to identify polysynthetic languages as an own type.

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[1] I avoid here the highly problematic issue of defining what a "word" is, and whether it is a meaningful concept at all (Julien 2007, Haspelmath 2011). Note that through the rest of this thesis I have followed a framework in which complex verb forms are built by the same processes that build sentences in e.g. English or Italian, so that the different properties that polysynthetic have from these two languages would have to be based on something else than the mere amount of information that can be packed into a (morphophonological) word.

(245) West Greenlandic (Eskimo-Aleut, Greenland; Fortescue 1984: 315; glosses from Mattissen 2017: 80)
an-niru-lir-sin-niqar-sinnaa-suri-nngik-kaluar-pakka
big-more-begin-CAUS-PASS-POT-think-NEG-but-IND:1SG>3PL
"I do not think they can be made any bigger, but…"

(246) Kabardian (Abkhaz-Adyghe, Caucasus; Colarusso 1992: 88, glosses adapted)
∅-qʼə-w-x̂ʷə-∅-t-y-a-s-x̂ə-žə-fə-aɣ-ha-qʼm
3-HOR-you-for-3-SURF-DIR-DAT-I-take-back-ABLE-PST-PL-NEG
"I was not able to take them back from him for you"

Articulated verb forms such as these admittedly do exceed the complexity reached by even the most complex Äiwoo forms shown in the previous chapters. Despite this, at least at a first superficial glance the Äiwoo forms do not seem to be too far away from structures such as (245)-(246) either. This begs the question of whether or not Äiwoo might be categorized as polysynthetic language. However, given the rather fuzzy and/or gradient nature of most definitions of polysynthesis, this is not a trivial question to answer, and depending on the theoretical view one adopts of polysynthesis, maybe not even a possible one. Rather, it may still be interesting to see how many properties Äiwoo might have in common with languages commonly associated with polysynthesis, some of which I summarize in the next section.

7.2 TYPICAL CHARACTERISTICS OF POLYSYNTHESIS

7.2.1 NOUN INCORPORATION

In linguistic literature, what is mostly meant by "noun incorporation" is something along the lines of what is shown in examples (247)-(248). In both these cases, the (a) sentences are transitive, and the object appears as a full NP. In the (b) sentences, on the contrary, the object appears within the inflected verb form, as constituting only one word together with the verb root.

(247) Nahuatl (Uto-Aztecan, Mexico; Sapir 1911: 260, as cited in Gerdts 1998: 84)

    a. *ni-c-qua in* **nacatl**
       I-it-eat the **flesh**
       "I eat the flesh"

    b. *ni-**naca**-qua*
       I-**flesh**-eat
       "I eat flesh, I am a flesh-eater"

(248) Chukchi (Chukotko-Kamchatkan, Russia; Comrie 1992: 53, glosses from Gerdts 1998: 85)

    a. ***kupre**-n nantəvatgʔan*
       net-ABS set
       "They set the net"

    b. ***kopra**-ntəvatgʔat*
       net-set
       "They set the net"

Often, noun incorporation is taken to be a prototypical characteristic of polysynthetic languages (Fortescue 2017), if not definitional (Baker 1996, Fortescue 2007, Foley 2017a). Gerdts (1998) is an overview of the research about this phenomenon, and it presents a definition based on three prototypical characteristics: (i) both the nominal and the verbal stem must be fully lexical, i.e. able to exist independently; (ii) the incorporating word must be the predicate, and the incorporated nominal must count as one of the predicate's arguments; (iii) there are most often syntactic restrictions on the incorporated nominal (i.e. it mostly cannot be an A argument, although counterexamples have been claimed; see Bugaeva 2017 for Ainu or Myhill 1988 for Indonesian).

    In the available Äiwoo data there is nothing resembling constructions such as (247b)-(248b), apart from one single example, where *nyimä* 'hand' is seemingly occurring in the middle of a verb complex (249). On the basis of this sentence alone, which moreover seems to have an idiomatic interpretation ('die/suffer from cramps'), it is impossible to conclude anything; it might even be that *nyimä* is a different morpheme, coincidentally homophonous with *nyimä* 'hand'.

(249) *go   ba   i-vägi-**nyimä**-ute=dä=gu*   *ngâ*   *nuwopa*   (Usaliki 893)
       because NEG   PFV-push.along.UV-**hand**-again=some=NEG   LOC.PREP   house
       "Because no one died from cramps at home"

7.2.2   HEAD MARKING

Nichols (1986) introduced the difference between grammars which are (predominantly) head-marking vs (predominantly) dependent-marking[2]. In her model, which has been since widely influential in the last thirty years, all syntactic relations have in common the fact that they can – but must not – be marked either on the *head* of the relation, or on the *dependent* element. Heads and dependents of different syntactic relations can e.g. be the possessed noun vs the possessor, an adposition vs its complement, a noun vs a modifying adjective, a predicate vs its arguments (and adjuncts), etc. Languages will then differ as to whether they mark these relations on the heads or on the dependents (or on both, or neither); mostly they will tend to show uniformity in the locus of marking. For example, Chechen marks possession relation on the dependent, as shown in (250). On the contrary, the same relation in Abkhaz is marked on the head, as shown in (251).

