The Temporal and Aspectual Semantics and Verbal Tonology of Gisida Anii

DISSERTATION

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Abstract

This study is the first in-depth linguistic study of the structure of Anii, a West African Kwa language spoken by approximately 50,000 people in the countries of Togo and Benin. A basic overview of the language is provided in the first chapter, but the main focus of this work is on the verb system, specifically on the semantics of temporal and aspectual reference, and on the tonology of verb stems and related markers. These two topics were chosen because they are interrelated—understanding the tone patterns allows for a clearer picture of which tense-aspect markers are actually different from each other, and understanding the semantics of the different markers helps clarify the function of certain tone patterns.

The first part of this study describes and formally analyzes temporal and aspectual reference in a variety of Anii clauses. An important background for this analysis is a discussion of Aktionsarten in Anii. The data presented here shows that developing Anii-internal diagnostics for Aktionsarten leads to a better understanding of the role of Aktionsarten in Anii than relying on translations to determine Aktionsarten does. Such an understanding is key because Aktionsarten play an important role in temporal and aspectual reference in many Anii clauses.

For example, in the investigation of clauses not overtly marked for tense or aspect (‘unmarked clauses’), the effect of Aktionsarten is clear. Unmarked clauses with eventive predicates can only have past temporal reference and perfective aspectual reference. In contrast, unmarked clauses with stative predicates can have either past or present temporal reference, but only imperfective aspectual reference. When marked with the imperfective marker [ti], clauses with either eventive or stative predicates are only compatible with non-future temporal reference, and those with eventive predicates are
compatible only with imperfective aspectual reference. [ti]-marked clauses with stative predicates can only have habitual aspectual reference. As shown here, two important distinctions regarding temporal and aspectual reference in Anii are between perfective and imperfective aspectual reference, and between future and non-future temporal reference.

Anii also has other markers that affect temporal and aspectual reference. For example, [ʧèé] is a perfect marker (compatible with past, present or future temporal reference). The far-past marker [bônà], on the other hand, is not a tense or an aspect marker, but rather a Temporal Remoteness Morpheme (TRM) that restricts the eventuality time of a [bônà]-marked clause such that it must be at least three weeks before the utterance time of that clause. A few other markers are also briefly discussed, to round out the understanding of the semantics of the Anii verb system.

The second part of this study investigates tone on verb stems and surrounding markers, including subject markers, noun-class agreement markers, tense-aspect-modality (TAM) markers, and negation markers. Anii has two surface tone levels, high (H) and low (L), but the L tones are the phonetic pronunciation of toneless syllables, rather than being phonological entities. The tone-bearing unit in Anii is the mora, and the tone patterns reveal that Anii has certain unusual syllable structures. For example, while Anii has a length distinction between monomoraic (short) and bimoraic (long) monophthongs, all diphthongs in Anii are short (monomoraic). Additionally, there is a contrast between the tone patterns of diphthongs (which all end in high vowels) and vowel-glide sequences, at least word-finally. This tone pattern difference occurs because diphthongs are consistently monomoraic, while vowel-glide sequences are monomoraic at the stage of initial tone association, but are bimoraic with respect to other tonal rules, (and on the surface) because the final glide (like all word-final consonants in Anii) receives a mora by rule during the derivation.

Anii has both lexical and grammatical tone. As in many other African languages, there are two categories of verb stem with regard to tonal behavior, i.e. those that have a lexical H tone and those that do not. Some non-stem morphemes (e.g. some TAM markers and a negation marker) that are discussed here also have lexical H tones. These
tones interact with the grammatical tones found on various types of subject markers, as well as with grammatical tones that are present in certain cases of clause or verb phrase subordination, or in ‘irrealis’ constructions. The rules of tone association are shown here to be very regular, applying to almost all the tones discussed here. Other rules (e.g. spreading rules) are shown to apply more specifically. Anii also has downstep, which is analyzed as the phonetic pronunciation of adjacent H tones. Downstep does not occur in some cases where it might be expected due to spreading rules, or to a fusion rule whereby adjacent moras linked to different H tones become linked to a single H tone. All the tone patterns within the Anii verb complex can be accounted for with only nine rules and a small set of restrictions as to the domains of application of those rules.

While many questions remain about aspects of Anii that could not be explored here, this dissertation serves as a beginning for future work on Anii. The data here also provides a basis of comparison for those interested in the structure of West African languages, or in the particular theoretical issues raised here. One theoretical contribution of this work is the analysis of [bʊŋà] as a TRM, which adds to the scientific understanding of this type of marker. To my knowledge, Anii is the only language that has been demonstrated to have a single past TRM (rather than TRMs that refer to several degrees of past-ness). From a phonological perspective, the unusual syllable structures of Anii challenge commonly held assumptions about prosodification and syllable structure. This dissertation thus not only makes available previously unknown information about the structure of a little-known language, but it also contributes theoretical insights to the fields of formal semantics and formal phonology.
Dedication

A la gloire de Dieu, et pour tous ceux qui peuvent lire les paroles suivantes:

Na ntøma ma, Gaja ga làa mbømɔ ma ! Atigikrɔ Anii gi cè nyu !
Acknowledgments

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And also parties. They threw me lots of parties! The work I have done would not have been possible without their cheerful support, and that of other members of the SIL TGB branch, especially Josh and Virginia Ham, Rob and Lois Thar, and Marianne Harvey.

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Of course, I am also grateful for all the funding that allowed me to carry out my work in Benin. The fieldwork on which this dissertation is based was funded by The Ohio State University Department of Linguistics, the Ohio State University Office of International Affairs, and most importantly, by the National Science Foundation through a Doctoral Dissertation Research Improvement Grant (NSF BCS-1122303).

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List of Gloss Abbreviations Used in this Dissertation

1. first person
2. second person
3. third person

ANIM: animate (usually regarding possessors)
ASSOC: associative marker
CL: noun class (additionally marked with the letters of the Anii alphabet)
DEM: far demonstrative
DEM.CLOSE: close demonstrative
DET: determiner
DISC: discourse particle (e.g. ‘um’)
GRP1: group 1 (‘realis’) subject pronouns
GRP2: group 2 (‘irrealis’) subject pronouns
FOC: focus marker
FUT: ‘future’ marker (exact meaning unknown)
IMPERS: impersonal pronoun
IMPF: imperfective
INANIM: inanimate (usually regarding possessors)
INORD: in order to (possibly a concatenation or subordination marker)
NEG: negative
NOM: nominalization marker
OBJ: object marker
PERF: perfect
PL: plural
POSS: possessive
PST: past
QUEST: question marker
REL: relative pronoun
SG: singular
SUB: subordinate clause marker (in some cases merely a H tone)
SUBJ: subject marker
TAM: a tense-aspect-modality marker, meaning not yet fully determined
-
:morpheme boundary
.
:used when a single morpheme includes more than one meaning, or the
location of a morpheme boundary is unknown for phonological reasons

Note that in the data presented in this dissertation, all words in square brackets within Anii sentences are assumed to be codeswitches into French

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Chapter 1
Introduction

This study is an analysis of the temporal and aspectual semantics and the tonology of the verb complex in Anii, an under-documented West African Kwa language. This work is motivated by two basic goals. The first of these goals is to provide documentation of a little-studied language, Anii (specifically the Gisüda dialect). Such documentation serves the purpose of increasing scholarly knowledge about the nature of human language in general, and about Anii (as spoken in Bassila, Benin at the beginning of the twenty-first century) in specific. Describing aspects of Anii grammar preserves and disseminates knowledge about Anii that may be of interest to professional linguists and Anii speakers alike. The second goal of this work is to explore specific theoretical questions that are raised by the Anii data analyzed here, in order to evaluate how well aspects of linguistic theory that were developed for other languages can also account for the Anii data. The focus of this dissertation is on the description and analysis of temporal and aspectual reference, and of the tonology of verbs and related markers. The theoretical applications of this work are thus related to the analysis of verbal data.

The set of morphemes that will be investigated here will be referred to as the ‘verb complex’. The verb complex consists of verb roots, tense/aspect/modality (TAM) markers, subject markers, agreement markers on the verb, and negation morphemes. Nominal subjects and other full NPs are not included in the verb complex since the focus here is on verbs and related markers. Some examples of Anii verb complexes are given in (1), where (1a-c) are clauses that consist only of the verb complex. (1d) provides an example in which the verb complex is part of a longer clause. The verb complex is bolded in each case:
The decision to narrow the study of the verb complex in Anii to only temporal and aspectual reference and tonology was made because those two areas are the most theoretically interesting aspects of the grammar of the verb complex, whose morphology and segmental phonology is relatively straightforward.

This chapter provides an introduction to Anii, as well as a brief sketch of some aspects of Anii grammar that will be helpful for readers who are unfamiliar with the language (and in particular those who are unfamiliar with West African languages in general). Section 1.1 provides general background on the Anii language, including a discussion of classification issues, historical data, and the complexities of the Anii dialect situation, while Section 1.2 discusses the limited amount of previous research on Anii. The following sections of this chapter present a basic overview of the structure of Gsida Anii. Section 1.3 provides background on the Anii speakers who provided the data for this dissertation, as well as a brief discussion of how elicitation was conducted. Section 1.4 lays out the phoneme inventory and provides a discussion of some basic phonological phenomena, including the typologically unusual 11-vowel system of vowel harmony.
based on the feature Advanced Tongue Root (ATR). The basic morphosyntax of Anii clauses is presented in Section 1.5, including discussion of word order, the noun class system, and general agreement patterns. The final section, Section 1.6, concludes.

1.1 About Anii

Anii is spoken by at least 45,900 people (Lewis, Simons and Fennig 2013) along the border between Benin and Togo, two small Francophone countries in West Africa. Most speakers live in Benin (Commune of Bassila, Donga Province), but there are also four Anii villages in Togo (Tchamba Prefecture, Central Region). In some older sources, the language is referred to as Baseca, Basila (after the largest village, Bassila), or Ouindji-Ouindji, (a somewhat derogatory term used by neighboring people groups) (Heine 1968b, Elwert 1977). The name Anii was chosen by the Anii people in the 1970s as a name for the language because it is a word that is common to all the Anii dialects (cf. Zaske and Atti Kalam 2014). It is an interjection meaning roughly ‘do you hear?’, or ‘do you understand?’.

As is common in many parts of Africa, most Anii speakers are multi-lingual, with common second or third languages being Tem (Kotokoli) (a regional lingua franca), Ede Nago (the language of some surrounding villages, a dialect of Yoruba), and French (the language of schooling and government in both Togo and Benin) (cf. Lewis, Simons and Fennig 2013). There are also many Anii people who spend significant amounts of time working in Ghana, and there is a large diaspora community there. People who have spent time in Ghana (or Nigeria, where some Anii also go to work) often speak English, and there are actually a number of English loanwords in Anii (e.g. [bɔl], ‘ball’, [tii], ‘tea’, [tɔm], ‘time’, [sʊkʊɾʊ], ‘school’, and [lʊːɾi], ‘vehicle’, from the word ‘lorry’). Anii speakers are, however, generally quite proud of their language, and from my observations, it seems that Anii is still learned as a first language by the majority of children in Bassila, even though the non-Anii population of Bassila is quite significant and growing due to the fact that Bassila is a seat of local government for the area. The

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3 I suspect that this estimate is on the low end.
fact that children are still learning Anii as a first language is even more true for the smaller villages, where children have less contact with other languages.

Anii has been classified as part of a small group of Kwa languages which were originally referred to as Togorestspachen or Togo Remnant Languages (Westermann 1932, Heine 1968a), but are now termed Ghana-Togo Mountain (GTM), or Central Togo (CT) Languages (cf. Blench 2009). These languages have been of great interest to many researchers because it is unclear how they are related to each other or to surrounding languages (see Westermann 1932, Bertho 1951, Greenberg 1970, Kropp Dakubu 1988, Blench 2009). Many GTM languages (including Anii) have very robust noun class agreement systems, which was once thought to be a characteristic mainly of Bantu languages (cf. Bertho 1951, Greenberg 1970), though it is now clear that many non-GTM languages in West Africa also have strong noun class systems (Williamson and Blench 2000, Blench 2009). The noun class system of Anii and its possible relation to other noun class systems is discussed in more detail in Section 1.5.3.

Anii is one of the least studied GTM languages, likely because it is spoken further north and east than any other member of that group (see map in Figure 1, from Heine 1968a, where Anii is number 2, labeled as Basila). Blench (2009) argues, after extensive
wordlist comparison, that Anii (including all dialect groups as one language) belongs to a very small branch of the Kwa family with only one close relative, Adélé (number 1 on Heine’s map in Figure 1), which is spoken along the Ghana-Togo border and a little to the south of the Anii area. Adélé is geographically the closest of the GTM languages to Anii, as well (Heine 1968a). Blench’s (2009) analysis is reasonable, and well-researched, given the available sources on Anii, despite the fact that the wordlists he used (compilations of many previous lists), are not always accurate.

It is not known how the Anii speakers arrived in their current location, but many Anii villages have origin stories which indicate that the Anii arrived in Togo and Benin from the west (cf. Affo Inoussa n.d., Ayah Gado 2003, Ayah Gado 2006). Bertho (1951) claimed that the Anii (whom he called Basila) were chased out of Ghana by the Ashanti kingdom, though he does not explain why he makes this claim. One possibly corroborating fact for the assumption that the Anii came originally from Ghana (or another country where English is spoken) is that many of the English loanwords in Anii appear to have been borrowed much earlier than the many French loanwords that Anii also has. Many Anii speakers even consider the English borrowings to be native Anii words, but few have that impression for the French borrowings. Some members of the Anii community have been trying to determine exactly where they came from originally, so this question is still the focus of on-going research.

There are four major dialect groups in Anii, which are quite different from each other, even to the point that some of the dialects are not mutually intelligible (Tompkins and Kluge 2009). These differences may include variation in phonology (including tonology), lexicon, syntax, and TAM semantics. There are even significant differences from village to village within groups, particularly regarding pronunciation. Further discussion of Anii dialect issues is found in Morton (2008), and though much work still remains to be done to document the Anii dialects, such work is beyond the scope of this dissertation, and will not be discussed further here.

The data presented in this dissertation comes exclusively from the Gisuda dialect of Anii, which is spoken in and around the largest Anii village (really a town), Bassila (also a seat of regional government in Benin). There are no available statistics as to how
many speakers of this dialect there are, but I would estimate that there are probably around 10,000 to 12,000. Gisuda is also the dialect used in local radio broadcasts throughout Anii-land, and the dialect which has had the largest influence on the development of the Anii orthography and in which the majority of the available Anii-language publications are written. In 2012, in fact, a group of Anii elders and other interested parties (representing all of the dialect groups) made the official decision that the Gisuda dialect would be the basis for the standardized written form of Anii.

Despite a growing body of literature in Gisuda Anii, however, there has still been very little scientific study of this dialect, and essentially no study of any other Anii dialect. The next section describes existing literature on Anii.

1.2 Previous Research on Anii

Previous research on Anii that provides any data beyond short (and often inaccurate) wordlists (cf. Bertho 1951) is limited to a brief phonological sketch by Bernd Heine (1968b), several unpublished manuscripts, and two forthcoming papers that will be published soon (Fiedler forthcoming, Morton forthcoming). The manuscripts include a brief discussion of the noun classes and some claims about tone and vowel quality by anthropologist Georg Elwert (Elwert 1974, 1977), two papers about focus and information structure by Ines Fiedler (Fiedler n.d., forthcoming), and some orthography-related phonological observations by language development workers (Zaske and Atti Kalam 2014). Additionally, I have previously written (and in some cases published) papers on dialects, vowel harmony, tone, and temporal and aspectual reference. This section summarizes the conclusions of this previous research on Anii, with Section 1.2.1 describing research done by previous authors, and Section 1.2.2 briefly discussing my own previous work.

1.2.1 Other Authors’ Analyses of Anii

The first publication that I know of that provides any Anii data outside of word lists is Heine (1968b). This work provided the first phoneme chart of Anii, for both
consonants and vowels, as well as some discussion of phonology and morphology.

Heine’s research, however, was conducted in Kpalimé, Togo (Palimé on the map in Figure 1 above), which is in the south of Togo near the Ghanaian border, quite far from any Anii-speaking area. All three speakers consulted for Heine’s sketch were native speakers of “Basila”, as Heine called the languages, and “originated from within and around Bassila town” (Heine 1968b, 1), but as Heine says, “their idiolects show remarkable differences” (1968b, note 3). This may indicate that in fact his speakers did not all speak the same dialect, since the dialects of Anii are extremely varied, even between villages that are less than 5 or 10 miles from each other (Tompkins and Kluge 2009) and his geographical information is not specific enough for dialect to be determined. In any case, the phoneme charts he gives do not fully correspond to the currently accepted phoneme chart for Gɩsɩda Anii in that Heine’s charts include non-nasal palatal stops (for which there is no evidence in modern Gɩsɩda, though there are palatal affricates), a glottal stop instead of a glottal fricative, and one less vowel (10 instead of 11) than more recent charts (cf. Morton 2008, 2012b, Zaske and Atti Kalam 2014). In addition, Heine included nasal vowels as separate phonemes, for which there is also no evidence in my research (though vowels following nasal consonants are phonetically nasalized in Gɩsɩda).

Besides the phoneme chart, Heine (1968b) included some remarks on tone, claiming that there are between two and four phonemic tone levels. Elwert (1977) provided limited further discussion on tone. The argument made by Elwert is that Gɩsɩda has two surface tone levels, an analysis that I believe to be correct, as will be demonstrated below, despite the fact that the data he cites in support of this conclusion are quite sparse. For more discussion on the history of tone analysis and orthographic tone marking in Anii, see Zaske and Atti Kalam (2014).