(250) Dependent marking: Chechen (Nakh-Daghestanian, Caucasus; Nichols 1986: 60)
       *deː-**n**   a:xča*
       father-**GEN** money
       "Father's money"

(251) Head marking: Abkhaz (Abkhaz-Adyghe, Caucasus; Hewitt 1979: 116, cited in Nichols 1986: 60)
       à-čʼkʼ°ʾən   yə-y°nә̀
       the-boy   **his**-house
       "The boy's house"

Nichols (2017), among others, associates head marking with polysynthesis. In particular, she claims "open" head marking to be definitional for polysynthesis, i.e. head marking where the limits on which roles that can be marked and the slots where these can be marked are less rigid, or expandable, for example by adding marking of argument-like elements, e.g. causees, external possessors, adverbials, noun incorporation (of the non purely detransitivizing sort; see Nichols 2017: 67 for arguments for this claim).

Although Äiwoo is clearly head-marking, the presence of "open" head marking is unclear. The only morphemes that could plausibly be taken as being as marking an additional argument-like element would be the directional markers at the right edge of the stem area. Since they not only indicate physical direction but also metaphorical, they can be used to make reference to benefactive or recipients arguments, or even "ethical datives" (cf. chapter 3, section 3.4). However, a deeper morphosyntactic study would be needed in order to ascertain whether these directional markers can be said to actually mark arguments or not.

7.2.3   OTHER CHARACTERISTICS

Among properties that have been considered to be indicative of polysynthetic languages are the absence of (robustly developed) non-finite verb forms (Baker 1996, Evans & Sasse 2002) and the absence of "non-referential quantified NPs [...] comparable to *everyone, everything, nobody* and *nothing* in English" (Baker 1996: 53). As for the former, finiteness seems to be one of those linguistic notions that, in Klein's (2006: 245) rather sharp words, are "used by everybody and understood by nobody". It is not given that relatively traditional definitions of finiteness that fit European languages (i.e. based on tense or person marking)

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[2] For a critique of this distinction, cf. Haspelmath (to appear).

will also be meaningful in other languages (Nikolaeva 2007)[3]; see also Adger (2007) for an assessment of "finiteness" within generative grammar. No study of finiteness in Äiwoo has been carried out as yet, and a putative definition of finiteness would have to eschew morphological criteria such as "the finite verb forms are all and only those marked for tense", since it appears that no verbal morphology is obligatory in all contexts: it is not clear, for example, when the aspectual/modal markers in slot -2 are used and when they are not. Maybe more syntax-based criteria could shed more light on this issue, although this is, for the time being, a completely open question.

The latter criterion, namely the absence of elements comparable to *everybody*, *nobody* etc., is founded on Baker's generative analysis of polysynthetic languages, where (simplifying) all NPs behave as adjuncts to the main clause, similarly to what happens in Romance dislocated constructions. In Romance languages, it is a known fact that these elements are impossible to dislocate (Rizzi 1986, Cinque 1990), as shown in (252). Since all NPs in polysynthetic languages are effectively dislocated adjuncts, and words such as *everybody* or *nobody* cannot be dislocated, it follows that these words cannot exist in polysynthetic languages.

(252)   Italian (Romance, Italy)
*nessuno, l'=ho   incontrato   ieri
nobody   3SG.O=have.1SG met   yesterday
'Yesterday I didn't meet anybody' (compare the grammatical *Gianni, l'ho incontrato ieri* '(As for) Gianni, I met him yesterday')

Äiwoo does not have any word (or morpheme) corresponding to *everybody*, *nobody* etc.; it remains an open question whether or not this is to be taken as a consequence of Äiwoo having the same syntactical set-up that Baker attributes to polysynthetic languages.

Finally, regarding the distinction between templatic and layered morphology, both systems have been claimed to be at work in different bona-fide polysynthetic languages, or even within the same one. For example, Athabaskan languages were long considered to be the epitome of templatic systems (see e.g. Kari 1989), while Rice (2000) argues that their morpheme order actually follows from semantic scope. In Adyghe, it has been argued that suffixes are governed by semantic scope, while prefixes follow an independent linear stipulation (see also chapter 1; Korotkova & Lander 2010, Arkadiev & Klamer In press). Finally, other polysynthetic languages have been shown to order their morphemes after clearly hierarchical principles, as illustrated in (253) with Yup'ik, where the reordering of the roots 'claim' and 'probably' result in a corresponding change in meaning. Therefore, whether Äiwoo morphemes are ordered mostly after hierarchical or linear principles provides then no evidence either for or against associating it to polysynthetic languages.

(253)   Yup'ik (Eskimo-Aleut, Alaska; Mithun 2016: 151)

a.   *taiciqsugnarqnillruuq*
*tai-ciq-**yugnarqe**-**ni**-llru-u-q*
come-FUT-**probably**-**claim**-PAST-INTR.IND-3SG
"He said he would probably come"

b.   *taiciqnillruyugnarquq*
*tai-ciq-**ni**-llru-**yugnarqe**-u-q*
come-FUT-**claim**-PAST-**probably**-INTR.IND-3SG
"He probably said he would come"

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[3] Actually there are problematic cases even in Indo-European languages, such as the inflected infinitives of European Portuguese, Sardinian and Old Neapolitan (Ledgeway 2007).

Summary and prospects 8

8.1 ANSWERED QUESTIONS

The basic observation which this thesis has sprung out of is that verb forms in Äiwoo can be rather elaborate, with a number of different morphemes showing a complex interplay. The main purpose of this work has been to try to find out how this complexity is organized: (i) are the different morphemes in a consistent order? (yes); (ii) is this order expected from what is known about tendencies of affix order, both in the typological and generative literature? (mostly yes, although not at a first glance, and with one exception); (iii) do we need to stipulate this linear order, or can the morphemes' organization and interplay be explained on the basis of independently needed principles? (mostly it can be explained, but with the same exception as in (ii)). Finally, a possible connection between Äiwoo's morphosyntactic complexity and the phenomenon of polysynthetis has been evaluated – with no conclusive answer, given that the notion of 'polysynthesis' itself has been defined with a number of different criteria, being thus more of a gradient concept that an all-or-nothing category.

In order to answer these questions, I have proposed a formal model of the Äiwoo verb within the minimalist framework, something that has not been done earlier for a language of this region. In this framework, complex words are built syntactically: in other words, there is no clear separation between a complex word consisting of several morphemes, and a complex phrasal constituent, consisting of several words. As a result of this, (almost) all Äiwoo elements related to the verbal morphosyntax can be accounted for in terms of their organization and interplay on the basis of independent principles, i.e. how morphs are combined in the syntax, and the semantic scope relations between them.

More specifically, the person marking system looks at a first glance rather convoluted, with a number of different positions being exploited for different (seemingly arbitrary) subsets of person markers. However, this complex system can be accounted for on the basis of (i) the different nature of the markers themselves, with 3rd person markers being agreement markers, and 1st/2nd person markers being analyzable as pronominal clitics; (ii) the presence of a direct/inverse split in the suffix/postclitic. Moreover, the unit-augmented suffix *-le* can be analysed as a floating quantifier, accounting therefore for its fixed placement even when the element it modifies surfaces in different positions.

The Äiwoo verb stem itself represents a fair amount of the attested complexity, since it can contain several verbal or adverbial roots at once (serial verb constructions) and a number of valence- and voice-related morphemes. In a minimalist framework, this complexity is best accounted for by assuming that each morpheme represents its own syntactic head (following thus the assumptions of e.g. Distributed Morphology), and adjoins to the other ones through the operation of head movement. Given this, both the order and other distributional aspects of the stem-internal morphemes are accounted for solely based on what scopes semantically over what, and how heads can or cannot combine.

The position of the post-verbal clitics is shown to be technically possible to model in this framework, although the proposed model involves a series of movement operations that would need to be substantiated by independent evidence. The only one of these clitics that has resisted explanations is the circumstantial voice clitic *=Cä*. In fact, its position at the edge of the verbal domain is already puzzling, as morphemes having to do with voice and valence are predicted to be close to the stem. And indeed, the presence of this clitic has effects on how the arguments are marked on the verb, something which would naturally follow from a position close to the verb stem: it is then even more puzzling how and why it is located almost as far away from it as possible.

8.2 OPEN QUESTIONS

As for all research endeavours, a number of unresolved issues remain. Many of these tie into the fact that Äiwoo is for the time being an underresearched language, and several phenomena are as yet unclear not only from a theoretical perspective, but also at the descriptive level. Shedding more light on these facts could help in providing an answer to the questions pertaining to the organization of the verbal morphosyntax.

For example, it is not clear what the difference is between attaching =*Cä* to an AV verb or to its UV equivalent: if =*Cä* marks a third voice and it "overrides" the voice properties of what it attaches to, what makes the speakers choose to use e.g. *epave...=Cä* 'cook.AV...=CV' as opposed to *epavi...=Cä* 'cook.UV...=CV'? If there is a systematic difference between the two constructions, this might inform us about how =*Cä* interplays with the person marking system, and therefore its position, both the attested linear one and within a hierarchical structure. Other open questions regard the nature of the semantic interactions between the aspect prefixes and the modal/aspectual post-verbal clitics, the nature of finiteness and how it is encoded (or whether this is a meaningful concept in Äiwoo at all), how tense is encoded (apart from the future clitic =*Caa*, if in any other manner), the function of the deictic particles and clitics, etc.

Apart from the more purely descriptive issues, a number of areas are still open for future inquiry also from a more generativistically/theoretically-oriented perspective. As mentioned in the previous section, although the minimalist model of the Äiwoo clause structure proposed in chapter 5 is – strictly mechanically speaking – possible, it postulates a series of movements for which there is no independent motivation, i.e. just to get to the correct attested linear order of elements. The existence of these movements and landing sites would have to be proved by independent evidence, which cannot be obtained from the currently available data. If these movement operations cannot be confirmed, then different (and possibly more elegant and concise) models will have to be formulated.