Heine (1968b) also provided a brief description of alternations illustrating that the place contrast between nasal consonants is neutralized before stops. This neutralization does occur in modern Gɩsɩda Anii, as will be discussed below. In addition, Heine described some vowel alternations, though with the small amount of data he had available, no consistent patterns can be discerned. It will be shown below, however, that
Anii does exhibit extensive vowel harmony, which seems to account for at least some of the alternations Heine noticed.

Another phonological phenomenon noted but not extensively investigated by Heine (1968b) is vowel elision. Heine (1968b) noted that some “concord” markers (what I call noun class markers) are deleted where they consist of only a vowel (e.g. *u-pi ni* instead of *u-pi u-ni* for the phrase ‘that child’), whereas concord markers are never dropped when they begin with a consonant (e.g. *ba-pi ba-ni* ‘those children’). Zaske and Atti Kalam (2014) also noted this phenomenon and mention many other environments in which vowels adjacent to other vowels, often across word or morpheme boundaries, are elided. I will not address vowel elision in detail in this dissertation, but it is discussed in some limited cases. The rest of Heine’s (1968b) article focuses on morphology, specifically describing many of the noun classes in Anii and the agreement patterns they generate.

While most research (outside my own work) on the Anii language has focused on classification or phonology, there has been some investigation of other areas of the language, as well. Specifically, Ines Fiedler’s papers (Fiedler n.d., forthcoming) provide a description and analysis of some aspects of information structure in Anii. Some focus constructions are present in the data presented here, but discussion of all of the different types of focus constructions in Gsuda is beyond the scope of this dissertation. The interested reader is referred to Fiedler’s work.

1.2.2 Previous Analyses of Anii by the Author of this Dissertation

In addition to the data presented and analyzed in this dissertation, much foundational descriptive data about the structure of Gsuda was collected during my three research trips to Bassila, Benin in 2009, 2011 and 2012 (a total of approximately 12 months of fieldwork). Some of this work has already been reported elsewhere, as discussed in this section.

With regard to phonology, as suggested by Heine’s (1968b) vowel quality data, Gsuda has a quite extensive system of 5-level cross-height vowel harmony based on the feature Advanced Tongue Root, or [ATR], affecting noun class markers and agreement in
adjectives and verbs, as well as some aspectual morphology. While [ATR]-based harmony systems are not uncommon in West African languages, 5-level systems are rare, particularly those with ten vowels participating in the harmony system (Casali 2003, 2008, Williamson and Blench 2000). Interestingly, Anii also has an eleventh vowel (ɨ), as was discovered in 2009, which does not participate in the harmony system in the way the other vowels do. Thus, Anii appears to have a rare type of harmony system, which is described more fully in Morton (2010b) and Morton (2012b) and will be briefly presented in the following section.

Other work that I have done consists of preliminary analyses of data that is more fully presented and analyzed in this dissertation. As can be seen from this section, there has been very little work on Anii up to this point. The work mentioned above, in combination with this dissertation, represents all of the extant scholarly work on Anii.

1.3 Anii Consultants and Methodology

The data presented in this dissertation was mostly collected in Bassila, Benin during a total of three fieldwork trips, totaling almost 45 weeks in the field. A trip in 2009 is the source of much of the background data presented in this first chapter, while the majority of the data presented in the following chapters was collected in 2011 and 2012. In total, I worked with eleven consultants, ten of whom are native speakers of Gisuda Anii, and nine of whom have mostly lived in Bassila their whole lives (though a few have spent some years in other Anii villages). The eleventh actually grew up in a more northern village (Penelan), but has lived in Bassila for many years. I never worked with this consultant alone (only with a native Bassila speaker also present), and did not rely on any data he provided without getting confirmation from other consultants.

Most of the data presented here comes from work with five native Gisuda speakers, with whom I worked the most often. All of these consultants are relatively young (in their 20s), four men and one woman. All have completed some amount of secondary school, with two having completely finished high school (though not yet having passed the BAC, the final exam used to allow university entrance), and three
having gone through at least three years of secondary school. They are thus all relatively fluent in French (the language of education and government in Benin), and also speak some neighboring languages as well, with differing degrees of fluency. One of these consultants also completed Quranic school before beginning government school, so he can read and write Arabic well. All of my consultants can read and write French, and also Anii, since they are all members of a publishing team that researches, writes, illustrates and distributes a magazine in the Anii language. Most of my consultants were also involved in the development of the Anii orthography rules.

In addition to the five consultants with whom I worked most closely, there were six others who helped me with data collection for this work. Two of these are also young people who completed some level of secondary education, two men and one woman. One of those men is the native speaker of the Penelan dialect discussed above, the others are native Gisida speakers. These consultants also speak French and other local languages. Additionally, one consultant is a high school German teacher who is also fluent in French and English. He is a native Anii speaker, but actually grew up mostly in a non Anii-speaking area, so I did not rely heavily on his input (additionally, he was very busy, so did not meet with me much). Finally, I also had two older consultants (in their 40s or 50s), one man and one woman, who contributed to the data presented here. Both of them have lived in Bassila all their lives, and are native Gisida speakers. They were also quite busy, so I only met with them occasionally. The woman’s contribution mostly consisted of writing some of the texts that are quoted in the following chapters.

During the data collection sessions, I met with consultants either one on one, in groups of two, or occasionally in bigger groups. The groups of two worked well for much of the semantic elicitation, because the consultants felt more confident when they were able to talk to each other about the types of questions asked in those sessions. When they did not agree about judgments, this was noted down. Almost all of the semantic data provided below was tested with more than one speaker or group of speakers, as time permitted. For the tonal data collection, I worked in groups of four or five initially as I was attempting to determine how many phonological tone levels Anii has. Mostly, however, I worked one on one or in groups of two for the elicitation of tonal
data. In addition to the fieldwork time in Bassila, confirmation of semantic judgments or clarification regarding certain data was occasionally sought through email or (more recently) Skype, but very little new data was elicited in this manner.

With regard to the methodology of data collection, the phonological data was obtained by asking consultants (at least one, usually multiple consultants, either in the same session or in different sessions) to pronounce words and phrases multiple times until I was satisfied with my transcription of the data. All of the sessions in 2011 and 2012, and some of the sessions in 2009 were digitally recorded. The recorder used in 2009 was a Zoom H2, while in 2011 and 2012, a Zoom H4 was used. External microphones were occasionally used, but this became complicated when there were more than two people present, so in general, the built-in microphones were used, which yielded reasonably high-quality recordings. The meetings took place in an office space. The office is made of concrete, but for many of the sessions (including almost all of the 2012 sessions), the walls and ceiling were padded with foam and cloth because the room used is the recording studio for the Anii magazine. Some meetings were conducted outside (for example, when the recording studio was in use for other purposes).

The semantic data presented in this dissertation was largely obtained through elicitation sessions, though data from texts is used in support of some arguments. By elicitation in this case, I mean the elicitation of translations and acceptability judgments (as described by Matthewson 2004). The first step, since Anii sentence structure was almost completely un-studied at the beginning of my work on the language, was to get an idea of what structures exist in Anii, with a particular focus on structures whose meaning might be related to temporal and aspectual reference. This general overview was obtained by looking at texts (a number of Anii texts had been collected before I arrived in Bassila), and going through Dahl’s (1985) survey\(^\text{4}\) of tense, aspect and modality, which involves some translation and some contexts for consultants to give correct responses (for example, questions for which the consultants are asked to provide acceptable answers). This survey provided a foundation for the elicitation of more in-depth data. The general

\(^{4}\) The particular version of this survey used was translated into French and slightly modified for a West African context by Donald Winford and Bettina Migge (cf. Winford and Migge 2007), used by permission.
methodology for elicitation was to describe a situation to a consultant (or group of consultants) and ask what an appropriate utterance would be in that situation. These situations could be controlled for particular aspects of meaning being investigated. The situations were usually described in French, but sometimes Anii was used for the situations as well as the responses, particularly in eliciting question/answer pairs. Occasionally, consultants were given an utterance, and asked to describe a situation in which a given utterance could be used. Both positive data (i.e. information about acceptable utterances) and negative data (i.e. information about unacceptable utterances) were collected for many situations.

As can be seen, then, the data presented here rests mostly on the judgments and pronunciations of native Gisda speakers who have spent most of their lives in Bassila, speaking Anii daily. Since most of my consultants are younger speakers, however, there may be features of the speech of older speakers that are not found in my data. The rest of this chapter will provide a brief introduction to the structure of Gisda Anii.

1.4 The Basic Phonology of Anii

This section presents the basics of Anii phonology as a background for the data to be presented in the following chapters. Section 1.4.1 discusses the phoneme inventory of Gisda Anii, while transcriptional issues which will be important throughout this dissertation are presented in Section 1.4.2. Additionally, an overview of some basic phonological phenomena is given in Section 1.4.3.

1.4.1 Phoneme Inventory

The basic consonantal phoneme inventory of Gisda Anii is given in Table 1. Marginal phonemes are in parentheses:
There are three different reasons for which phonemes are marked as marginal. First, [v] and [z] are considered marginal because they are generally only used in words borrowed from French or Arabic, most often proper names. Older speakers who do not know either of those languages actually use the voiceless counterparts of these fricatives when pronouncing such words, which indicates that these phonemes are not part of the native Anii phoneme inventory, or at least were not, historically. The phoneme [ŋm], on the other hand, does not seem to be borrowed, but is very uncommon in Gɩsɩda (though it seems to be more common in other dialects). There are a few Gɩsɩda words that use this phoneme, though, such as [ŋmáánɩ], a discourse marker, and [ŋmálɩ], ‘completely’. It was noted as marginal only because of its extreme rarity in Gɩsɩda and connection in some speakers’ minds with other dialects.

Finally, [ts] is marked as marginal because it is a variant of the phoneme [ʧ] that occurs before mid-central vowels for some speakers. Both sounds are written with the symbol ‘c’ in the Anii alphabet. There can be variation even within a single speaker’s pronunciation of this sound, sometimes even changing word to word. Most of my consultants tend to have the [ts] pronunciation in these cases, but many older speakers have the [ʧ] pronunciation before all vowels. I have not studied this variation in detail, but it seems clear that sociolinguistic variables such as age and neighborhood within Bassila are at work here. It may also be that this is a change in progress, which could

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5 The symbol ‘g’ is used here to represent the sound usually transcribed as [ɡ]. Since this is simply a difference of font, and ‘g’ and ‘ɡ’ have never been used to represent different phonemes, I will transcribe the voiced velar stop as [ɡ] throughout this dissertation to facilitate ease of transcription.
explain why certain words seem to be more variable than others. This would certainly be an interesting question for further research. In this dissertation, however, I will simply transcribe the pronunciation most common among my consultants—that is, before mid-central vowels, I will transcribe [ts], and [ʃ] will be used elsewhere. It is crucial to remember, though, that [ts] is an allophone of /ʃ/.

Another important note about Anii consonants is that the labio-velar sounds [kp], [gb] and [ŋm] each represent a single phoneme with almost simultaneous closures both at the lips and at the velum. A more narrow transcription would be [k̪p], [g̪b] and [ŋ̪m], but I will leave the ligature mark out in my transcriptions because they make it more difficult to read certain tone transcriptions, and there are no contrasting clusters. That is, there is no contrast between [kp], [gb] and [ŋm] clusters and the single-phoneme [k̪p], [g̪b] and [ŋ̪m]. All labiovelars in Gisda are single phonemes, and there are in fact no consonant clusters except for nasal-oral stop clusters.

One final note should be made about the relationship of the transcriptions used here to the official Anii orthography. In general, I have chosen IPA transcriptions that are close to the orthography, as noted in relevant places below. There is one aspect of the orthography, however, that I do not use in my transcriptions. This aspect involves the symbol ‘ɖ’, which is used in Anii to write the phoneme [d]. The reason that ‘ɖ’ was originally included in the Anii alphabet is that Georg Elwert (cf. Elwert 1977), the anthropologist who helped develop the Anii alphabet in the 1970s, thought he heard the sound [d] from his consultant, M. Idikoukou Yacoubou GOMON. Linguists who have worked with M. GOMON in later years have not noticed this in his speech, or in that of any Anii speakers. The relevant sound is a voiced alveolar (not dental or retroflex) stop for all the speakers I have heard, but the symbol ‘ɖ’ is still that used in the Anii alphabet instead of ‘d’. For more discussion of the reasoning behind this orthographic choice, see Zaske and Atti Kalam 2014. To prevent confusion for the readers of this dissertation, however, I will use the IPA symbol ‘d’ to represent the Anii phoneme [d], despite its difference from the orthographic symbol.
Table 1 above is in some sense a narrow-transcription chart. A consonant chart that is not as detailed in describing actual pronunciation, but that makes important phonemic contrasts clearer is given in Table 2:

```
<table>
<thead>
<tr>
<th></th>
<th>labial</th>
<th>alveolar</th>
<th>alveo-palatal</th>
<th>velar/glottal</th>
<th>labio-velar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>vcl</td>
<td>vcd</td>
<td>vcl</td>
<td>vcd</td>
<td>vcl</td>
</tr>
<tr>
<td>obstruent</td>
<td>p</td>
<td>b</td>
<td>t</td>
<td>d</td>
<td>f (ts)</td>
</tr>
<tr>
<td>stops/affricates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fricatives</td>
<td>f</td>
<td>(y)</td>
<td>s</td>
<td>(z)</td>
<td>h</td>
</tr>
<tr>
<td>sonorant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nasals</td>
<td>m</td>
<td>n</td>
<td>n</td>
<td>η</td>
<td>(ηm)</td>
</tr>
<tr>
<td>glides</td>
<td></td>
<td></td>
<td></td>
<td>j</td>
<td>w</td>
</tr>
<tr>
<td>laterals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>l</td>
</tr>
<tr>
<td>liquids</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>r</td>
</tr>
</tbody>
</table>
```

**Table 2: Gisida Anii consonant phonemes showing contrasts**

This table illustrates that Gisida contrasts five places of articulation (including the doubly-articulated labiovelars) for oral and nasal stops (including the alveopalatal affricate), four for fricatives (there are no labiovelar fricatives—such phonemes are unknown in any language). Additionally, there are two glides and two liquids. The [r] is sometimes flapped instead of trilled, especially intervocally.

One final point to make about consonants in Anii is that all consonant phonemes can be syllable onsets, but only nasals and liquids can be syllable codas. There is one word, [tib], 'ten', which appears to have a final obstruent for some speakers when pronounced in isolation. This word is generally pronounced as [tibi], however, especially in connected speech, and even occasionally in isolation. Additionally, all onsets and codas consist of a single consonant sound. That is, there are no tautosyllabic consonant clusters.
Gisuda Anii has eleven vowel phonemes, as illustrated in Table 3, where [ATR] stands for the feature Advanced Tongue Root, which plays a very important role in Anii phonology. Only the back vowels are rounded:

<table>
<thead>
<tr>
<th>front</th>
<th>central</th>
<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+ATR]</td>
<td>[-ATR]</td>
<td>[+ATR]</td>
</tr>
<tr>
<td>[-ATR]</td>
<td>[+ATR]</td>
<td>[-ATR]</td>
</tr>
<tr>
<td>high</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>mid</td>
<td>e</td>
<td>e</td>
</tr>
<tr>
<td>low</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

Table 3: Gisuda Anii vowel phonemes

One important point to make here is that the symbol ‘ɩ’ is used to represent a high front [-ATR] vowel. This vowel can also be represented with the symbol ‘ɪ’, as is common for high front unrounded lax vowels in languages such as English. The symbol ‘ɪ’, however, has been used to represent a high front unrounded lax (i.e. [-ATR], in this case) vowel in many African languages (for example, in the official set of symbols recommended by the Beninese government for writing Beninese languages (Zaske and Atti Kalam 2014)). I chose to use ‘ɩ’ instead of ‘ɪ’ to represent this sound because ‘ɩ’ is the symbol used for that sound in the Anii alphabet, and (as mentioned above) I have attempted to minimize the differences between my IPA transcriptions and the Anii orthography where possible.

As Table 3 shows, most Anii vowels come in pairs, one [+ATR] and one [-ATR], except that there are two [-ATR] central vowels, high and low, and only one [+ATR] central vowel. In (2) below, taken from Morton (2012b: 72), the Gisuda vowel phonemes are given with their harmonic counterparts ([ɨ] is not included because it has no [+ATR] counterpart):

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6 Note that the sound transcribed here as [a] may be somewhere between [a] and [ə], and not quite as high as [æ]. Because there is only one low vowel (and therefore no contrasts that require precision in low vowel transcription), I have chosen the symbol that is easiest to type to represent this phoneme.

7 This transcription may be slightly too high, as this vowel is phonetically a bit lower than the canonical [i]. However, this transcription captures the fact that this vowel is a central vowel that is higher than [æ], and is also a reasonably well-known symbol.
<table>
<thead>
<tr>
<th>+ATR</th>
<th>-ATR</th>
</tr>
</thead>
<tbody>
<tr>
<td>High front:</td>
<td>i</td>
</tr>
<tr>
<td>Mid front:</td>
<td>e</td>
</tr>
<tr>
<td>Central:</td>
<td>ə</td>
</tr>
<tr>
<td>Mid back:</td>
<td>o</td>
</tr>
<tr>
<td>High back:</td>
<td>u</td>
</tr>
</tbody>
</table>

As in many African languages (cf. Casali 2003, 2008), the [+ATR] mid vowels in Gĩsida Anii are acoustically similar to the [-ATR] high vowels, and the distinction between [e] and [ɪ] and [o] and [ʊ] can be difficult for non-Anii speakers to hear. My consultants were, however, quick to correct any errors I made in this regard.

All eleven Anii vowels are phonemic. There are minimal (or near-minimal) pairs between all the harmonizing vowel pairs, as shown with the list of verb roots in (3), also taken from Morton (2012b: 72) Note that the symbol ` represents a (surface) high tone, and the symbol ` a (surface) low tone:

(3) a. rì 'trap' rì 'dance/grill'
pì ‘break/crush’ pì ‘come’
b. jé ‘detest/hate strongly’ jé ‘lend/pass’
jèdè ‘crumble’ jèdè ‘divide kola nuts’
c. wó ‘cook meat’ wá ‘meet’
dò ‘jump over’ dá ‘be there’
d. dù ‘sow’ dò ‘put/place’
fùm ‘bury’ fòm ‘farm/cultivate’
e. fòdó ‘doff (take off)’ fòrò ‘mix/knead in’
tò ‘give’ tó ‘last’

There are also minimal pairs between the two non-low central vowels, as in (4a), and between [i] and [a], as in (4b). This data is also from Morton (2012b: 72):

(4) a. pìl ‘to cook’ pàl ‘to look along’
žkiŋ ‘behind’ ŋkóŋ ‘there’
b. šilá ‘to approach’ šálá ‘to greet’
píra ‘to become’ pàra ‘to glue/stick’
The data in (3) and (4) illustrate that Anii has eleven distinct vowel phonemes, five [+ATR] and six [-ATR]. This inventory is particularly important because Anii exhibits extensive [ATR]-based vowel harmony, which will be discussed in Section 1.4.3.

As is illustrated in the examples above, Anii has two surface tone levels, high (H), represented by the symbol ’ and low (L), represented by the symbol `. These tones make lexical meaning distinctions, as shown in (5):

(5) a. ùʃilè ‘sun’  
    ùʃilé ‘day’  
 b. átó ‘stream’  
    átò ‘baboon’  
 c. dòòdòò ‘far away (in space or time)’  
    dòódóó ‘be cold’

Besides distinguishing lexical meaning, tone is also part of the grammar of Anii (i.e. tone can have grammatical meaning). This will be discussed in more detail in Chapters 5-7. The important point being made here is that tone is an important part of the phonology of Anii, and there are two surface tone levels. Surface tone will be marked on all the data given below, and no claims about the phonology underlying surface tone contrasts is made by this transcription. Underlying tone and tonemes will be discussed further in Chapters 5 and 6.

Another important aspect of Anii tonology is downstep, which is marked on all the relevant examples in this dissertation. Downstep is a tonal phenomenon which lowers tones, such that all tones following a downstep are lower than their pre-downstep counterparts (i.e. H tones after a downstep are lower than pre-downstep H tones, and the same applies to L tones). This phenomenon will be discussed in detail in Chapters 5-7, but here I will merely note that downstep is transcribed using the symbol ‘!

1.4.2 Issues of Transcription and Representation

Given the phoneme inventory presented in the previous section, transcriptions in this work generally follow standard conventions. For example, I use forward slashes (/)
to indicate an underlying form (or any non-surface form) is being transcribed and square brackets ([ ]) for surface forms for in-text discussion. In discussing specific morphemes, I generally use a transcription that reflects the surface form of each morpheme in isolation to refer to that morpheme. Data in numbered examples does not use brackets, but all such examples give surface forms unless otherwise indicated. Issues surrounding the choice of IPA symbol for certain phonemes were discussed in the previous section, so this section focuses on two other transcription conventions that will be used throughout this dissertation.

The first issue to be addressed here is that of tone transcription on consonants. The reader will have noted in the examples already given in this chapter that tone was marked on certain consonants and not on others. This transcription choice represents the fact that some Anii consonants bear tone phonologically, while others do not, as is shown in Chapters 6 and 7. If tone is transcribed on a given segment in this dissertation, a phonological claim is being made that that segment is linked to a tone-bearing unit. The details of the motivation behind this transcriptional choice (which is related to issues of syllable weight) will be discussed further in Chapter 5.

The second transcription issue that needs to be dealt with here is related to the transcription of high vowels and glides. In verb stems in Anii (and likely elsewhere in the language, as well), there is a difference in the tonal behavior of monophthongal CVV forms, diphthongal CVV forms, and CVC forms (including those that end in a glide). An example of this differing behavior is given in (6). The relevant forms are the verb stems, the final word of each sentence, which are bolded. /ń/ is a subject marker meaning ‘I’, and [bʊŋɔ'] is a far-past TAM marker whose meaning is discussed in detail in Chapter 4:

(6) a. ń bʊŋɔ' bɔm ɨ ı  'I prepared food long ago.'
b. ń bʊŋɔ' lɛɔ ɨ ʊ ɨ  'I laughed long ago.'
c. ń bʊŋɔ' ŋɛw  'I returned long ago.'

The important point here is that the tone patterns on these three verb stems are all different. The specifics of why this tonal difference occurs will be discussed further in
the tonological analysis chapters, but I present this data here to make a point about transcription choices. Specifically, (6) shows that there is a phonological difference between long monophthongs (transcribed with a sequence of two identical vowels), diphthongs (transcribed with a sequence of two non-identical vowels), and vowels followed by glides or other consonants (transcribed as a vowel followed by a consonant symbol).

The phoneme transcribed as [w] here behaves tonally exactly like all other consonants in word-final position (as will be seen in Chapter 7), suggesting that it is, in fact, the consonant phoneme [w]. The high vocoids that do not behave (tonally) like consonants are transcribed using vowel symbols. The difference between examples such as (6a) and (6b) is completely predictable based on whether the VV sequence is monophthongal or diphthongal, so there is no need for further transcription conventions in that case.

1.4.3 Basic Phonological Phenomena

This section provides a basic introduction to the phonology of Anii, with a focus on segmental phenomena, since suprasegmental phonology, the focus of the phonology section of this dissertation, will be presented in detail in other chapters. Section 1.4.3.1 discusses nasal place assimilation, Section 1.4.3.2 focuses on vowel harmony, and Section 1.4.3.3 provides a brief overview of a process of [g]-deletion.

1.4.3.1 Nasal Place Assimilation

As Heine (1968b) noted, nasals in Anii assimilate to the place of a following consonant. This occurs both within words and across word boundaries. Example (7) illustrates this assimilation phenomenon across morpheme boundaries, first in (7a) with class F noun class markers (a nasal consonant that precedes the noun stems). The symbol ‘-’ represents the morpheme boundary between the markers and the noun stems (and indeed will be used throughout this dissertation to indicate morpheme boundaries in

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8 Noun classes are grammatical categories in Anii which are marked with noun class markers that precede noun stems. This system will be presented in detail below. Anii noun classes are named with letters from the Anii alphabet.
transcriptions). (7b) illustrates nasal place assimilation with a nasal-final possessive form. The nouns without the possessives are on the left, and those with the possessives on the right. Notice that the place of articulation for the final nasal of the possessive matches that of the following consonant. The relevant nasal consonants are bolded:

(7) a. transcription    gloss    transcription    gloss
    ñ-timà    ‘work’    ñm-pá    ‘village/town’
    ñj-kóli    ‘proverb’

b. gà-ʃɛ ɩj    ‘basket’    àñ-gà-ʃɛ ɩj    ‘my basket’
    bʊ-ʃɛ ɩj    ‘baskets’    àñ-bʊ-ʃɛ ɩj    ‘my baskets’

The examples in (8) are similar, but occur across word boundaries:

(8) ń fɔŋ ɡà-wàrà    ‘I farmed a field’
    ń fɔmì ɡà-wàrà    ‘I farmed fields’
    ñ jàŋ tókò    ‘I held a shirt’
    ñ jàm i-tókò    ‘I held shirts’

The transcription convention that is used throughout this work to transcribe nasal consonants will be the same as that used in the Anii orthography (Zaske and Atti Kalam 2014). That is, the place assimilation will be transcribed within words, but not across word boundaries. In general, word boundaries are transcribed in this dissertation (with spaces) where there are word breaks in the official Anii orthography (Zaske and Atti Kalam 2014).

The left-hand column in example (9) represents a transcription of the first-person singular Group 1 subject marker that transcribes nasal place assimilation. The following column represents the type of broader transcription that is used throughout the rest of this dissertation:

There are two types of subject markers in Anii, referred to here as Group 1 and Group 2 subject markers. These two groups of markers are discussed in more detail in Section 1.5.2 below.
The alveolar nasal was chosen for the broader transcription in this case because that is the way the word is spelled in the Anii orthography.

1.4.3.2 Vowel Harmony

As mentioned above, Gisîda Anii has an extensive system of vowel harmony based on the feature Advanced Tongue Root ([ATR]). [ATR] harmony affects only specific morphemes, and is controlled by noun and verb stems. For example, noun class markers have a [+ATR] vowel when the stem they are added to contains [+ATR] vowels and a [-ATR] vowel when the stem they are added to contains [-ATR] vowels (almost all non-compound stems contain vowels with only one value of [ATR])\(^{10}\). This alternation can be illustrated by the Class E noun class marker which alternates between [+ATR] [gù-] and [-ATR] [gù-]. The former is found before [+ATR] vowel (e.g. [gù-jó] ‘tree’) and the latter before [-ATR] vowels (e.g. [gù-bó] ‘leaf’). Similar harmony effects are found in the noun class agreement markers that are attached to adjective roots.

In the verb complex, subject markers, noun class agreement markers, and some tense-aspect-modality (TAM) markers also agree in [ATR] with the vowels of the verb stem, which always share an [ATR] value. This type of harmony is illustrated with the examples in (10). The vowels that undergo harmony (in noun phrases and verb phrases) are bolded:

<table>
<thead>
<tr>
<th>narrower transcription</th>
<th>broader transcription</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>mí bòdó</td>
<td>ú bòdó</td>
<td>‘I climbed’</td>
</tr>
<tr>
<td>mí pàrà</td>
<td>ú pàrà</td>
<td>‘I glued/pasted’</td>
</tr>
<tr>
<td>ní dà</td>
<td>ní dà</td>
<td>‘I stayed’</td>
</tr>
<tr>
<td>ní tàbá</td>
<td>ní tàbá</td>
<td>‘I asked’</td>
</tr>
<tr>
<td>ní sàrà</td>
<td>ní sàrà</td>
<td>‘I walked’</td>
</tr>
<tr>
<td>ní fàŋá</td>
<td>ní fàŋá</td>
<td>‘I taught’</td>
</tr>
<tr>
<td>ní kidé</td>
<td>ní kidé</td>
<td>‘I looked’</td>
</tr>
<tr>
<td>ní kà</td>
<td>ní kà</td>
<td>‘I hit’</td>
</tr>
<tr>
<td>ní jèdè</td>
<td>ní jèdè</td>
<td>‘I fell sick’</td>
</tr>
<tr>
<td>ní jèw</td>
<td>ní jèw</td>
<td>‘I went home’</td>
</tr>
</tbody>
</table>

The exception is some loanwords (but not many).
(10) a. ù-pì  à-dʒàlà  à  ti  pèmpẹŋẹ  gù-jó  gò-bòmbònò
   CL.A-child AGR.CL.A-small AGR.CL.A IMPF clean CL.Ɛ-tree AGR.CL.Ɛ-big
   ‘The small child is\textsuperscript{11} cleaning the big tree.’

b. ù-pì  à-dʒàlà  à  ti  kide  gù-jó  gò-bòmbònò
   CL.A-child AGR.CL.A-small AGR.CL.A IMPF look.at CL.Ɛ-tree AGR.CL.Ɛ-big
   ‘The small child is looking at the big tree.’

c. bà-pì  bà-dʒàlà  bà  lèọ
   CL.Y-child CL.Y-small AGR.CL.Y laugh
   ‘The small children laughed.’

d. bà-sòrò  bà  lèọ
   CL.Y-companion AGR.CL.Y laugh
   ‘The companions laughed.’

e. gi-pé  gi  ti
   CL.Đ-stick AGR.CL.Đ break\textsuperscript{12}
   ‘The stick broke.’

f. gi-kúnú  gi  ti
   CL.Đ-okra AGR.CL.Đ break
   ‘The okra (pod) broke.’

g. ọ  nèn
   2.SG.SUBJ.GRP.1 write
   ‘You (sg) wrote.’

h. ù  ʧèré
   2.SG.SUBJ.GRP.1 learn
   ‘You (sg) learned.’

From (10), it can be seen that subject markers, agreement markers on adjectives, TAM markers, and agreement markers on verb stems have the same value of [ATR] (that of the verb stem), but that value is not necessarily shared by the nominal subject or object. This example also shows that within noun phrases, [ATR] harmony is restricted to certain domains that is approximately (but not exactly) the word. For example, note that the word [âdʒàlà], ‘small’, in (10a) is [-ATR], but the noun it modifies, [ùpì], ‘child’, is [+ATR]. What is going on here is that the feature [ATR] spreads leftward from a root onto a certain number of preceding non-root morphemes. The details of exactly how the

\textsuperscript{11} The exact temporal interpretation of this sentence is not possible without a context, since it is context-dependent, so only only possible meaning is given. No context is given here because this example is given to illustrate phonological data. The meaning of sentences like these is investigated in Chapter 3.

\textsuperscript{12} Specifically, [ti] refers to the breaking of something long and skinny (like a stick, or the seed pod of the okra plant, which is the edible portion). The word [pì] is used to refer to breaking something round or flat (perhaps [pì] is more akin to the English 'smash').
domain of harmony is defined from a structural perspective are left for future research, but it may be a phonological word, or some kind of syntactic constituent. 

While the imperfective marker illustrated in (10a-b) does undergo harmony, there are some aspect markers that do not. The perfect marker [ʧéé], for example, never surfaces with [-ATR] vowels even when it is in the exact same environment in which [tɩ] was shown to harmonize in (10). Additionally, the far past marker [bʊŋà]\(^{13}\) never surfaces with [+ATR] vowels. Compare the examples in (11) with those in (10a-b) above, particularly with reference to the TAM markers (which are bolded in (11):

(11) a. ū-pi á-dʒālā á ʧéé ɲɛmɲɛ ɲ-gujó gʊ-bɔmbɔnɔ  
\hspace{.3cm} CL.A-child  AGR.CL.A-small  AGR.CL.A  PERF  clean  CL.Ɛ-tree  AGR.CL.Ɛ-big  
\hspace{1.7cm} ‘The small child has/had cleaned the big tree.’

  b. ū-pi á bʊŋà kide ɲ-gujó gʊ-bɔmbɔnɔ  
\hspace{.3cm} CL.A-child  AGR.CL.A PST  look.at  CL.Ɛ-tree  AGR.CL.Ɛ-big  
\hspace{1.7cm} ‘The child looked at the big tree long ago.’

This data suggests that [ʧéé] and [bʊŋà], unlike [tɩ], behave like roots with respect to [ATR] harmony. In fact, as will be further supported with tone data from Chapters 6 and 7, TAM markers of this type do appear to behave more like verb stems than like other TAM markers—and historically, they were likely verb roots themselves.

Another fact bearing on the domain of vowel harmony is that [ATR] harmony does not occur within compound nouns. For example, a compound of [gà-fàlà], ‘house’ and [ù-ŋόnό], ‘old/important person’ is [ɵ-fāl-ŋόnό], ‘head of household’. Note that the compounding method is the insertion of the root of one noun between the noun class marker and the root of the second noun and the vowel of the noun class marker harmonizes with the most adjacent root, but each root retains its original [ATR] specification, providing further support for the hypothesis that noun and verb roots trigger, but do not undergo, vowel harmony. Additionally, there is vowel elision in the root [-fāl], ‘house’. This type of elision does not always happen, and it is not clear what the triggering factor here is. The phonology surrounding noun compounding is very

\(^{13}\) The meaning of these two markers is discussed in more detail and analyzed in Chapter 4.
interesting, but beyond the scope of this dissertation, so more discussion of this phenomenon will be left to future research.

[ATR] harmony is transcribed throughout this dissertation, meaning that many markers have two different forms in the data presented here, one with [+ATR] vowels and one with [-ATR] vowels. In some cases, there is uncertainty or disagreement in my data regarding the extent of vowel harmony, and that is noted where relevant.