Another open question regards the agreement machinery proposed in chapter 6. Based on current literature about complex agreement systems, inverse splits and person hierarchy effects, I have suggested an agreement mechanism that partially departs from what has been proposed earlier: two agreement (sub-)probes can work together not only in a conjunct manner (i.e. the complex probe is satisfied only when both sub-probes are satisfied), but also in a disjunct manner (i.e. the complex probe is satisfied when either sub-probe is satisfied). If any grammatical phenomena from other languages could be shown to follow this disjunct probe mechanism, it could constitute evidence for this to be an actual possibility.

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Appendix: the clitics' allomorphy pattern

The allomorphy pattern presented in this appendix is followed in exactly the same way by the future clitic *=Caa*, the circumstantial voice clitic *=Cä*, and the deictic clitics *=Câ/Ce* (respectively distal and proximal). All the forms listed here are those attested with a certain degree of consistency. Throughout the corpus there are a number of seemingly arbitrary exceptions, which cannot be accounted for on the basis the available data.

FORMS IN =*ng*V

(254) After 1MIN -*no*:

    *ilâ   deu=kâ   i-te-kâ-**no**=**ngâ***   (Dancing leluwo 44)

    that   before=DEIC.DIST   PFV-see.UV-DIR3-**1MIN**=**DEIC.DIST**

(255) After 1MIN -∅:

    *tumo   ku-weo-mä=kaa   ku-wo-potaa-mana-i-gu-**Ø**=**ngaa***   (Moliki 288)

    father.1MIN   IPFV-go-DIR1=FUT   IPFV-go-search.UV-very-UV.AGR-INV-**1MIN**=**FUT**

    'My father will come and look very hard for me'

    'Because as for me here, my father has forbid this to me'

(256) After 12MIN -*ji*:

    *i-bi-**ji**=**ngâ***   (Baking 91)

    PFV-bake.UV-**12MIN**=**DEIC.DIST**

    'We've baked it'

(257) After 12AUG -*de*:

    *lâ   i-te-kä-de   ngä   ki-bi-**de**=**ngâ***   (Baking 82)

    DEIC.DIST   PFV-see.UV-DIR3-12AUG   LOC.PREP   IPFV-bake.UV-**12AUG**=**DEIC.DIST**

    'We saw (this) when we were baking'

FORMS IN =*l*V

(258) After 3AUG -*i*:

    *lâ   i-iitu-mä-**i**=**laa**=kâ*   (Nyotouna 42)

    DEIC.DIST   PFV-tatoo.UV-DIR1-**3AUG**=**FUT**=DEIC.DIST

    'They tattoo it'

(259) After *doo* 'what':

    *kele   dee   kä-i=lä   **doo**=**le***   (Dancing leluwo 151)

    here   thing   say.UV-3AUG=CV   **what**=**DEIC.PROX**

    'This thing they call (it) what?'

(260) After *iie* 'who':

    ***iie**=**le**   ngaa lâ   ki-towââ   ilâ   nenelu*   (Dancing leluwo 40)

    who=**DEIC.PROX**   SO   DEIC.DIST   IPFV-hold.AV   that   dance

    'So, who holds/organises the dance?'

Forms in =*w*V

(261)   After 2MIN -*mu*:
    *ile   ku-wagu-kâ-**mu**=**we**   deu*   (Nyiveina benuwää 175)
    now   IPFV-say-DIR3-**2MIN**=**FUT**   before
    'You were talking about the past'

(262)   After 1AUG -*ngopu*:
    *ki-te-kâ-**ngopu**=**wâ***   (Nyilieteina 70)
    IPFV-see.UV-DIR3-**1AUG**=**DEIC.DIST**
    'When we look back'

(263)   After *lâto* 'then':
    lâto=**waa**   (Burials 20)
    then=**FUT**
    'Then' (possibly segmentable into *lâ*=*to*=*waa* DEIC.DIST=CS=FUT, so the same as (267))

(264)   After *doo* 'like that':
    *lâ   lu-po-**doo**=**waa**=kâ   lâ   dâu=kâ*   (Kite fishing 15)
    DEIC.DIST   3AUG-go-**like.that**=**FUT**=DEIC.DIST   DEIC.DIST   many=DEIC.DIST
    'They go like that until there is a lot'

(265)   After (*w*)*oo* 'how many':
    mo   ngä   nye-ki-vaa-kä   nulo-mu   maa
    but   LOC.PREP   BN:manner-IPFV-close-DIR3   neck-2MIN   if
    *dowââlili   no-mu   ku-**woo**=**waa***   (Childbirth 638)
    child   POSS:GEN-2MIN   IPFV-**how.many**=**FUT**
    'But how many children would you like to have' (lit. 'In the way you like it/your preference, your children are how many?'; the neck is considered the seat of all emotions, so 'the neck is close (to sth)' is idiomatically translated as 'to like')

(266)   After the verb *to* 'be, exist':
    *taolo   no-mu   lâ   ki-**to**=**waa***   (Temââ 208)
    towel   POSS:GEN-2MIN   DEIC.DIST   IPFV-**be**=**FUT**
    'Your towels are there' (compare the homonymous verb *to* 'go in', which takes the elsewhere =*k*V form: *ki-eâ-**to**=kâ* IPFV-paddle-**go.in**=DEIC.DIST 'he paddled in')