1.4.3.3 [g]-Deletion

The final phonological phenomenon that will be presented in this chapter is that of [g]-deletion, a process which occurs intervocally when the closest preceding consonant is a [k]. It is likely that this is a dissimilation process triggered by the velar place of articulation of the preceding [k]. [g]-deletion is illustrated in (12), with pre-[g]-deletion forms in the left-hand column and surface forms (with [g]-deletion) on the right (12a) illustrates this phenomenon with second-person singular possessive pronouns (the underlying form of these pronouns is /àkɩɩ/), and (12b) illustrates [g]-deletion triggered by a negation marker (which is optional, but often used, especially in fast speech):

<table>
<thead>
<tr>
<th>Pre-Deletion Form</th>
<th>Surface Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. /àki-gá-jēj/14</td>
<td>[àkààjēj]</td>
<td>‘your (sg) basket’</td>
</tr>
<tr>
<td>/àki-gá-nó/</td>
<td>[àkàànɔ]</td>
<td>‘your (sg) mouth’</td>
</tr>
<tr>
<td>/àki-gá-bó/</td>
<td>[àkòòbó]15</td>
<td>‘your (sg) pot’</td>
</tr>
<tr>
<td>/àki-gi-fɔ/</td>
<td>[àkùùfɔ]</td>
<td>‘your (sg) vegetable’</td>
</tr>
<tr>
<td>/àki-gi-kɔ/</td>
<td>[àkììkɔ]</td>
<td>‘your (sg) belly button’</td>
</tr>
<tr>
<td>/àki-gi-tànɩ/</td>
<td>[àkììtànɩ]</td>
<td>‘your (sg) money’</td>
</tr>
<tr>
<td>/àki-gù-jò/</td>
<td>[àkùùjò]</td>
<td>‘your (sg) tree’</td>
</tr>
<tr>
<td>/àki-gù-dà/</td>
<td>[àkòòdà]</td>
<td>‘your (sg) dream’</td>
</tr>
<tr>
<td>/àki-gù-ɲòò/</td>
<td>[àkùùɲòò]</td>
<td>‘your (sg) teeth’</td>
</tr>
<tr>
<td>b. Pre-Deletion Form</td>
<td>Surface Form</td>
<td>Gloss</td>
</tr>
<tr>
<td>/kà gi bìlá ¹ ná/</td>
<td>[kìì bìlá ¹ ná]</td>
<td>‘We did not refuse.’</td>
</tr>
<tr>
<td>/kà gi bòdó ¹ ná/</td>
<td>[kìì bòdó ¹ ná]</td>
<td>‘We did not climb.’</td>
</tr>
</tbody>
</table>

14 The vowel /i/ is assumed to be the underlying vowel in the possessive /àkɩ/, ‘your (sg), as well as the underlying vowel in /áti/, ‘our’, the possessive pronoun used in example (14) below, because that is the vowel that surfaces before noun class markers consisting only of a consonant, e.g. /àki-ŋ-tàŋkɔ/, ‘your (sg) meat’, /áti-ŋ-tàŋkɔ/, ‘our meat’, /àki-m-pá/, ‘your (sg) village’, and /áti-m-pá/, ‘our village’.

15 The question of whether possessive pronouns undergo [ATR] harmony is an open one, pending further research. The data collected thus far seems to indicate that the vowels of possessive pronouns do not harmonize.
What is happening with the vowels here is apparently a combination of [g] deletion and a vowel quality change. As will be shown in the following chapters, all truly long vowels in Anii are monophthongal (all diphthongs are short). Perhaps it is this fact that causes the vowel quality to change so that the long vowel created by [g]-deletion becomes monophthongal. Another option is that the vowel of the possessive pronoun is unspecified for quality, and thus takes its quality from a following vowel, with /i/ being the ‘default’ vowel quality when there is no following vowel. What is clear is that the first vowel in the sequence changes to have the same quality as the second vowel in the sequence after [g] deletes.

As mentioned above, the deletion of [g] is apparently triggered by a [k] in the preceding syllable. Unfortunately, I know of no contexts where a [g] is in the position of the triggering consonant, so it is not certain whether a preceding [g] would also trigger this deletion. It is clear, however, that non-velar consonants do not trigger [g]-deletion, as the examples in (13) illustrate. (13) shows first-person singular possessive forms, since the first person singular possessive pronoun is very similar in form to the second person singular forms given in (12a) The [g] does not delete in these cases, but note that the vowel of the possessive pronoun does change:

<table>
<thead>
<tr>
<th>Underlying Form</th>
<th>Surface Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>/àti-gà-ʃɛ/</td>
<td>[àti-gà-ʃɛ]</td>
<td>‘our basket’</td>
</tr>
<tr>
<td>/àti-gà-ɲɔ/</td>
<td>[àti-gà-ɲɔ]</td>
<td>‘our mouth’</td>
</tr>
<tr>
<td>/àti-gà-bó/</td>
<td>[àti-gà-bó]</td>
<td>‘our pot’</td>
</tr>
<tr>
<td>/àti-gà-fɔ/</td>
<td>[àti-gà-fɔ]</td>
<td>‘our vegetable’</td>
</tr>
<tr>
<td>/àti-gà-kò/</td>
<td>[àti-gà-kò]</td>
<td>‘our belly button’</td>
</tr>
<tr>
<td>/àti-gà-táńi/</td>
<td>[àti-gà-táńi]</td>
<td>‘our money’</td>
</tr>
<tr>
<td>/àti-gà-jò/</td>
<td>[àti-gà-jò]</td>
<td>‘our tree’</td>
</tr>
<tr>
<td>/àti-gà-dà/</td>
<td>[àti-gà-dà]</td>
<td>‘our dream’</td>
</tr>
<tr>
<td>/àti-gà-pòò/</td>
<td>[àti-gà-pòò]</td>
<td>‘our teeth’</td>
</tr>
</tbody>
</table>
As the examples in (13) show, the surface form of the vowel of the possessive pronoun is not straightforwardly derived, and is obviously affected by the vowel of the noun class marker. Future research will investigate this vowel variation more fully.

What can be seen from the examples given in this section is that a [k] can cause a [g] in the following syllable to delete. Interestingly, while there are several noun class markers that begin with [g] (and therefore many [g]-initial nouns), I know of no [g]-initial verb stems or TAM markers. Thus, the only time this phenomenon applies within the verb complex is with examples like those in (12b) involving a negation marker and a [g]-initial subject marker. Also, while the possessive [g]-deletion (as in the examples in (12a)) always occurs, the [g]-deletion with negative clauses (as in the examples in (12b)) is optional (at least for some speakers in some contexts). More examples of this phenomenon are given in Chapter 7.

Section 1.4 has provided a basic introduction to Anii phonology, including a presentation of the phoneme inventory and a brief introduction to several phonological processes which affect the transcriptions and glosses used throughout this dissertation. The next section contains a brief overview of Anii morphosyntax, including the discussion of basic word order and a presentation of the noun class system.

1.5 The Basics of Anii Morphosyntax

This section presents basic elements of Anii morphosyntax. Section 1.5.1 presents and discusses the basic word order of Gsuda Anii, Section 1.5.2 provides an overview of the noun class system, and Section 1.5.3 briefly presents an issue involving subject markers.

1.5.1 Basic Word Order

As can be seen from the sentences given previously in this chapter, the most basic Anii word order is Subject-Verb-Object (SVO), as is the case with many Kwa languages (Aboh 2004, Harley 2008). This is illustrated by example (14):
(14)  gi  ƞò  å-kòná  å-rànà  
1.PL.SUBJ.GRP1 see CL:ŋ-monkey AGR.CL:ŋ-red  
‘We saw the red monkey.’

All TAM markers in Anii appear between the subject (including subject markers and noun class agreement markers) and the verb stem. There are no TAM markers in Anii that change the basic SVO word order. In many Kwa languages, imperfective clauses have been claimed to have a Subject-Object-Verb (SOV) word order (cf. Ameka 2002, Aboh 2004, Harley 2008), where other clauses are SVO. This is not the case in Anii, where imperfective-marked clauses have the same basic word order as clauses marked with other TAM markers, as illustrated in (15), where (15a) is marked with an imperfective marker, and (15b) with a perfect marker:

(15) a.  gi  ʧtëé  ƞò  å-kòná  å-rànà  
1.PL.SUBJ.GRP1 IMPF see CL:ŋ-monkey AGR.CL:ŋ-red  
‘We were/are seeing the red monkey.’

b.  gi  ñéé  ƞò  å-kòná  å-rànà  
1.PL.SUBJ.GRP1 PERF see CL:ŋ-monkey AGR.CL:ŋ-red  
‘We had/have seen the red monkey.’

As can be seen, then, verb phrases are head-initial in Anii, as are noun phrases (as was also shown in the examples in (10a-b) and (11) above). The only exceptions I know of to this basic word order occur in future clauses, which have multiple subject markers. This will be discussed further in Chapters 3 and 7. The word order in Anii is not free—non SVO clauses are generally not possible.

Appendix A provides a full paradigm of basic Anii clause types, including clauses marked with multiple TAM markers. Many of those types of clauses will also be exemplified and analyzed further in the following chapters. What is important to note here is that the basic word order in Anii is SVO, and verb phrases and noun phrases are head-initial.
1.5.2 The Noun Class System

As has been briefly mentioned above, Anii, like many Niger-Congo languages (Greenberg 1970, Bendor-Samuel 1989), has a system of noun class agreement. Noun classes in African languages are syntactic and possibly semantic categories within the nominal system of a language. In a language with a noun class system, every noun belongs to at least one noun class (and usually to at least two), and the noun class is marked on each noun in some way (i.e. by a prefix and/or a suffix). Additionally, these noun classes all trigger agreement of some kind, though the exact agreement patterns vary across languages (cf. Bendor-Samuel 1989, Nicole 1999). In Anii, adjectives agree in noun class with the noun they modify, as do demonstratives, relative pronouns, and object focus markers, while verbs agree in noun class with their subjects.

Noun classes are similar to the gender classification of nouns found in many Indo-European languages, except that 1) there are generally many more noun classes than the two or three genders of Indo-European languages, and 2) While genders generally include both singular and plural nouns, noun classes are generally either singular or plural (and there can also be a noun class for mass nouns) (Nicole 1999). Anii, for example, has eight singular noun classes, one class for mass nouns (which is included in the singular category by Zaske and Atti Kalam (2014)), and five plural noun classes.

The sentences in (16) illustrate the adjective and verb agreement patterns of all 13 noun classes. The noun class markers and agreement markers are bolded. Note that the Anii noun classes are labeled with letters from the Anii alphabet (in order from the beginning of the alphabet for ‘singular’ classes, including the mass noun class, and from the end of the alphabet for ‘plural’ classes). There is a long-standing convention of noun class numbering that is used for Bantu languages (see e.g. Bendor-Samuel 1989), but since it is not clear how the Anii classes correspond to this system (or to any other labeling convention that has been used for other language groups), no attempt has been made to label the Anii classes according to pre-existing conventions, pending further comparative research:
(16) a. Class A: 

\[ \text{ù-pì a-ʤàlà à fidá} \]

CL.A-child AGR.CL.A-small AGR.CL.A fall

‘The small child fell.’

b. Class Ë:

\[ \text{à-bòřì a-ʤàlà à fidá} \]

CL.Ë-animal AGR.CL.Ë-small AGR.CL.Ë fall

‘The small animal fell.’

c. Class B\(^1\):

\[ \text{kèkè a-ʤàlà à fidá} \]

CL.B.bicycle AGR.CL.B-small AGR.CL.B fall

‘The small bicycle fell.’

d. Class C:

\[ \text{gà-fílí gà-ʤàlà gà fidá} \]

CL.C-fish AGR.CL.C-small AGR.CL.C fall

‘The small fish (sg) fell.’

e. Class D:

\[ \text{gi-djë gi-ʤàlà gì fidá} \]

CL.D-yam AGR.CL.D-small AGR.CL.D fall

‘The small yam fell.’

f. Class E:

\[ \text{ù-fò ò-ʤàlà ò fidá} \]

CL.E-partridge AGR.CL.E-small AGR.CL.E fall

‘The small partridge fell.’

g. Class Ė:

\[ \text{gù-jò gò-ʤàlà gò fidá} \]

CL.Ē-tree AGR.CL.Ē-small AGR.CL.Ē fall

‘The small tree fell.’

h. Class F:

\[ \text{n-silà n-ʤàlà n fidá} \]

CL.F-egg AGR.CL.F-small AGR.CL.F fall

‘The small egg fell.’

i. Class G:

\[ \text{bò-tòŋà bò-ʤàlà}^{17} \text{ bò fidá} \]

CL.G-salt AGR.CL.G-small AGR.CL.G fall

‘The small salt fell.’

j. Class Y:

\[ \text{bò-pì bà-ʤàlà bà fidá} \]

CL.Y-child AGR.CL.Y-small AGR.CL.Y fall

‘The small children fell.’

k. Class W:

\[ \text{i-bòřì bà-ʤàlà bà fidá} \]

CL.W-animal AGR.CL.W-small AGR.CL.W fall

‘The small animals fell.’

l. Class Ŭ:

\[ \text{bò-fílí bò-ʤàlà bò fidá} \]

CL.Ū-fish AGR.CL.Ū-small AGR.CL.Ū fall

‘The small fish (pl) fell.’

m. Class U:

\[ \text{i-djë i-ʤàlà i fidá} \]

CL.U-yam AGR.CL.U-small AGR.CL.U fall

‘The small yams fell.’

\[ ^1 \text{There is no overt noun class marker for class B.} \]

\[ ^{17} \text{This is actually the class that consists mostly of mass nouns (at least of nouns whose English translations are mass nouns), and [bòtòŋà], ‘salt’, is generally a mass noun, referring to a quantity of salt. However, with the adjective [bòdʒàlà], ‘small’, modifying it, [bòtòŋà] means one (small) grain of salt.} \]
As the examples in (16) illustrate, a given noun root with one noun class marker can be singular, and the same noun root with another noun class marker is plural. There are patterns as to which singular classes tend to go with which plural classes, though these pairings are not guaranteed. For example, singular nouns of classes A and Ǝ are usually in class Y in the plural, but some class Ǝ nouns have plurals in class W. Class B nouns are usually in class W in the plural, the plural forms of class C nouns are almost always in class U, and singular nouns in classes D and E are generally in class U. The largest plural noun class is class T—the singular forms of nouns in this class are usually in classes E, F, or even G, for the nouns in class G (the mass noun class) that can be pluralized. There are also some cases where different speakers do not agree as to which class a certain noun belongs in. For example, all my consultants agree that the root meaning ‘house’ or ‘household’ (/-fàlà/) is in class C when singular ([gà-fàlà] is the word for ‘house’). They disagree, however, as to whether this noun is in class U or class U in the plural (i.e. either [i-fàlà] or [bò-fàlà] is understood to mean ‘houses’, but certain consultants consider [i-fàlà] to be ‘more correct’, and others [bò-fàlà]).

While in one sense, noun classes appear to be arbitrary grammatical categories, there is little doubt that (at least historically) there is some semantic basis for the categorization of nouns into noun classes (cf. Moxley 1998, Nicole 1999, Sagna 2012). In Anii, some semantic generalizations can be made regarding noun classification, but there are many exceptions that suggest that the semantics behind the noun classification system is not a productive aspect of the synchronic language. A detailed analysis of possible semantic motivations for noun classification in Anii is beyond the scope of this work, but a brief preliminary discussion is given in Appendix B.

The (historical) semantics behind the noun class categories may be behind the fact that that the same root can sometimes be used in different noun classes with a slightly shifted meaning. For example, there is the root /-pì/ which, as Heine (1968b) noted,
means ‘child’ in class A (ù-pì), but ‘seed’ in class D (gi-pì). Other examples include the root /-pà/, which means ‘palm nut tree’ in class E (gù-pà), but ‘palm nut’ in class F (mù-pà), and the root /-sàná/, which means ‘journey’ in class C (gà-sàná), ‘hospitality’ in class D (gi-sàná), and ‘stranger’ or ‘visitor’ in class Y (bà-sàná).

It is of typological interest that Anii noun classes are morphologically marked using prefixes—there is no trace of noun-class related suffixes in Anii. This system is very similar to that found in Bantu languages (cf. Welmers 1973), as mentioned above, but is quite dissimilar to the facts of the language families surrounding Anii, i.e. Kwa and Gur. The Kwa languages (with the exception of Anii and other Ghana-Togo Mountain Languages, and some Guang languages) generally have no noun-class agreement system (cf. Kropp Dakubu 1988), while Gur languages tend to have noun-class suffixes rather than (or in addition to) prefixes (cf. Nicole 1999, Plunkett 2009).

Though many Kwa languages no longer have noun-class systems (Good 2012), Anii noun classes are extremely robust. Even if class markers or agreement markers are elided in fast speech because they consist of only a vowel, they are always pronounced in slow speech, and with isolated forms. This state of affairs is not uncommon with GTM languages. In fact, the major reason that the GTM languages were originally considered a genetic group, as discussed at the beginning of this chapter, was that they, unlike most of the surrounding languages, still had robust noun-class systems (cf. Westermann 1932, Greenberg 1970, Blench 2009). Future comparative research will reveal how the noun class system of Anii fits in with the larger picture of noun classes in West Africa.

1.5.3 A Brief Note on Subject Markers

As may be apparent from the examples given above, Anii sentences (except direct commands) must have overt subjects. Sentences without full NP subjects thus have markers that I term ‘subject markers’, which are translated into English as subject pronouns. An interesting aspect of Anii grammar is that Anii has two different sets of subject markers, which are used in different types of clauses. These two sets of pronouns are given below:
Note that the third-person forms are the same between the two sets, but the other forms are different, either segmentally or tonally.

More discussion of the differing uses for these two sets of markers can be found in Chapter 3 (Section 3.3), but here I merely mention that these two sets of markers exist, and that they are in complementary distribution (though in some cases, pronouns from both sets are present in the same clause).

1.6 Conclusions

The preceding sections of this chapter have provided a brief introduction to the history and structure of Anii. All of the aspects of the language described above could prove fruitful grounds for further study. From a practical standpoint, however, the analysis of an entire language is far beyond the scope of any single work. Thus, since an analysis must focus on one aspect of any given language, it is important that the first in-depth work on the language be on a topic that can provide a solid base that can be built on by future researchers.

The rest of this dissertation, then, will focus on verbs and related morphology, since verbs form the basis of every sentence in Anii. Specifically, the morphemes that will be investigated are those that are part of what I have termed the ‘verb complex’. Recall that the elements of the verb complex include verb stems, subject markers (but not full nominal subjects), noun class agreement markers (on the verb), TAM markers, and negation markers. Investigation of other types of morphemes is beyond the scope of this dissertation.

18 It is unknown what the underlying [ATR] value of these vowels is. I have simply picked one.
The following three chapters discuss temporal and aspectual reference. Chapter 2 presents the theoretical framework used in the analysis, as well as Anii-specific diagnostics for Aktionsarten (e.g. stativity). Chapters 3 and 4 present data and analysis regarding temporal and aspectual reference in Anii. Chapters 5-7 focus on tonology, with Chapter 5 providing a theoretical introduction, and Chapters 6 and 7 presenting the data and analysis of tone in the verb complex. Chapter 8 concludes the dissertation.
The goal of this chapter is to present theoretical and empirical background on the semantics of temporal and aspectual reference in general, and on Anii clauses in particular, in order to set up the data presentation, analysis, and application in the following chapters. The first section of this chapter (Section 2.1) outlines the theoretical framework that will be used for the analysis, based on Reichenbach’s (1947) and Klein’s (1994) work on temporal and aspectual reference. Section 2.2 introduces the concept of Aktionsart and how Aktionsarten have been shown to influence temporal and aspectual interpretation in previous research on a variety of languages. Section 2.3 introduces some of the diagnostics that have been used by previous authors to determine the Aktionsarten of clauses, and discusses how those diagnostics can or cannot be applied in Anii. Finally, section 2.4 provides a conclusion for this chapter.

2.1 Theoretical Background: Temporal and Aspectual Reference

The analysis of temporal and aspectual reference of the Anii clauses presented in this dissertation largely follows Reichenbach (1947), and Klein (1994). The basic analytical assumption that will be made in this dissertation is that the temporal and aspectual reference of a finite matrix clause (in any language) is determined by the nature of the relationships among three time intervals that are specific to that clause. These intervals are: 1) the time at which the clause is produced (normally spoken or signed, but in some cases written) i.e. the Utterance Time (UT), 2) the time that the clause is about, i.e. the Topic Time (TT), and 3) the time during which the eventuality denoted

19 The temporal reference of infinitival and subordinate clauses may be evaluated with reference to times other than the utterance time. This complication will be addressed in future research, since this dissertation focuses on matrix clauses only. It is likely, in fact, that Anii does not even have infinitives.

20 I will use the term ‘eventuality’ throughout this dissertation to mean ‘event or state’. That is, the set of all eventualities includes all events and all states (cf. Bach 1981).
by the clause holds, i.e. the Eventuality Time (ET). The following subsections illustrate how different types of temporal and aspectual reference can be defined using these three intervals.

2.1.1 Temporal Reference

Temporal reference in this framework is considered to be the temporal relationship between the utterance time and the topic time of a given utterance. For example, observe the English utterances in (1):

(1) a. Situation: I am on the phone with my mother, who hears strange noises in the background and asks, ‘what are you doing right now?’ I say: I am bathing my monkey.
   b. Situation: My mother tried to phone me yesterday afternoon at 4:00, but I did not answer the phone. Now she wants to know why I did not pick up the phone at that time. I say: I was bathing my monkey.
   c. Situation: My mother asks me to come over to her house for dinner tomorrow evening at 5:00, but will not be able to come at that time because I already have other plans, so I say: I will be bathing my monkey.

The example in (1a) has present temporal reference, and the topic time is the utterance time. The topic time in this case is inferred from the discourse context—it is the specific time the speaker’s mother has asked about, i.e. ‘right now’. In (1b), the topic time is again the time that the speaker’s mother asked about, which is in this case 4:00 PM on the day previous to the utterance time. The utterance in (1b), then, has past temporal reference. In the framework presented here, this means that the topic time precedes the utterance time. Finally, the third possible type of temporal reference is illustrated in (1c), where the topic time (again given by the context) is 5:00 PM on the day following the utterance time, i.e. the time when the speaker’s mother wants her to come to dinner. In this case, the utterance time precedes the topic time, giving future temporal reference.

In many languages, temporal reference is constrained by morphemes. Such morphemes are referred to here as ‘tenses’, or ‘tense morphemes’. This will be discussed
further at the end of the following section, where the terms ‘tense’ and ‘aspect’ are defined.

2.1.2 Aspectual Reference

The topic time, utterance time, and the relationship between them (i.e. temporal reference) are still only part of the picture. The third time interval mentioned above, the eventuality time (also referred to by many authors as the situation time or the event time), plays a role in defining aspectual reference. Specifically, the aspectual reference of an utterance in this framework is defined as the temporal relationship between the topic time and the eventuality time of that utterance.

In all of the examples in (1), the eventuality time (which in each case is the time during which the monkey-bathing took place) includes the topic time. For example, in (1a), the topic time (which is the utterance time) is only part of the time that it took the speaker to bathe her monkey, since presumably it takes longer to bathe a monkey than to utter a sentence. This type of relation (\( ET \supseteq TT \))\(^{21}\) is referred to as imperfective aspectual reference.

Specifically, the examples in (1) have progressive aspectual reference, a subtype of imperfective aspectual reference in which the eventuality time of a given clause denotes one continuous interval. The term episodic will be used throughout this dissertation to refer to events (or states) that are not discontinuous (cf. Carlson 2005). Episodic imperfective aspectual reference can be contrasted with habitual aspectual reference, the second subtype of imperfective, where the eventuality time of a clause is discontinuous, as shown in (2):

(2)   Situation: A friend of mine has come to visit and is wondering why my pet monkey is so clean. I explain:
      I bathe my monkey every Monday.

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\(^{21}\) ET \( \supseteq TT \) means that the eventuality time includes or is equal to the topic time. Throughout this chapter, I will use mathematical symbols (specifically, set theory symbols) as shortcuts to write out the relationships between time intervals. The full mathematical definitions of these symbols are found in Section 3.4.2. In this chapter, I will merely define the symbols in words where applicable.
In this example, the eventuality time of the clause, i.e. the time during which the speaker bathes her monkey, is repeated every Monday, i.e. is a discontinuous interval, since the bathing does not occur in between Mondays. In comparing the examples in (1) with that in (2), it can be seen that episodic clauses express continuity of the event or state being referred to, while habitual clauses refer to the regular repetition of an event or state, which is inherently discontinuous (cf. Klein 1994, Deo 2009). For example, in the clause in (2), there are regular intervals during which the speaker bathes her monkey, but in between Mondays, there are also extended periods of time when the speaker is not bathing her monkey.

The question, then, for such clauses, is exactly how the eventuality time and topic time should be defined. A common option (cf. Klein 1994) is to say that the eventuality time in cases of habitual aspectual reference is the entire time interval during which instances of an eventuality regularly occur (even though there are intervals during that larger interval when the eventuality does not hold true). In Klein’s (1994) analysis, such clauses are also considered to also have multiple topic time intervals. Thus, the analysis for such clauses is different from that proposed for progressive clauses like those in (1) because the analysis for progressives assumes only one topic time. Comrie (1976) also proposes that habitual clauses should be analyzed differently from what he calls ‘continuous’ forms (i.e. episodic forms), a category that includes progressives.

The problem with these types of analyses is that in many languages across the world (including Anii, as will be demonstrated in Chapter 3), progressive and habitual aspectual reference are marked in the same way (cf. Comrie 1976, Payne 1997, Deo 2009). A way of modeling a marker that has both the episodic and habitual meanings like the Anii imperfective, but also accounting for languages like English where the two meanings are expressed differently, is given in Deo (2009). Deo argues that an imperfective marker (in any language) should be treated as a universal quantifier over regular partitions of a time interval that is on-going at the topic time of a given utterance. In her proposal, the difference between the progressive (episodic) and habitual readings of an imperfective clause comes from context, specifically whether the relevant partition being quantified over is topic time (episodic interpretation) or a superset of topic time
(habitual interpretation). This will be discussed further in relation to the Anii data that will be presented in Chapter 3.

It is, of course, also possible for the topic time of a given utterance to include the eventuality time, as illustrated in (3), again with an English example:

(3) Situation: I did not see my mother yesterday, and am talking to her on the phone now. She asks what I did yesterday, and I answer:
    I bathed my monkey.

In this example, the topic time (given by context, i.e. the interval that the speaker’s mother asked about) is all of yesterday, while it presumably did not take the speaker the entire day to bathe her monkey. Therefore, the topic time includes the eventuality time. This relation (TT $\supset$ ET)$^{22}$, is referred to as perfective aspectual reference.

One consequence of viewing temporal and aspectual reference in this way is that it predicts that perfective aspectual reference should be incompatible with present temporal reference. This is because it is unlikely that any eventuality time would be a short enough time interval to be included in any utterance time (recall that with present temporal reference, TT = UT)$^{23}$. And indeed, in English (and many, if not all, other languages), present perfective clauses (or at least perfective clauses with present tense marking) are restricted to very specific domains, such as play-by-play commentary (cf. Bybee 1994, Smith 1997). For this reason, I have not elicited any present perfective clauses in Anii (though the attempt could possibly yield interesting results in future research), and I will not discuss the present perfective further in this work.

Perfective and imperfective are not the only types of aspectual reference that have been described cross-linguistically. Another kind of aspectual reference that is common crosslinguistically is the perfect. Klein (1994) (among others) claimed that a clause with perfect aspectual reference is one in which the eventuality time precedes the topic time. This type of analysis works well with some types of English present perfect utterances, like the one in (4):

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22 Meaning the topic time includes the eventuality time.
23 Meaning the topic time is the utterance time.
Situation: A friend and I are discussing literature, and she asks me if I have read any of Charles Dickens’ work. I reply:
I have read *David Copperfield*.

In this case, the act of reading *David Copperfield* has been completed before the topic time, which in (4) is also the utterance time. This means that the eventuality time, the time during which the reading occurred, precedes the topic time (ET < TT).

There are, however, certain utterances with perfect marking for which such an analysis makes empirically incorrect predictions. A classic example (cf. Dowty 1979, Portner 2003, among others) is given in (5):

(5) Situation: I am living in London, and have friends coming to visit who have never been there. I do not know the city very well, so I ask a friend of mine if she knows anyone who has lived in the city for awhile (and still does), and can help me show my friends around. She says:
Mary has lived in London for 20 years.

The example in (5) is an example of the so-called ‘continuative perfect’, where the eventuality time continues through the topic time—this utterance would actually be unacceptable in a situation where Mary no longer lived in London. The availability of this kind of reading is limited only to certain types of clauses (i.e. stative clauses), as will be discussed below in the section on Aktionsarten, but the fact that such clauses exist suggests that Klein’s (1994) definition of the perfect is not descriptively adequate.

A different type of analysis of the perfect was proposed by David Dowty in 1979. Dowty suggested that the English present perfect should be taken to denote what he

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24 The reason for the claim that the TT is the UT in this case may not be obvious. One piece of evidence supporting the claim is that there is present tense marking on ‘have’. Also, if one thinks through the question being asked here, it is actually whether at the present moment, the reading of *David Copperfield* has occurred, i.e. whether the ET of the reading is finished now. See for example Dowty 1979, Klein 1994, Portner 2003 for more discussion of the merits or lack thereof of this type of analysis.

25 Meaning the eventuality time precedes the utterance time.

26 It is not guaranteed, of course, that so-called 'perfect' marking (in English, the use of the auxiliary 'have') will always have perfect aspectual reference. It could be argued that (4) and (5) illustrate two different (but homophonous in the same conjugation) markers with different meanings. In the most constrained theory, however, markers with the same form also ideally have the same meaning, if such an analysis is possible.
called an Extended Now interval. The Extended Now interval was defined by Dowty as an interval of which the utterance time is a final subinterval. The details of this type of analysis are presented in Chapter 4, but the essential point is that such an approach allows for an adequate analysis of the perfect, including the possibility of continuative readings. A modification of this analysis will thus be used to account for the behavior of the Anii perfect marker [ʧèé], as will be discussed further in Chapter 4.

A final type of aspectual reference that should be briefly discussed here is prospective aspectual reference. This type of aspectual reference occurs when the topic time precedes the eventuality time (cf. Klein 1994). An English example is given in (6) (suggested by Klein 1994:116):

(6) Situation: Discussing Socrates’ speech to his followers before his death.
   When he gave the speech, Socrates was going to die.

The topic time here is given by the first clause as the time of the speech, but the eventuality time of Socrates dying occurred after that. Anii does not appear to have a prospective marker, so this type of aspectual reference will not be discussed, except to demonstrate that clauses being discussed do not have prospective aspectual reference.

Finally, a brief terminological note must be made regarding the terms ‘tense’ and ‘aspect’. The definitions for these terms that are used here are taken from Cover and Tonhauser forthcoming, where both tenses and aspects are assumed to be natural language expressions which restrict temporal and aspectual reference respectively. Tenses form part of a grammatical paradigm and restrict temporal reference, while aspects form part of a grammatical paradigm, but restrict aspectual reference. Applying these definitions to Anii clauses will be particularly important in determining the nature of each of the markers to be discussed in the following chapters, and to address the question of whether or not Anii has tense markers.
2.1.3 Temporal Remoteness Morphemes

As discussed above, in the framework being used here, the temporal reference of a given clause is the relationship between the utterance time and the topic time, and the aspectual reference of a clause is the relationship between the eventuality time and the topic time. A natural question to ask is whether the relationship between the utterance time and the eventuality time of an utterance is relevant to the analysis of temporal and aspectual reference. Cable (2013) claims, in fact, that the morphemes that he terms 'temporal remoteness morphemes' (TRMs) in Gĩkũyũ (Kikuyu) constrain the relationship between the utterance time and the eventuality time, rather than being tenses, as previous authors had claimed. Since there is at least one marker in Anii that may be a TRM, this section discusses how TRMs are different from tenses and aspects.

In many cases, it is difficult to tell whether a given marker is a TRM or a tense. This is because a tense (which restricts the topic time) and a TRM (which restricts the eventuality time) will be acceptable in essentially the same circumstances in cases where the topic time and the eventuality time overlap, i.e. in perfective and imperfective clauses. The claim that a given marker is a TRM rather than a tense, then, can only be made on the basis of the interpretation of clauses with perfect or prospective aspectual reference. One such example that Cable (2013: 51) uses to support his claim that the Gĩkũyũ markers he analyzes are TRMs is illustrated in (7):

(7) Situation: Mwangi has been telling us for a while that he intends to travel to New York. Today, we went to his house to say goodbye, but unbeknownst to us at the time, he had already left yesterday:

Rĩĩria tũ̄ ki nyire gwake, Mwangi niarathiţe.
when 1plS-CUR-arrive-P.PRV his Mwangi ASRT-3sgS-NRP-go-PERF
'When we arrived at his (house), Mwangi had already left.'
Judgment: True/appropriate in this context (Offered as translation of English)

In order to understand this example, it is important to know that in the first clause, the verb is marked with the ‘current past’ marker. This marker is generally used in a given

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27 Cable (2013) does not explicitly define all of his abbreviations, but I assume that they should be interpreted as follows: 1plS = first-person plural subject, CUR = current past, P.PRV = past perfective, ASRT = assertion, 3sgS = third-person singular subject, NRP = near past, PERF = perfect.
clause when the eventuality denoted by that clause occurred before (but on the same day as) the utterance time. In contrast, the second clause is marked with the ‘near past’ marker, which is used in a clause when the eventuality denoted by that clause occurred recently, but not on the same day as the utterance time (e.g. on the previous day).

The important point made with this example is that the topic time of the second clause in this utterance is given by the first clause as the time when the speaker and his friends arrived at Mwangi’s house, which was on the morning of the day on which the utterance was spoken. The claim is that if the TRM in that second clause were a tense (i.e. if it denoted the relationship between the topic time and the utterance time), we would expect the current past marker to be used, that which is generally chosen to mark the same-day past. In fact, Cable claims that the current past marker would not be acceptable in this situation, and the near past marker must be used. Since the near past indicates that an eventuality occurred on the day previous to the utterance time, it must be modifying the eventuality time of the clause, i.e. the time when Mwangi actually left for New York, rather than the time at which the speaker learned that Mwangi had left.

Anii does not express as many degrees of temporal remoteness as Gĩkũyũ does, but the question of whether the Anii far-past marker [bɔŋà] is a tense or a TRM will be addressed in detail in Chapter 4. Since very few languages (possibly only one thus far) have been claimed to have TRMs in the sense defined here, the answer to this question is of great typological interest.

2.1.4 Determining the Topic Time in Narrative Discourse

A final topic that should be discussed in this section is that of how the topic time is determined for a given utterance. In each utterance in (1), for example (repeated below), the topic time is a specific time that the speaker’s mother had asked her about in the preceding discourse context, ‘right now’ in (1a), ‘yesterday afternoon at 4:00’ in (1b), and ‘tomorrow evening at 5:00’ in (1c).
(1) a. Situation: I am on the phone with my mother, who hears strange noises in the background and insists on knowing what I am doing right at this moment. I say:
   I am bathing my monkey.

b. Situation: My mother tried to phone me yesterday afternoon at 4:00, but I did not answer the phone. Now she is talking to me and wants to know why I did not pick up the phone at that time. I say:
   I was bathing my monkey.

c. Situation: My mother asks me to come over to her house for dinner tomorrow evening at 5:00, but will not be able to come at that time because I already have other plans, so I say:
   I will be bathing my monkey.

In general (cf. Partee 1984, Hinrichs 1986, Dowty 1986, Muskens 1995), authors have claimed that the topic time of a clause is can be constrained by temporal adverbials, either in the discourse context, as in (1), or in the utterance itself. If there are no relevant adverbials, the topic time of a given (eventive\textsuperscript{28}) utterance is assumed to immediately follow the topic time of a preceding utterance (if there is one). In other words, the topic time of every eventive utterance in a (narrative) discourse can be thought of as being shortly after the topic time of the preceding clause, while stative utterances are interpreted at the same topic time as the immediately preceding utterance (cf. Dowty 1986). For example, observe the discourse in (8):

(8) I went into the woods. The sun was hot. I sat down on a log.