(267)   After the slot 4 clitics =*to*, =*jo*, =*eo*:
    a.   *ki-väsili-ngopu=**to**=**wâ**   vängä*   (Burials 58)
        IPFV-make.UV-1AUG=**CS**=**DEIC.DIST**   meal
        'We prepare food'

    b.   *lâto   lâ   ku-nu=**jo**=**wâ***   (Childbirth 336)
        then   DEIC.DIST   IPFV-drink-=**PROG**=**DEIC.DIST**
        'She drinks it'

    c.   *de-eâpoto=**eo**=**waa***   (Ceremonial speech 2 29)
        APPR-enter=**PROH**=**FUT**
        'He should not enter'

(268)   Possible variant 1. =V after 2AUG -*mi*:
    *lâ   ki-te-kä-**mi**=**â***   (Ceremonial speech 1 126)
    DEIC.DIST   IPFV-see.UV-DIR3-**2AUG**=**DEIC.DIST**
    'As you can see' (also attested with =*w*V: *ki-vili-kä-**mi**=**we*** IPFV-weave.UV-DIR3-**2AUG**=**DEIC.PROX** 'you weave it')

(269)   Possible variant 2. =*pw*V after =*ta, =ja*:

    a. *ilâ   käsä=nä   ki-lopâ-ive-ji=**ta=pwâ**   ilâ*   (Childbirth 282)
        there   like=CV   IPFV-talk-APPL-12MIN=**just**=**DEIC.DIST**? there
        'So now we've been talking'

    b. *mo   nâ-pu-lâ-doo-mä=**ta=pwe**   *(Gardening 613)
        and   IRR-go-go.out-like.that-DIR1=**just**=**DEIC.PROX**?
        '[Tell] her to come here for a bit'

    c. *siwo-lâ-doo-nyii-päko-i=**ja=pwâ**   *(Nyiveina benuwää 112)
        hold.UV-go.out-like.that-UV.AGR-good-UV.AGR=**HORT**=**DEIC.DIST**?
        'Can you hold it out properly like this?'

FORMS IN =*n*V

(270)   After 3MIN -∅:
    *nupo   ku-tu-**∅**=**nâ**   *(Nupo eä nubââ 55)
    net   IPFV-bring.UV-3MIN=DEIC.DIST
    'He takes/brings the net'

(271)   After 3MIN possessive markers:

    a. On relational nouns (inalienable possession):
        *ko-kä   tumwä=**nä**   *(Marriage 359)
        say-DIR3   father.**3MIN**=CV
        'His father says' (cf. *ko-kä tum**o**=**ngä*** say-DIR3 father.1MIN=CV 'My father says')

    b. On possessive markers:
        ***nogo=nâ**   ki-tei*   (Heron 6)
        POSS:UTEN.3MIN=**DEIC.DIST**   IPFV-fish
        'His job [i.e. his abitual occupation] was to fish'

(272)   After the unit-augmented suffix -*le*:
    *wâ-nubo-wâ-i-**le**=**nâ**   *(Settlement 695)
    CAUS-die-UV-3AUG-**UA**=**DEIC.DIST**
    'They two killed it [a shark]'

(273)   After the negative clitic =*gu* (slot 5):
    *ba   ki-viteiâ=**gu**=**naa**   *(Nupo eä nubââ 81)
    NEG   IPFV-sell.UV=**NEG**=**FUT**
    'He does not sell it'

(274)   After the floating quantifier *dä* 'some':
    *numugile   käi   nâ-wasili-kâ-mu=**dä**=**naa**   *(Settlement 73)
    piece   pudding   IRR-make.UV-DIR3-2MIN=**some**=**FUT**
    'You must make a little pudding'

(275)   After other quantifiers such as *bäjä*/*mäjä* 'other':

    a. *eä   **bäjä=naa**   *(Nyilieteina 168)
        and   **other**=**FUT**
        'And another one'

    b. ***mäjä=naa**   dä   tuge=kaa   me-e-mo=kaa*   (Däive 6)
        other=**FUT**   some   time=FUT   1AUG-E-stay=FUT
        'Other times we stayed'

(276) After the DIR3 -*kä*:
    ingopu pe-ngä   nuumä=kâ   ilâkâ   me-ku-wo-du-kä=naa   (Burials 34)
    1AUG   COLL-LOC.PREP village=DEIC.DIST there   1AUG-IPFV-go-finish-DIR3=FUT
    'We, the people of the village, we all come'

(277) After the verb *wä*/*wâ* 'go':
    lâ   i-pu   me-wä=naa=kâ   (Burials 191)
    DEIC.DIST PFV-go   1AUG-**go**=FUT=DEIC.DIST
    'Then we go'

(278) After the adverb *ngä* 'still, yet':
    tuge   lâ   deu   ba-ngä   nuwopa nyi-bei=ke,
    time   DEIC.DIST before   NEG-yet   house   BN:place-ill=DEIC.PROX

    lâ   ba-ngä=nâ   (Childbirth 4)
    DEIC.DIST NEG-**yet**=DEIC.DIST
    'The old days when there was no clinic here yet, there wasn't yet'