On hearing this discourse, an English speaker would understand that the speaker sat down on the log after she went into the woods. That is, the topic time of the third clause is after the topic time of the first (and second) clause. The topic time of the second clause, however, is the same as the first clause. An English speaker would understand this discourse to mean that the sun was hot while the speaker went into the woods, not that it became hot after the speaker entered the woods.

As many authors have also noted (cf. Dowty 1986, Smith 1997), progressive clauses behave like stative clauses in this respect (and, in fact, in other respects as well, \textsuperscript{28}The concepts of stative and eventive clauses will be discussed in the following sections.)
as will be discussed in detail below and in Chapter 3). This can be illustrated by changing the discourse in (8) only slightly:

(9) I went into the woods. The sun was shining. I sat down on a log

In the discourse in (9), the sun is understood to have been shining while the speaker went into the woods. In other words, as was the case with the stative clause in the previous discourse, the topic time of the progressive clause in (9) has not advanced.

Following these authors, then, I assume that stative and progressive clauses do not advance the topic time in a narrative discourse, but other clause types do. These principles for determining the topic time of a given clause in a discourse will be used to analyze some of the data to be presented in the following chapters, specifically data taken from texts. Of course, it is logically possible that Anii behaves differently from English in this respect, but since I know of no evidence that suggests the two languages differ in this way, I will assume that the discourse principles developed for English also hold in Anii. Further research on Anii discourse will show whether or not this assumption is valid, but such research is beyond the scope of this dissertation.

The basic theoretical background that has been presented in this section will be built on in the following chapters as is relevant to the data that will be presented. The next two sections focus on defining and exemplifying different Aktionsarten in Anii.

2.2 Theoretical Background: Introduction to Aktionsarten

It has long been noted (cf. Ryle 1949, Vendler 1967, Dowty 1979, 1986) that there are differences in the properties of clauses that seem to come from the lexical content of the clauses, rather than from a difference in grammatical markers. For example, the clause in (10a) is a perfectly acceptable English sentence, but that in (10b) is not, although their structures are parallel:
This acceptability difference is due to the fact that the verb 'run' denotes an event, while the verb 'know' denotes a state.²⁹ Theoretically speaking, the predicates in (10) have different Aktionsarten.³⁰

Aktionsarten are assumed here (following Dowty (1979, 1986)³¹) to be properties of clauses which are derived partially from the lexical meaning of the predicate (i.e. the main verb and any complement or verbal modifier that may be present, excluding tense and aspect markers) of a given clause, as is discussed further below. Dowty (1986) distinguishes three basic types of Aktionsarten in clauses. These three types are: 1) stative clauses 2) atelic eventive clauses (activities), which denote events without a defined end point or goal, and 3) telic eventive clauses (accomplishments/achievements), which denote events with a defined end point or goal. The definitions given by Dowty (1986, 42) for these three types are in (11) below, along with the canonical examples he provides:

(11) a. A clause \( \phi \) is stative iff it follows from the truth of \( \phi \) that at an interval \( i \) that \( \phi \) is true at all subintervals of \( i \).
   Example: John was asleep from 1:00 until 2:00 PM
b. A clause \( \phi \) is an activity (i.e. an atelic event) iff it follows from the truth of \( \phi \) at an interval \( i \) that \( \phi \) is true of all subintervals of \( i \) down to a certain limit in size.
   Example: John walked from 1:00 until 2:00 PM
c. A clause \( \phi \) is an accomplishment/achievement (i.e. a telic event) iff it follows from the truth of \( \phi \) at an interval \( i \) that \( \phi \) is false at all subintervals of \( i \).
   Example: John built a house from September 1 until June 1.

²⁹ It could be argued that the unacceptability of (10b) here is due to the fact that ‘know’ is a transitive verb and there is no object in this sentence. I argue that this is a separate issue, however, since the sentence ‘I know’ can be uttered in cases where the object has already been mentioned in a discourse (for example, ‘I know’ is often used in response to the sentence ‘I love you’ in movies). In contrast, the sentence ‘I am knowing’ is not acceptable in any context I can think of.
³⁰ The concept of Aktionsart as presented here is partially related to the concept of 'lexical aspect' (cf. Vendler 1967), but is broader, referring to whole clauses, not just to verbs or predicates. This is discussed further below.
³¹ Actually, Dowty (1986) discusses Aktionsarten with reference to sentences, rather than clauses, but everything he says can be expanded without significant modification to include not just main clauses, which can stand alone as sentences, but also many subordinate clauses. Therefore, I use the term ‘clause’ instead of ‘sentence’ here, but this does not change the analysis being discussed.
In the example given in (11a), John was asleep constantly from 1:00 until 2:00 PM. There is no time interval between 1:00 and 2:00 PM when it was not true that John was asleep. In contrast, in (11b), there are small intervals between 1:00 and 2:00 PM when it is not true that John walked. For example, it can not be true that John walked within an interval that is only 1/100 of a second long. He may have moved a foot a bit, but the interval is too short for John to have completed all the parts of the action of walking, and thus for it to be true that John walked. The example in (11c) is not true of any interval before June 1—it cannot be said that John built a house until the house has been completely built.

Other authors have proposed further subdivisions of these Aktionsart categories. For example, Vendler (1967) distinguished two types of telic events, accomplishments and achievements. He was talking about predicates, rather than clauses, however, so the two analyses are not fully comparable. The claim Vendler made is that accomplishments are events that happen over time (like building a house), while achievements are fairly abrupt changes between one state and another (like dying). Smith (1997) (also talking about verbal predicates) distinguished even further, between types of achievements. She discussed achievements that tend to be instantaneous but repeated events (involving successive state changes), for example knocking. She refers to this type of achievement as ‘semelfactives’, and distinguishes between semelfactives and other achievements that in most circumstances denote one-time occurrences (involving only one change of state). The only Aktionsart divisions that affect temporal and aspectual reference in Anii, however, are those proposed by Dowty (1986). Therefore, this work will concentrate only on the three major categories discussed in (11), which have been shown to influence temporal and aspectual interpretation in many languages.

Such influence is discussed extensively by Bohnemeyer and Swift (2004), who claim that in German, Inuktitut and Russian the aspectual reference of certain types of

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32 Dowty (1986) did, however, say that verbs and verbal predicates, as well as full sentences, should be considered to have Aktionsarten, and that the Aktionsarten of verbs affects that of predicates which in turn (in combination with other clausal elements) affects that of clauses. This is discussed further in Section 2.3 below.

33 Smith actually was discussing only verbs, not full predicates, but her claims can be fairly easily extended to apply to predicates that are longer than just a verb form.
clauses is affected by telicity. In particular, they compare atelic events (activities) and states to telic events (accomplishments/achievements). They argue that clauses in these languages that are not overtly marked for aspect (“unmarked clauses”) have “default interpretations” (in out-of-the-blue contexts) that differ depending on telicity. Lin (2005) makes a similar claim for Mandarin Chinese. The specific claim is that in these languages (and others like them), unmarked telic clauses have perfective interpretation, while unmarked atelic clauses have imperfective interpretation.

For example, according to Bohnemeyer and Swift, in Tarramiut Inuktitut, unmarked clauses with telic predicates have perfective aspectual reference, but those with atelic predicates have imperfective aspectual reference. This is illustrated in (12), taken from Bohnemeyer and Swift (2004: 267), where (12a) has a telic predicate, and (12b) an atelic one. Note that PAR stands for ‘participial’, which is the apparently the standard indicative mood in this dialect:

(12) a. Anijuq
   ani-juq
   go.out-PAR.3.SG
   ‘He/she went out.’

   b. Pisuttuq
   pisuk-juq
   walk-PAR.3.SG
   ‘He/she is walking.’

Bohnemeyer and Swift (2004) also briefly discuss a second type of language, which they exemplify with Ewe (see also Ameka 2008), a Kwa (Gbe) language spoken mostly in southern Togo and Ghana. In this second type of language, telicity does not affect the temporal or aspectual interpretation of clauses like it does in Russian and Chinese, but dynamicity (the difference between eventive and stative clauses) does affect temporal and aspectual interpretation. In Ewe, the claim is (cf. Ameka 2008), unmarked eventive clauses have perfective interpretation in “out-of-the-blue contexts”, while unmarked stative clauses have imperfective interpretation in such contexts.
Bohnemeyer and Swift (2004) also claim that in such languages, forms without aspect marking (which may or may not have tense marking) are used in stative clauses that have imperfective interpretation, but that eventive clauses must have aspectual marking in order to have imperfective aspectual reference. One example that they discuss is from English, which they also claim to be a dynamicity-dependent language. Compare (13a) and (13b) below, modified from Bohnemeyer and Swift’s examples:

(13) a. Situation: I went to visit my sister at 4:00 PM yesterday. My mother wants to know what happened on that visit, so I am telling her about it:
When I arrived, she was ill.

b. Situation: I went to visit my sister at 4:00 PM yesterday. My mother wants to know what happened on that visit, so I am telling her about it:
When I arrived, she was watching TV.

The second clause in (13a) is stative, and there is tense marking (‘was’ is a past tense form) but no aspect marking. In (13b), however, the second clause contains an atelic eventive predicate, and thus progressive marking (‘-ing’) is required for imperfective interpretation to be possible. Without the progressive marking, the clause would be “When I arrived, she watched TV”. The second clause of that sentence cannot have progressive interpretation—it would only be (possibly) acceptable in a situation in which the sister began watching TV after the speaker arrived.

Other authors have also claimed that Aktionsarten affect temporal and aspectual interpretation in a variety of languages, particularly in clauses with no tense and/or aspect marking. Winford and Migge (2007), for example, claim that dynamicity affects the interpretation of unmarked clauses for the Gbe family of languages, as well as for three Surinamese Creoles that probably have Gbe substrates. Harley (2008) also makes a similar claim for Tuwuli, a Kwa (GTM) language spoken in Ghana. An example from Sranan Tongo, a Surinamese Creole (examples taken from Winford and Migge 2007, situations taken from their modification of Dahl’s (1985) tense-aspect survey), is in (14), where (14a) is an eventive clause and (14b) is a stative one. Neither of these clauses has any tense or aspect marking:

49
(14) a. Situation: Response to the question ‘what happened when you arrived in the village yesterday?’

Den kiri a kownu
they kill DET king
‘They killed the king.’

b. Situation: The speaker is talking (in general) to a friend about a lake:

Di wata aki koto
DET water here be.cold
‘The/this water here is cold.’

The important point to note here is that the eventive clause in (14a) has past perfective temporal and aspectual reference, while the stative clause in (14b) has present imperfective temporal and aspectual reference. Constructions such as this, in which eventive and stative clauses have these differing interpretations were termed ‘factative’ by Welmers (1973), and are not uncommon in African languages (cf. Welmers 1973 for Igbo and Yoruba, Childs 1995 for Kisi, Cover 2010 for Badiaranke). An analysis of similar constructions in Anii will be given in Chapter 3.

Other languages for which Aktionsarten have been claimed to affect temporal and/or aspectual reference include Paraguayan Guarani (Tonhauser 2006, 2011), St'át'imcets (Matthewson 2006), Kalaallisut (Shaer 2003, Bittner 2005), and Yucatec Maya (e.g. Bohnemeyer 2002). None of these are African languages, but there are also many descriptions of other languages, particularly West African Niger-Congo languages, which seem to indicate that Aktionsarten plays a role in temporal and aspectual reference, though this has not yet been demonstrated through detailed semantic analysis. These languages include Nawuri, a Kwa language spoken in Ghana (Casali 1995), Obolo, a Cross River language spoken in the Niger Delta area of Nigeria, Yoruba, a West Benue-Congo language spoken in southwestern Nigeria, Ejagham, an Ekoid Bantu language of Southwest Cameroon, Doyayo, and Ubangian language from Northern Cameroon, Godié, a Kru language of Côte d'Ivoire, Kisi, an Atlantic language spoken in Guinea, Liberia and Sierra Leone (Nurse, Hewson and Rose 2010), as well as Temne, a Southern Atlantic language of Sierra Leone (Wilson 1961).
Given that Aktionsarten have been claimed to affect temporal and aspectual reference in many different languages, determining the Aktionsarten of Anii clauses should be a priority in studying temporal and aspectual reference in Anii. Many researchers (including myself in previous research on Anii (Morton forthcoming)) make the assumption that the Aktionsarten of any given clause in a language being studied is the same as that of the French or English translation of that clause. For many utterances, this may be the case, particularly if the translations are close in meaning. However, there are many ways in which translations do not capture the full meaning of the original form, particularly if the semantics of that original form have not been carefully analyzed during the translation process.

For example, there is an Anii verb stem, /\riŋi/, whose best translation into English is the English verb stem ‘fill’. However, closer investigation reveals that /\riŋi/ has different properties from the English ‘fill’. For example, compare (15a) and (15b):

(15) Situation: Your mother is thirsty, and she sent you to the well with an empty bottle, and asked you to fill it with water. You do that, and when you come back, your sister asks you why you were gone. You tell her:

a. English: I filled the bottle
b. Anii: #n\riŋi ʼkpálábâ34
   L.SG.SUBJ.GRP1 fill  CL.Bottle
   Intended Interpretation: ‘I filled the bottle’

The English sentence in (15a) is perfectly acceptable in this context, but its Anii counterpart is not. In (16), however, where the lexical properties of the concept of filling a bottle are different, both the English and the Anii utterances are acceptable:

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34 The only way to express this sense of the English ‘fill’ in Anii is to specify what substance fills the bottle, as illustrated here:

Situation: Your mother is thirsty, and she sent you to the well with an empty bottle, and asked you to fill it with water. You go and when you come back, your sister asks you why you were gone. You tell her:

n\riŋi ʼkpálábâ  bů-tô
L.SG.SUBJ.GRP1 fill  CL.Bottle CL.G-water
I filled the bottle with water

Since this type of construction is not central to the point being made here, it is not discussed further.

51
(16) Situation: You are a genie, and you live in a bottle (and are the type of genie who never leaves the bottle unless you no longer fit inside it). In the world of genies, you cannot move into a bigger bottle unless you are so big that there is no more room for you in your old bottle. Your friend (also a genie) sees that you have a new bottle and asks what happened. You say:

a. English: I filled the bottle
b. Anii: ń riŋí kpálábá
   1.SG.SUBJ.GRP fill  cl.B.bottle
   ‘I filled the bottle’

Using the definitions of the different Aktionsarten categories given above, then, the English sentence “I filled the bottle” can be a telic eventive clause, as in (15) where, even though the clause is true at a given interval (once the bottle has been filled), it is not true at any stage before the bottle is completely full, i.e. it is not true at any subintervals of that interval. The Anii clause ń riŋí kpálábá, ‘I filled the bottle’, however, cannot be telic, as shown in (15). This clause is only acceptable with the sense in (16), where the clause is stative according to Dowty’s (1986) definitions.

The fact demonstrated by (15) and (16), i.e. that the Aktionsart of the translation of a given clause is not necessarily the same as the Aktionsart of the original clause, illustrates the need for an analysis of Aktionsart in Anii that does not depend on translations from other languages. Section 2.3 outlines efforts to find Anii-internal diagnostics for Aktionsarten in addition to Dowty’s (1986) definitions given above.

### 2.3 Empirical Background: Anii-Internal Diagnostics for Aktionsarten

There are many diagnostics for Aktionsarten in the literature (cf. Lakoff 1965, Vendler 1967, Dowty 1979, 1986), which were generally developed for English. In this section, I discuss some of the diagnostics that have been used by previous researchers, illustrate why some do not work in Anii, and exemplify how others do. The two major divisions between clause types that will be investigated here are, first, the difference between stative and eventive clauses, and second, the difference between telic and atelic eventive clauses.
Many of the diagnostics discussed here require the placement of a given verbal predicate into some kind of frame sentence. This means that these diagnostics are actually determining the properties of predicates, rather than clauses. Since, however, as stated above, the Aktionsarten of clauses are assumed to be partially derived from the lexical properties of verbal predicates, this is not an insurmountable problem. In talking about his tests for Aktionsarten (as discussed above), Dowty (1986: 43) says that, “if a predicate when combined with enough definite NPs to form an atomic sentence (but without the addition of indefinite plurals, progressives, or aspectual adverbs) meets a certain one of these tests, then the lexical predicate itself is to be classed accordingly”. Thus, while the focus in this section is on the Aktionsarten of predicates, the reader should remember that the Aktionsarten of clauses is partially derived from that of the predicates they contain. The affect of predicate Aktionsarten on clause Aktionsarten will be demonstrated in the following chapters.

The Anii data and acceptability judgments given below were obtained from at least five different consultants, sometimes in groups of two, sometimes one-on-one. For some of the clauses, different possible contexts were discussed, and that information is also given below if it is relevant to the points being made. The claims about Anii that are reported below are generally consensus claims (that is, all of the consultants agreed on acceptability or not), unless otherwise stated. Each successful diagnostic was tried with at least 50 different predicates, equally divided (as much as was possible) between those whose translations are stative, those whose translations are telic, and those whose translations are atelic. A full chart of the results of applying these diagnostics to these 50 sample predicates is given in Appendix C.

2.3.1 Stative Versus Eventive Clauses

The first set of diagnostics to be discussed are those which indicate whether a given predicate is stative or eventive. Subsection 2.3.1.1 presents a diagnostic that works for determining stativity in Anii clauses. The following subsection (2.3.1.2) briefly discusses diagnostics that have been proposed in the literature (and shown to work in English, and sometimes other languages), but have not been successfully applied in Anii.
2.3.1.1 Stativity and Obligation

There is a claim in the literature (cf. Lakoff 1965, Dowty 1979) that stative clauses do not occur as complements of verbs such as ‘force’ and ‘pursuade’ in English. To test whether a similar diagnostic would work in Anii, the Anii construction exemplified in (17) was used. This construction is similar in meaning to the English force+complement construction:

(17) Situation: My sister and I have been trying to plan a surprise party for my brother. He suspected something and eventually got the story out of me. My sister is angry that he found out, and confronts me. I say:

à lèè àmʊ ɩ tɨ ɩ làʃɩ wàà má táŋ ɩ 3.SG.SUBJ.GRP1 do 1.SG.OBJ CL.B.obligation that 1.SG.SUBJ.GRP2 tell ‘He forced me to tell’ (lit. ‘He put an obligation on me that I should tell’)

This type of construction was fully acceptable for all the consultants in 39 out of the 50 predicates that were initially run through this diagnostic. A representative sample of these fully acceptable clauses is given in (18), with the predicates bolded in both the Anii clauses and their English translations:

(18) à lèè àmʊ ɩ tɪlɑʃɪ wàà má dĵi ōdiːo ɩ ‘He forced me to eat.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má ló ɩ ‘He forced me to speak.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má fóbá ɩ ‘He forced me to change.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má pέmɲɛɲɛ ɩ ‘He forced me to clean.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má pàrά ɩ ‘He forced me to glue.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má tsi ʃiripiːo ɩ ‘He forced me to go to Frignion.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má bódo gʊbɛnø ɩ ‘He forced me to climb a mountain.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má sára ɡɛŋɡiri ɩ ‘He forced me to walk to the mosque.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má fidá ɩ ‘He forced me to fall.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má jálá ɲkùrù ɲdɛ ɩ ‘He forced me to sell this cloth.’

In contrast, the clauses listed in (19) below are unacceptable in all contexts, though they are not ungrammatical. The English intended translations are given on the right:

(19) à lèè àmʊ ɩ tɪlɑʃɪ wàà má dʒi ōdiːo ɩ ‘He forced me to eat.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má ló ɩ ‘He forced me to speak.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má fóbá ɩ ‘He forced me to change.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má pέmɲɛɲɛ ɩ ‘He forced me to clean.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má pàrά ɩ ‘He forced me to glue.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má tsi ʃiripiːo ɩ ‘He forced me to go to Frignion.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má bódo gʊbɛnø ɩ ‘He forced me to climb a mountain.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má sára ɡɛŋɡiri ɩ ‘He forced me to walk to the mosque.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má fidá ɩ ‘He forced me to fall.’
à lèè àmʊ ɩ tɪlɑʃɪ wàà má jálá ɲkùrù ɲdɛ ɩ ‘He forced me to sell this cloth.’
One difference that might come to mind between the examples in (18) and those in (19) is that most of the clauses in (18) have intentional agents, while the clauses in (19) do not. Note, however, that the predicate ‘fall’ is included in the list in (18), and ‘fall’ does not have an intentional agent. Thus, intentionality can not explain the difference seen here.

There must, however, be some property that distinguishes the predicates in (18) from those in (19). An important point to be made here is that all the predicates in (18) involve an event, while those in (19) do not. This suggests that the important property being distinguished here is, as in similar diagnostics in other languages, stativity. It seems, then, that this diagnostic is clear—eventive predicates can be used in the type of construction being discussed here, but stative predicates cannot.

There are some examples, however, where stative predicates can be used in these constructions, but the predicates are given an inchoative interpretation, as in (20):

(20) Situation: Rahinatou was always very worried about her skin color and used lots of skin-lightening cream, but then she got married to a man who was really worried about her health, and made her stop using the creams. Her cousin, who has not seen her since before she got married, notices that her skin is darker than it used to be. Rahinatou says:

à lèè âmọ † tiłāfi wàà mà dʒíú
3.SG.SUBJ.GRP1 do 1.SG.OBJ CL.B.obligation that 1.SG.SUBJ.GRP2 be.black
‘He forced me to become dark-colored.’

In this example, the utterance is only acceptable because there has been a change in skin color. Similar situations involving inchoative interpretations have been found containing the predicates /kim/, ‘to be red/light colored, and /kʊ/, ‘to be dry’. These examples
suggest that stative clauses can occasionally be used as complements of a construction meaning ‘forced to’, but only if they can be interpreted inchoatively, i.e. only if they are interpreted as indicating a change of state, rather than simply an ongoing state. It is possible that the examples in (18) could also be made acceptable in this way if contexts are found where an inchoative reading is possible.

The data presented above has illustrated that a given predicate’s compatibility with the ‘tîlàʃì’ construction in Anii is a reliable indicator of whether or not that predicate denotes a change of state, i.e. whether it is stative (and therefore, whether any other clause containing that predicate is stative). Thus, the ‘tîlàʃì’ construction appears to be a reliable diagnostic for stativity.

2.3.1.2 Unsuccessful Diagnostics for Stativity

Other diagnostics for stativity that have been used by other authors were also investigated to see if they could work in Anii. A common diagnostic used in English (cf. Ryle 1949, Vendler 1967, Dowty 1979, 1986, Bybee 1994) is whether or not a given verb can be marked with the progressive marker ‘-ing’. It is claimed that statives cannot (usually) be so marked (though see Jóhannsdóttir 2011 for a discussion of differing claims). For example, “I am learning how to cook” is an acceptable sentence, but “#I am knowing how to cook” is not. Since Anii does not have a progressive marker (it has an imperfective marker instead, as will be shown in Chapter 3), this diagnostic cannot be used in Anii.

Another diagnostic that has been successfully used in English to distinguish eventive from stative clauses involves determining which adverbials can modify which clauses. A common claim (cf. Lakoff 1965, Dowty 1979), is that stative clauses cannot be modified by adverbs such as ‘deliberately’ or ‘carefully’. For example, “He walked carefully” is a perfectly acceptable English sentence, but “#He had money carefully” is not. Unfortunately, this diagnostic cannot yet be applied in Anii because of the difficulty in finding a satisfactory Anii equivalent to these particular adverbials. For example, the most likely Anii adverbial equivalent that has been found so far, /nûndân/, can indeed mean ‘carefully’ or ‘deliberately’, but it is most commonly used to refer to speed, to mean...
‘slowly’. This plethora of possible meanings has made attempts to apply this diagnostic tricky thus far, though in English ‘slowly’ also does not easily modify stative clauses (e.g. the unacceptability of ‘#He knew slowly’), so with more time in the field to work through the possibilities, this diagnostic could potentially be useful.

There is one other diagnostic for stativity that may work in Anii, though I have not yet been able to try it. This diagnostic is based on the claim (Lakoff 1965, Dowty 1979) that stative clauses cannot be imperative. This has not yet been tested in Anii, but may be attempted in future research. In the elicitation of tonal patterns, stative imperatives have been given by my consultants, but it is not yet clear if those forms truly have meaning. The next section will discuss diagnostics for telic versus atelic eventive clauses.

### 2.3.2 Telic Versus Atelic Eventive Clauses

Since the telic/atelic divide has been claimed to affect temporal and aspectual interpretation in other languages (cf. Bohnemeyer and Swift 2004), it is important to be able to clearly demonstrate whether or not this division affects temporal and aspectual reference in Anii. In order to determine whether or not telicity has an effect, it is necessary to have a reliable way to determine which clauses are telic and which are atelic. The following subsections discuss how commonly-used diagnostics for this difference can be applied (or not) to Anii predicates.

#### 2.3.2.1 Telicity and Adverbials

Telic and atelic clauses are most often distinguished in the literature by the type of temporal adverbials they can combine with (cf. Vendler 1967, Dowty 1979). Specifically (at least in English), durative adverbials (such as ‘for an hour’) are compatible with atelic clauses, but not with telic ones, while frame adverbials (such as ‘in an hour’) are compatible with telic predicates rather than atelic ones. Observe the clauses in (21) and (22), which are taken from Dowty (1979, 56).

(21) a. ?John painted a picture for an hour.
   b. John painted a picture in an hour.
(22) a. John walked for an hour.  
b. *John walked in an hour

The predicates in (21) are telic, and those in (22) are atelic. In English, this type of acceptability difference is often considered clear cut (though cf. Deo and Piñango 2011 for an argument that this type of diagnostic is problematic, even in English).

This type of diagnostic is difficult to apply in Anii because of the nature of Anii temporal adverbials, which has made the difference between durative and frame adverbials in Anii very difficult to elicit. This difficulty may be partially due to differences between my French and that of my consultants (likely influenced by the different ways that our first languages, English and Anii respectively, express these concepts), but is likely largely due to the fact that the interpretation of whether Anii temporal adverbials are durative or frame appears to be dependent on context as well as grammatical form.

In fact, at first glance, Anii does not appear to have any adverbials that could be argued to be frame adverbials and not duration adverbials. Consider the following examples, where the adverbial is bolded (the same adverbial is used in both examples):

(23) a. Situation: You are traveling into Bassila for the market from a far-away village. You have a partner who is already in Bassila, and is already at the stall, but you are bringing more goods. She calls early in the morning (around 7 AM) you to ask how far away you are. You say:

\[ bʊ-kɑkɪŋɔ  bʊ-ɲi\dot{o} \; ! \; nɪ, \; n \; tɪ \; ɪ ì \; må \; dā \]
\[ CL.ū-hours \; AGR.CL.ū-two \; in \; 1.SG.SUBJ.GRP1 \; FUT \; 1.SG.SUBJ.GRP2 \; be.there \]
\[ gʊ-\acute{j}à \; ! \; nı \]
\[ CL.ē-market \; in \]

‘I will be in the market (with)in two hours.’

b. Situation: You work for your mother in her market stall on Wednesdays. She calls you around 1:30 PM to ask you where you are and when you will get there to watch her stall. You answer:

\[ bʊ-kɑkɪŋɔ  bʊ-ɲi\dot{o} \; ! \; nɪ, \; n \; tɪ \; ɪ ì \; må \; dā \]
\[ CL.ū-hours \; AGR.CL.ū-two \; in \; 1.SG.SUBJ.GRP1 \; FUT \; 1.SG.SUBJ.GRP2 \; be.there \]
\[ gʊ-\acute{j}à \; ! \; nı \]
\[ CL.ē.market \; in \]

‘I will be in the market at 2:00.’ (i.e. sometime between 2:00 and 3:00)
The first thing to note here is that in (23a), the speaker is actually communicating that she will arrive in two hours or less. Specifically, this utterance would be acceptable in any situation where the speaker planned on arriving at the market between one and two hours from the time of utterance. For example, if this sentence were spoken at 10:00 in the morning, it would be acceptable if the speaker planned on arriving at any time between 11:01 AM and 12:00 noon. Similarly, in (23b), where the speaker appears to be giving a specific time, the interval being discussed is still not as specific as the English adverbial ‘at 2:00’. The phrase bʊkɔŋkɔ̠ ɪŋkɔ ɪŋɔ bʊ ɪɲɩ ɪʊ, which is literally translated as ‘two hours’, or ‘the second hour’, actually denotes the entire hour between 2:00 and 3:00.

Without a context, then, it is impossible to know if the speaker of an utterance like that in (23) is referring to a specific time (2:00-ish), or simply to a time about two hours after the utterance time. In fact, when Anii speakers want to make it clear that they are referring to a specific time, they will often give the time in French. This fact is relevant here because the size of the interval denoted by adverbials like that in (23) makes it difficult (if not impossible) to distinguish between frame and durative adverbials in some cases. For example, in response to questions like ‘how long was he working?’ in elicitation sessions, consultants tend to give beginning and ending times (e.g. ‘from 2:00 to 6:00’, with the times usually given in French, but sometimes in Anii) instead of amounts of time (e.g. ‘for four hours’).

There are, however, constructions that seem to be durative adverbials that have been found in some texts. One example is given in (24), which is taken from a folktale (re-told by Amadou AYAH GADO in a northern dialect of Anii, translated into Gisța and edited by Hakimou ATTI KALAM) about a three-year drought which was ended when a swift was sent to heaven (a three-day journey) to ask God for rain:

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35 A typical situation would be ‘Martin works for me, and is paid by the hour. He worked yesterday afternoon. You know when he was working yesterday, but I do not, so I do not know how much to pay him. I therefore ask you how long he was working yesterday. How do you answer?’

36 It is possible that these kinds of answers, when given in Anii, should be analyzed as Anii frame adverbials. More research is needed to confirm this hypothesis, however, and I do not have many Anii examples in my data.
In this example, the bolded portion is the part that might be considered a durative adverbial.

A similar durative meaning is found in the sentence given in (25), where the potential durative adverbial is again bolded. This example comes from a story written by Salimatou BABA BODY about the time she spent in Nigeria when she was younger:

(25) Situation: At one point in the story, the author describes how she was afraid to cross the road to get to the market, because there were so many cars. The following sentence is:

\[
\begin{align*}
\text{ń} & \quad \text{tá jidé} \quad \text{dáá} \quad \text{gá-kọkọ} \quad \text{gá-pólbnó} \quad \text{mà nà sàá} \\
1.\text{SGGRP} & \quad 1.\text{TAM} \quad \text{stay} \quad \text{since} \quad \text{CL.C-hour} \quad \text{AGR.CL.C-all} \quad \text{IMPF} \quad \text{wait} \\
& \quad \text{i-lóóri} \\
& \quad \text{CL.W-cars} \\
& \quad \text{‘I might stay for one hour waiting for the cars.’}
\end{align*}
\]

In comparing (24) and (25), the common thread appears to be the modification of the time interval with the adjective root /-pólbnó/, ‘all’. The adverbials /hálì/, ‘until’, in (24) and /dáá/, ‘since’, in (25) may also play a role here. These examples were given to illustrate that it may, in fact, be possible to specify durativity in Anii adverbials, but further research is needed before this issue is fully understood. Therefore, an adverbial-based diagnostic cannot be easily applied in Anii to distinguish between telic and atelic clauses. Applying such a diagnostic may be possible after further research on durative and frame adverbials, but for the purposes of this dissertation, a diagnostic based on the use of temporal adverbials is not practical.

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37 The underlying form here is /ná utó/
38 This is a nominalization of the verb [nì], ‘to rain’
2.3.2.2 Telicity and ‘Finish’ Constructions

Another diagnostic that has been used in the literature to distinguish between telic and atelic clauses (cf. Dowty 1979) is based on the claim that telic predicates are acceptable as complements of the verb ‘finish’, while atelic predicates are generally not. An English example (from Dowty 1979, 57) is in (26):

(26) a. John finished painting a picture.
    b. *John finished walking.

In Anii, the verb stem meaning ‘finish’, /bọŋó/, is used in two different kinds of constructions, but neither one of them corresponds fully to the finish+complement structure used in English. One of these constructions is probably best translated as ‘finished with’, and is illustrated in (27):

(27) Situation: You are a school teacher, and have just retired. A friend from another village has come to visit and asks you how your job is (he does not know you have retired). You tell him:
    ŋ  bọŋó ʊ ɔ-fáŋʊ ɩ ɩ-fáŋʊ
    1.SG.SUBJ.GRP 1 finish CL.E-teaching
    ‘I am finished with teaching’

It is important to note that the noun /ɔfáŋʊ/, ‘teaching’, is actually a nominalized verb stem, and it might be possible for there to be Aktionsart distinctions in this type of construction. This possibility is complicated, however, by the fact predicates that are longer than just a verb stem are usually not accepted in this type of construction.

Because of this restriction, the construction exemplified in (25) is not as useful of a diagnostic for determining Aktionsarten in Anii as related constructions that can easily involve complex predicates.

There is another Anii construction that also uses the verb /bọŋó/, ‘finish’, and which can be used with predicates of any length and complexity. An example of this construction is given in (28), in particular in the bolded clause:

39 The nominalization of a verb stem in this position is part of the construction.
(28) Situation: Excerpt from a story by Rahinatou ISSIFOU. The author was asked to describe a typical school day for her younger brothers and sisters. First she describes them getting up, bathing, and how she helps them get dressed in their school uniforms. Then there are the following clauses:

ná à là¹pi à wàà à bà tsí à ti sâlà bà-ŋònò and INORD say 3.PL.OBJ that 3.PL.SUBJ.GRP2 go INORD TAM greet CL.Y-elder mbâdéé bà dà gâ-kà láj mà.

REL 3.SG.SUBJ.GRP1 be.there CL.C-courtyard on SUB 'And then (I) told them to go greet the elders who were in the courtyard.'

Bá sâlà¹pi¹ bôŋó mà, âmò, ñ lèè 3.PL.SUBJ.GRP1 greet 3.SG.OBJ finish SUB 1.SG.FOC 1.SG.SUBJ.GRP1 make bû-tüsôdáká¹ ná kôfè⁴⁰ à dò¹ síkiri à jëè¹ pi CL.G-hot.water and CL.B.coffee INORD put CL.B.sugar INORD give 3.SG.OBJ 'When they finished greeting them, (then) me, I made hot water and coffee and put in sugar to give to them.'

The use of this type of construction appears similar in meaning to the English finish+complement construction. Another example is in (29):

(29) Situation: Nouhoum’s job is to post up the Anii magazine GôGô in all the different villages every time there is a new edition. He has already finished doing this, but his boss has been out of town and does not know this. Nouhoum’s boss calls him and tells him that he needs to go paste. Nouhoum says:

ñ pârà bôŋó
1.SG.SUBJ.GRP1 paste finish
'I already pasted.' (lit. ‘I finished pasting’)

This type of construction is acceptable with every predicate that has yet been tried. This means that this construction is not useful as a diagnostic for Aktionsarten, since it does not distinguish between predicates.