(279) After the adverbial anaphora *ngämi* 'there':
    mi-ki-li-paavee   ngämi=nâ   (Education 23)
    BN:one-IPFV-3AUG-show.UV **there**=DEIC.DIST
    '[In these eight schools,] the teachers there [are about between 70 and 80]'

(280) After the circumstantial voice clitic =*Cä*:
    ilâ=kâ   maa nye-ki-li-amole-lâ=nä=nâ   (Marriage 414)
    that=DEIC.DIST if   BN:manner-IPFV-3AUG-look.at-go.out=**CV**=DEIC.DIST
    'That's how we see it'

Appendix: attested data for the inverse construction

B

The combinations that trigger the inverse constructions are the following.

(281) a. 1MIN → 2nd person, of all numbers; examples (282)-(284)

  b. 3MIN → non-3MIN; examples (285)-(295)

Almost all of these combinations are illustrated in the examples below. Some combinations with unit-augmented O arguments are unattested: 1MIN → 2UA 'I VERB you two' (284); 3MIN → 1UA '(S)he VERBS us two (excl.)' (292); 3MIN → 12UA '(S)he VERBS us three (incl.)' (293). However, there is no clear principial reason why exactly these combinations should be impossible. This may simply be a lack of data, due to the rareness of these combinations of arguments in natural speech.

(282) **1MIN → 2MIN:**
  *ki-lâwâle-wâ-**nee-mu**=wâ*   (Näkenaa 31)
  IPFV-help.UV-DIR2-**1MIN-2MIN**
  'I will help you'

(283) **1MIN → 2AUG:**
  *de-nâ-wâ-singä-â-wâ-**nee-mi**=ä=ne*   (Marriage ceremony 39)
  BN:thing-IRR-CAUS-lie-UV-DIR2-**1MIN-2AUG**=CV=DEIC.PROX
  'The thing that I want you to deceive you all with'

(284) **1MIN → 2AUG-UA:** unattested

(285) **3MIN → 1MIN:**
  *lâto   i-malei-**gu-Ø**   uu=kâ*   (Nubulaa 163)
  then   PFV-look.after.UV-**INV-1MIN**   up=DEIC.DIST
  'He nursed/took care of me up in the sky'

(286) **3MIN → 12MIN:**
  *dee   kä=nä   kä=nä   ku-weevä-mä-**gu-ji***   (Usaliki 420)
  this   say.UV=CV   say.UV=CV   IPFV-visit.UV-DIR1-**INV-12MIN**
  'He says he wanted to visit us (me and you)' (the repetition may be due to hesitation)

(287) **3MIN → 2MIN:**
  *mo   ki-lâwale-wâ-**gu-mu**   ngâ   pole*   (Gardening 617)
  but   IPFV-help.UV-DIR2-**INV-2MIN**   **loc.prep**   work
  'So, does she help you with the work?'

(288) **3MIN → 1AUG:**
  *le   i-liaa-mä-**gu-ngopu**=we*   (Gardening 465)
  DEIC.PROX   PFV-reach.UV-DIR1-**INV-1AUG**=DEIC.PROX
  'He was coming to/reaching us'

(289) **3MIN → 12AUG:**
  *i-ki-to-kä-**gu-de***   (Village gov. 675)
  PFV-fit.UV-go.in-DIR3-**INV-12AUG**
  'It suits us'

(290) **3MIN → 2AUG:**
  *mo   kä-i-le=nä   ki-do-wâ-**gu-mi**=to*   (Oponego 240)
  but   say.UV-3AUG-UA=CV   IPFV-pay-DIR2-**INV-2AUG**=CS
  'But they two said, he will pay you (pl.)'

(291)   **3MIN → 3AUG:**
          *ku-waato-**gu-i***   *nenelu=kâ*   (Dancing leluwo 147)
          IPFV-excite.UV-**INV-3AUG**   dance=DEIC.DIST
          'The dance excites them'

(292)   **3MIN → 1AUG-UA:** unattested

(293)   **3MIN → 12AUG-UA:** unattested

(294)   **3MIN → 2AUG-UA:**
          go   *i-tu-mä-**gu-mi-le***   *pole*   *ile*   *nugu-mi-le=ne*   (Speech 8)
          because   PFV-bring.UV-DIR1-**INV-2MIN-UA**   work   this   POSS:UTEN-2MIN-UA=DEIC.PROX
          'Because your work brought you two here'

(295)   **3MIN → 3AUG-UA:**
          *ki-siwo-**gu-i-le***   (Usaliki 755)
          IPFV-hold.UV-**INV-3AUG-UA**
          'She (tried to) grab them'

For non-linguists: lay summaries

English summary

As linguists, we have the luxury to be wrong in a way that doesn't work for doctors or economists. If you mess up as one of those, people die and countries go bankrupt, but in linguistics we just write another paper about it.

— Rather loosely quoted from Rajesh Bhatt

To understand what linguists do, picture a scientist who study animals: she will go into the jungle, find a previously unknown monkey, and start studying this monkey as much as she can. She will try to describe how this monkey behaves, what it eats, how it socializes, and so on. Describing what the monkey does is interesting in and on itself, but it is also worth of research trying to *explain why* the monkey does what it does and behaves the way it behaves, and why it does not do something else entirely. Moreover, she will compare this new monkey to the other monkeys we already know, how they are similar and how they are not, and see wether the knowledge we have about other monkeys helps us understanding this new monkey. Now, linguists do approximately the same thing, but with languages instead of monkeys.

The language I have studied for this thesis is called Äiwoo, and it is spoken by 8 000-odd people in the Reef Islands, a small archipelago in a fairly remote corner of the Pacific Ocean. If you have bad memories from trying to remember all those different verb forms in French or Spanish in school, the Äiwoo language might make you tremble, as their verbs can be at a first glance relatively frightening. With the proper set of endings and inflections, nothing stops Äiwoo speakers from expressing with one single verb what would be an entire sentence in English, as shown below in the two words/sentences below. These verb are made up of many bits and pieces: the first line is the complete word, with hyphens separating the various bits; the second line gives a bit-per-bit coarse translation (I put dots where the bit would be too boring to explain here, or where we do not actually know what the meaning is); the third line is what the whole thing means in natural, fluent English. Notice the sophisticatedness of (2): 'to deceive' is 'to make (somebody) lie', because if I deceive you, I make you say things that are not true.

(1)   *siwo-lâ-doo-nyii-päko-i-ja-pwâ*
      hold-outward-like that-...-well-...-can you-...
      'Can you hold it out properly like that?'

(2)   *de-nâ-wâ-singä-eâ-wâ-nee-mi-ä-ne*
      thing-want to-cause to-lie-...-to you-I-you guys-with-...
      'The thing I want to deceive you all with'

All these small bits and pieces coming together beg a series of questions: how do speakers put them together, according to what rules, which ones can be put together with which other ones, in what order, etc. Moreover, as scientists with monkeys, we not only want to describe what we see, but also try to explain it: can we account for how these bits come to work together based on what we already know (or think we know), or do we need to come up with all sorts of new strange principles and rules just to explain this one language? To keep the answer extremely short: yes, we can account for them based on what we already know, apart from one of them (the second-to-last one in (2) – and yes, its meaning is indeed more complicated than "with").

Doing this, I have taken verbs which looked quite scary and made them less scary, by showing precisely how similar they actually are to other verbs from more familiar languages, and in what ways they are different. The road is now open to see how much we will need to bend the theories we already have to explain these "stranger", unruly bits.

Norsk sammendrag

Som lingvister har vi den luksusen at vi kan ta feil på en måte som ikke egnes leger eller økonomer. Hvis du roter det til i de yrkene, da dør folk og hele land går konkurs, mens i lingvistikken skriver vi bare en til artikkel om det.

— Nokså fritt etter Rajesh Bhatt

For å forstå hva det er lingvister gjør, se for deg en forsker som studerer dyr: hun vil gå inni jungelen, finne ei ny, ukjent ape, og begynne å studere denne apa så detaljert hun kan. Hun vil prøve å beskrive hvordan apa oppfører seg, hva den spiser, hvordan den sosialiserer, osv. Å beskrive hva apa gjør er interessant i seg sjøl, men det er også verdt å prøve å *forklare hvorfor* apa gjør det den gjør og oppfører seg som den gjør, og hvorfor den ikke gjør noe heilt annet. Dessuten vil forskeren sammenligne denne nye apa med andre aper vi allerede kjenner til, hvordan de er like og hvordan de er forskjellige, og hun vil se om kunnskapen vi har om andre aper vil hjelpe oss med å forstå den nye. Nå, lingvister gjør omtrent det samme, bare med språk istedenfor aper.

Språket jeg har studert i denne oppgaven heter äiwoo, og snakkes av om lag 8 000 mennesker på Reef-øyene, ei lita øygruppe i et avsideliggendes hjørne av Stillehavet. Hvis du har dårlige minner fra å måtte pugge alle de verbene på fransk eller spansk på skolen, da vil äiwoo få deg til å skjelve, for verbene deres kan ved første øyekast være nokså fryktinngytende. Med den riktige kombinasjonen av endelser og bøyinger er det ingenting som stopper äiwootalerne fra å uttrykke med ett eneste verb det vi ville brukt ei heil setning på, som vist i de to ordene/setningene nedenfor. Disse verbene er bygd opp av flere små biter: den første linja er det fulle ordet, med bindestreker som skiller de ulike bitene; den andre linja gir en bit-for-bit-oversettelse (jeg la inn prikker der den aktuelle biten enten er for kjedelig til å forklares her, eller der vi faktisk ikke veit hva den betyr); den tredje linja er hva heile saken betyr på naturlig norsk. Legg merke til en finesse i (2): 'å lure' er 'å få (noen) til å lyve', fordi hvis jeg lurer deg, da får jeg deg til å si ting som ikke er sanne.

(1) *siwo-lâ-doo-nyii-päko-i-ja-pwâ*
holde-utover-slik-...-bra-...-kan du-...
'Kan du holde den ut her, ordentlig, sånn her?'

(2) *de-nâ-wâ-singä-eâ-wâ-nee-mi-ä-ne*
ting-vil-få til å-lyve-...-mot dere-jeg-dere-med-...
'Tingen jeg vil lure dere med'

Alle disse småbitene som arbeider sammen løfter en del spørsmål: hvordan setter talerne dem sammen, etter hvilke regler, hvilke kan gå etter hvilke andre, i hvilken rekkefølge, osv. Dessuten, som forskerne med apene vil vi ikke bare beskrive hva vi ser, men også prøve å forklare det: kan vi da gjøre rede for hvordan disse bitene fungerer sammen basert på hva vi allerede kan (eller trur vi kan), eller trenger vi å finne på all slags nye prinsipper og regler bare for å forklare dette ene språket? For å svare kort og konsist: ja, vi kan forklare dette basert på det vi allerede kan, forutenom én av bitene (den nest-siste i (2) – og ja, betydninga er egentlig nokså mer komplisert enn bare "med").

Med å undersøke dette har jeg tatt verb som så ganske skumle ut og gjort dem mindre skumle, ved å vise nøyaktig hvor like de er til andre verb fra mer kjente språk, men også hvordan de er forskjellige. Veien er nå åpen for å se hvor mye vi trenger å tøye de teoriene vi har for å forklare disse "rare", ustyrlige små verbbiter.

Sommario in italiano

Come linguisti abbiamo il lusso di poterci sbagliare in modi che non andrebbero bene per un medico o un economista. Se uno di questi combina guai, la gente muore e i paesi vanno in bancarotta, mentre in linguistica semplicemente ci scriviamo un altro articolo.

— Piuttosto liberamente citato da Rajesh Bhatt

Per capire cosa fanno i linguisti, immaginate uno scienziato che studia gli animali: andrà nella giungla, troverà una scimmia mai osservata prima, e comincerà a descrivere questa scimmia al meglio delle sue possibilità. Proverà a descrivere come si comporta questa scimmia, cosa mangia, come socializza, etc. Descrivere cosa fa la scimmia è interessante in sé e per sé, ma è altrettanto interessante provare a *spiegare perché* la scimmia fa quello che fa e si comporta come si comporta, e perché invece non fa tutt'altre cose. Ora, i linguisti fanno più o meno la stessa cosa, ma con le lingue invece che le scimmie.

La lingua che ho studiato per questa tesi si chiama äiwoo, e la parlano circa 8 000 persone nelle Isole Reef, un piccolo arcipelago in un angolo abbastanza remoto dell'Oceano Pacifico. Se hai brutti ricordi di quando a scuola provavi a ricordarti a memoria le coniugazioni in francese, tedesco o in latino, l'äiwoo potrebbe farti tremare, dato che i verbi di questa lingua a prima vista possono incutere timore. Con le giuste desinenze e flessioni, niente ferma i parlanti dell'äiwoo dall'esprimere con un verbo solo quella che per noi in italiano sarebbe una frase intera, come mostrato nelle due parole/frasi qui sotto. Questi verbi sono composti di tanti pezzetti: la prima riga è la parola completa, con i trattini a separare i vari pezzi; la seconda dà una traduzione approssimativa, pezzo-per-pezzo (ho messo i puntini dove il pezzo corrispondente o è troppo noioso da spiegare qui, o effettivamente non sappiamo cosa significhi); la terza riga è il significato della parola intera in italiano scorrevole. Notare la sofisticazione in (2): 'ingannare' viene espresso come 'far mentire', perché se ti inganno, ti faccio dire cose che non sono vere.

(1) *siwo-lâ-doo-nyii-päko-i-ja-pwâ*
     reggere-all'infuori-così-...-bene-...-puoi-...
     'Puoi reggere bene questo all'infuori in questo modo?'

(2) *de-nâ-wâ-singä-eâ-wâ-nee-mi-ä-ne*
     cosa-condizionale-causare-mentire-...-verso di te-io-voi-con-...
     'La cosa con cui vi vorrei ingannare'

Tutti questi pezzettini che lavorano insieme scatenano una serie di domande: come fanno i parlanti a combinarli, secondo quali regole, quali possono essere attaccati a quali, in che ordine, etc. Inoltre, come gli scienziati di cui sopra con le scimmie, non vogliamo solo descrivere quello che vediamo, ma anche spiegarlo: possiamo spiegare il comportamento e la posizione di questi pezzetti di verbo basandoci su quello che già sappiamo (o che crediamo di sapere), o dobbiamo inventarci chissà quali nuovi principi strani solo per spiegare questa lingua? Per farla corta: sì, riusciamo a spiegarli tutti basandoci su quello che già sappiamo, a parte uno (il penultimo in (2) – e prima che lo chiediate sì, il significato è effettivamente ben più complicato di "con").

Investigando su questi problemi, ho preso verbi che erano abbastanza spaventosi e li ho resi meno spaventosi, facendo vedere precisamente come siamo simili ad altri verbi da lingue più famigliari, e in che modi sono diversi. Adesso, la strada è aperta per vedere quanto dobbiamo piegare le teorie che abbiamo per spiegare questi altri pezzetti più "strani".