There is, however, a grammatically similar construction (with a different verb), which does appear to be useful in differentiating between telic and atelic eventive clauses. This construction uses the verb [dûr], meaning ‘extinguish’, and clauses of this type have the meaning of the total completion of a given eventuality. An example of the [dûr] construction is in (30):

⁴⁰ The word [kôfè] usually refers to powdered Nescafé, not the fully-prepared drink.
Situation: The speaker has been eating a 3-course meal. His mother calls out to see if he is done. He says:

\[ ñ_{1} d̃ĩ_{ ṭ̃ĩ-ō̃ } d̃ũ \]
1.SG.SUBJ.GRP1 eat CL.E-eat-NOM extinguish
‘I completely finished eating (all the) food.’

In some situations, both [dùr], ‘extinguish’ and /bòŋo/, ‘finish’, can be used, essentially interchangeably, as in (31), where both (31a) and (31b) are acceptable responses:

(31) Situation: You are in the shower, and have been out there a long time. Your mother wants you to come help her, so she yells to ask if you are still out there washing yourself. You answer:

a.  \[ ñ_{1} g̃ĩ_{ } b̃õŋo \]
1.SG.SUBJ.GRP1 wash.oneself finish
‘I already washed/finished washing.’

b.  \[ ñ_{1} g̃ĩ_{ } d̃ũ \]
1.SG.SUBJ.GRP1 wash.oneself extinguish
‘I completely finished washing.’

There is, however, one major difference between the two constructions exemplified in (31), which is that the [dùr] construction is not compatible with every predicate the way the /bòŋo/ construction is.

A list of a selection of the [dùr] clauses that were found to be generally acceptable is given in (32). Both the English and the Anii predicates are bolded:

(32)  \[ ñ_{ } b̃õd̃õ { } d̃ũ \]
‘I completely finished climbing.’

\[ ñ_{ } d̃ĩ_{ ṭ̃ĩ-ō̃ } d̃ũ \]
‘I completely finished eating.’

\[ ñ_{ } f̃ãñã { } d̃ũ \]
‘I completely finished teaching.’

\[ ñ_{ } j̃ãl̃ã { } ̃ãk̃ú̃r̃õ { } d̃ũ \]
‘I completely finished selling cloth(s).’

\[ ñ_{ } j̃ĩd̃ã { } d̃ũ \]
‘I completely finished calling.’

\[ ñ_{ } ̃p̃ẽm̃p̃ẽñj̃ã { } d̃ũ \]
‘I completely finished cleaning.’

\[ ñ_{ } f̃ẽr̃ { } d̃ũ \]
‘I completely finished sweeping.’

\[ ñ_{ } ̃p̃ãr̃ã { } d̃ũ \]
‘I completely finished pasting.’

\[ ñ_{ } k̃ãñk̃ĩr̃ { } d̃ũ \]
‘I am completely finished being/getting strong.’

\[ ñ_{ } w̃õd̃ã { } ̃g̃ĩt̃á̃ń̃ĩ { } d̃ũ \]
‘I am completely finished having money.’
In contrast, the predicates in (33) are not acceptable in the [dùr] construction:

\[
\begin{align*}
\text{pron}\&\text{verb} & \quad & \text{I completely } & \text{event}\text{.} \\
?\text{n} & \text{kpá} & \text{dúr} & \text{arrived.} \\
?\text{n} & \text{lùgó gitání} & \text{dúr} & \text{hid the money.} \\
?\text{n} & \text{sàrà ìfál dúr} & \text{walked to the house.} \\
?\text{n} & \text{tsí Fàrínpà dúr} & \text{went to Frignion.} \\
?\text{n} & \text{tfú ìmpí} & \text{dúr} & \text{ran to the mosque.} \\
?\text{n} & \text{fòbà dúr} & \text{changed.} \\
?\text{n} & \text{dùm dúr} & \text{jumped.} \\
?\text{n} & \text{kàlà gàsànà} & \text{dúr} & \text{shortened a journey.} \\
?\text{n} & \text{tfàm gãfíli} & \text{dúr} & \text{caught a fish.} \\
?\text{n} & \text{jálà èìbàsà dúr} & \text{sold an onion.} \\
\end{align*}
\]

Most of the predicates in (33) can acceptably occur in the [dùr] construction if they are in a context in which it is clear that they denote multiple instances of the eventuality in question, as illustrated in (34):

(34)  Situation: I am a fashion model, and during a show I have 20 changes of costume. A friend sees me backstage near the end of the show, and asks if I am going to change again. I say:

\[
\begin{align*}
\text{pron} & \text{verb} & \quad & \text{I completely } & \text{event}\text{.} \\
?\text{n} & \text{fòbà dúr} & \text{finished changing}\text{.}
\end{align*}
\]

The clause in (34) can only be acceptably uttered because there are multiple instances of changing, as is made clear in the context.

A minimal pair that further illustrates this type of acceptability difference is given in (35):

\[
\begin{align*}
\text{pron} & \text{verb} & \quad & \text{I completely } & \text{event}\text{.} \\
?\text{n} & \text{fòbà dúr} & \text{sold an onion.} \\
\end{align*}
\]

41 These clauses are marked with ? instead of # because they are only acceptable in certain contexts, as discussed below. Since the context is not specified in (33), I mark these clauses with a ?.

42 To clarify, this clause can be used in the context of a person having sold all of the onions that she brought to market (even though the word for ‘onion’ is singular). In the case of selling only one onion, however, the [dùr] construction is not acceptable. A similar claim can be made about the preceding example with catching fish.
(35) a. Situation: The door to my room is finicky and hard to completely close. However, it is not safe to leave the door open when I am not around, because I store food in that room, and the goats would get into that food. We are getting ready to go out and my sister asks me whether that door is open or closed:

\[
\begin{align*}
\text{Ir} & \quad \text{close}^{43} \quad \text{door extinguish} \\
\text{1.SG.SUBJ.GRP1} & \quad \text{CL.E-door} & \\
\text{Intended interpretation: 'I completely closed the door.'}
\end{align*}
\]

b. Situation: The doors to my room (there are two of them) are finicky and hard to completely close. However, it is not safe to leave the doors open when I am not around, because I store food in that room, and the goats would get into that food. We are getting ready to go out and my sister asks me whether those doors are open or closed. I say:

\[
\begin{align*}
\text{Ir} & \quad \text{close}^{43} \quad \text{door extinguish} \\
\text{1.SG.SUBJ.GRP1} & \quad \text{CL.T-door} & \\
\text{‘I finished closing (all) the doors.’}
\end{align*}
\]

In (35a), the utterance denotes only one door being closed, and therefore the \([\text{dùr}]\) construction is unacceptable. In contrast, the \([\text{dùr}]\) construction can be used in (35b) because there are multiple doors which are being closed, meaning there are multiple instances of door-closing.

The question to be addressed, then, is what is the difference between the completely acceptable forms in (32) and the forms in (33), which are either completely unacceptable, or only acceptable if the clause denotes multiple instances of the eventuality in question. The difference seems to be that the predicates in (32) denote eventualities that do not have a clearly-defined end point (i.e. atelic eventualities). In (33), however, there are no stative predicates, and the eventive predicates that are in this group all include some kind of culminating state change in their meaning—i.e. they are telic eventive predicates. Thus, this diagnostic identifies a difference in telicity. Stative predicates and atelic eventive predicates are completely acceptable in the \([\text{dùr}]\) construction, while telic eventive predicates are only acceptable in cases where the events are clearly repeated.

One thing to note about stative predicates in this \([\text{dùr}]\) construction is that in some cases, they are given an inchoative interpretation, as illustrated in (36):

---

43 There are many words meaning 'close' in Anii. This one means to close by twisting, and is used for doors and windows, as well as for jars and bottles with twist-on lids.

65
An utterance of this type is not used if the speaker is no longer tall, but rather when, as in (36), the speaker is no longer becoming tall, i.e. no longer getting taller. Of course, this interpretation could be due to the fact that in life experience, it is generally the case that people get taller, not shorter.

Many statives, however, are not coerced into an inchoative reading. An example where an inchoative reading is not expected is given in (37):

(37) Situation: We dyed a bunch of white paper partially red (so that each sheet is half red and half white). Once the paper is dry, we are looking through the stack and I notice that one sheet got dyed completely red. I say:

\[
gʊ-bɔ  gʊ  kɨm  \ dʊr
\]

CL.Ɛ-paper AGR.CL.Ɛ be.red extinguish

‘(This) paper is completely red.’

It seems, then, than if a clause containing a stative predicate is coerced into an inchoative reading in the [dùr] construction, this is due to expectations based on real world knowledge, rather than restrictions imposed by this construction.

Thus far in this subsection, it has been shown that the [dùr] construction in Anii is useful as a diagnostic for telicity, since it is compatible with stative and atelic eventive predicates, but not with telic eventive predicates except under specific circumstances.

This conclusion, however, is exactly the opposite of what would have been expected if the [dùr] construction were actually parallel to the finish+complement structure in English, given that in English, finish+complement clauses can be telic, but not atelic.

The difference between the two diagnostics provides yet more evidence that it is important to find language-internal diagnostics for Aktionsarten, rather than relying on English diagnostics used on translations of Anii sentences.
As further evidence of the advantages of using Anii-internal diagnostics, I note that clauses containing the stem /föl/, ‘sleep’, are not compatible with the [dùr] construction. The English translation of /föl/ is atelic by Dowty’s (1986) definition. However, /föl/ in Anii is not acceptable in the [dùr] construction, as shown in (38):

(38) Situation: Your brother wakes you up in the very early morning by accidentally making a loud noises. You decide to just get up, not bothering to go back to sleep. He apologizes and you say:

\[
#ñ föl dûr
\]

l.sg.subj.grp1 sleep extinguish

Intended interpretation: ‘I was completely finished sleeping.’

This unacceptability of the predicate [föl] in the [dùr] construction suggests that, unlike the English predicate ‘sleep’, [föl] is telic. It may be, in fact, that [föl] should be translated as ‘fall asleep’, rather than ‘sleep’. This fact illustrates again that using translations to determine Aktionsarten is an empirically inadequate methodology.

In any event, the diagnostic using the [dùr] construction appears to be a reliable method for determining telicity in Anii clauses. Therefore, the [dùr] diagnostic will be the basis for all telicity claims in the following chapters. The full list of Anii clauses that were tested in the development of this diagnostic, along with the results of running the diagnostic, is given in Appendix B.

2.4 Summary

The previous sections have introduced the theoretical concepts that will be used in the analysis in the following chapters, and detailed the methodology that was used to determine the Aktionsarten of Anii clauses. Aside from simply presenting the theoretical background necessary for the formal semantic analysis of temporal and aspectual reference, the most important point that has been demonstrated here is that using the translation of a given clause to determine that clause’s Aktionsart is problematic. Other researchers (cf. Matthewson 2004) have pointed out issues with relying on translations
when doing semantic fieldwork, and this work adds to such caveats by demonstrating translation issues involving Aktionsarten. Unfortunately, many researchers (including myself, see Morton (forthcoming)) have nevertheless relied on translations to determine Aktionsarten in their analyses of various languages, likely because of the fact that finding language-internal Aktionsarten diagnostics for an underdocumented language can be difficult and time-consuming. It is hoped that the possible diagnostics discussed in this chapter will be helpful for future researchers who are faced with the problem of determining Aktionsarten in the field.

With regard to Aktionsarten in Anii, it was shown that if a predicate is acceptable in the frame sentence “à lèè àmʊɨ tìlɛʃì wàà má ___”, ‘He forced me to ___’, then that predicate is eventive. Stative predicates are not acceptable in such sentences. Additionally, the frame sentence “ń ___ dû”, ‘I completely finished ___’, can be used to distinguish telic eventive predicates from atelic eventive predicates and stative predicates. That is, telic eventive predicates are only acceptable in such frame sentences if the context allows for the interpretation that multiple instances of the event denoted by that predicate have occurred.

The following chapters will use (and expand on) the information that has been presented in chapter 2, both the theoretical background and the diagnostics for Aktionsarten, to describe and analyze aspects of temporal and aspectual reference in Gsida Anii.
Chapter 3
Unmarked Clauses and (Im)perfective Aspectual Reference

In order to build up an understanding of temporal and aspectual reference in Anii, this chapter provides data on some of the simplest types of verb complexes in Anii. The chapter begins with an analysis of the temporal and aspectual interpretation of clauses which do not contain any overt tense, aspect or modality (TAM) markers (referred to as ‘unmarked clauses’). The chapter then builds on the analysis of unmarked clauses in order to present temporal and aspectual reference in clauses containing the imperfective marker [tɩ]. The goal of this chapter is to present the basics of temporal and aspectual reference in Anii, which will provide a foundation for the data and analysis to be presented in Chapter 4. This chapter also focuses on how Aktionsarten affect the temporal and aspectual interpretation of Anii clauses.

Section 3.1 will present data illustrating the possible meanings of unmarked clauses, focusing on how their temporal and aspectual interpretation is affected by whether the predicates they contain are stative or eventive. Section 3.2 will present data on clauses that are marked with [tɩ], illustrating how the presence of the imperfective marker interacts with Aktionsarten. These sections will illustrate that, like with unmarked clauses, the stativity of the predicate in a given imperfective-marked clause affects the temporal and aspectual interpretation of that clause.

Since the clauses discussed in Sections 3.1 and 3.2 can only have non-future temporal reference, section 3.3 will provide a brief preliminary introduction to future temporal reference in Anii, focusing on aspects of these clauses that are relevant to whether or not Anii has a future tense marker, a question which is important to the analysis of unmarked and [tɩ]-marked clauses to be presented at the end of this chapter. This data will also set the stage for further discussion of tense (or the lack thereof) in Chapter 4. Section 3.4 will propose a formal analysis of the data presented in Sections
3.1 and 3.2, crucially including how the effects of Aktionsarten can be taken into account in the analysis of temporal and aspectual reference. Finally, Section 3.5 will discuss the implications of this data and analysis for semantic theory, in particular for various proposals in the literature regarding the understanding and formal analysis of the effects of Aktionsarten on temporal and aspectual reference.

3.1 Unmarked Clauses

As was previously discussed, the simplest type of clause in Anii consists of only a subject marker and a verb stem—these clauses have no tense, aspect, or modality (TAM) marking, and are therefore termed ‘unmarked clauses’. Unmarked clauses can also contain more complex noun phrases, but crucially they have no TAM markers. Some examples of unmarked clauses in Sranan Tongo (from Winford and Migge 2007) were given in Chapter 2, and many other languages have been claimed to have unmarked clauses, which have been claimed to have restricted temporal and aspectual reference despite having no TAM markers.

For example, Casali (1995) claims that unmarked clauses in Nawuri have what he terms ‘completive’ aspect, though he does not investigate this claim in detail. Lin (2005) provides evidence that he says illustrates ‘default aspect’ (Bohnemeyer and Swift 2004) in Chinese unmarked clauses. Specifically, he claims that in Chinese, unmarked telic clauses have a ‘default’ perfective aspectual interpretation, which leads to past temporal interpretation, while unmarked telic clauses have a ‘default’ imperfective aspectual interpretation, leading to present temporal interpretation. Matthewson 2006 argues that in St’át’ímcets, Aktionsarten also affect the temporal interpretation of unmarked clauses, while Tonhauser (2006) makes the same claim for Paraguayan Guaraní.

This section will present data regarding the interpretation of unmarked clauses in Anii, so that the Anii facts can be compared to the facts of previously-described languages. An example of an unmarked clause in Anii, taken from a story told by Malokia IBRAHIM INOUSSA, is in (1):
(1) Situation: Malokia told a story about taking the exam to get into high school. As he was coming out of the exam, his older sister who lives in Nigeria called him and invited him to spend the school holidays with her. The next sentence of the story is:

\[ \text{ná ŋ tòló} \]

and I accept

‘And I accepted.’

The clause in (1) consists of a conjunction, /ná/, ‘and’, a subject marker, /ň/, ‘I’, and a verb stem, /tòló/, ‘accept’. Though not marked with tense or aspect marking, the utterance in (1) does have restricted temporal and aspectual reference, specifically past temporal reference and perfective aspectual reference, as will be shown in more detail below. Crucially, the clause in (1) can never have present temporal reference.

Not all unmarked clauses have the same interpretation, however. Compare (1) with (2):

(2) Situation: My brother and I are on the shores of a lake, trying to decide whether or not to swim. I touch the water to test its temperature and say:

\[ \text{bù-tò bù dòdòdò} \]

CL.G-water AGR.CL.G be.cold

‘The water is cold.’

The clause in (2) has present temporal reference (in this context, though in a different context, it could have past temporal reference, as will be shown below) and imperfective aspectual reference, but no tense or aspect marking. The question raised by these examples, then, is this: since neither clause has any tense or aspect marking, why does (1) have a different temporal and aspectual interpretation from (2)? The answer to this question, which will be illustrated below, is that this difference in temporal and aspectual interpretation is due in part to Aktionsarten,\textsuperscript{44} given that the clause in (1) has an eventive predicate, while the clause in (2) has a stative one.

The rest of this subsection will provide evidence for the temporal and aspectual interpretation of unmarked clauses in Anii, first for clauses with eventive predicates (both

\textsuperscript{44} Of course, context also plays a role in the differing interpretations here, but the important point to be made here is that Aktionsarten play a role.
telic and atelic) in section 3.1.1, and then for clauses with stative predicates in section 3.1.2. The data below will confirm the hypothesis that the key factor influencing temporal and aspectual reference in Anii unmarked clauses is the Aktionsart (specifically the stativity) of the predicate in each clause.

3.1.1 Unmarked Clauses with Eventive Predicates

This section will illustrate that unmarked clauses in Anii that contain telic or atelic eventive predicates are only compatible with past temporal reference and perfective aspectual reference. The clause in (3) has a telic eventive predicate, /fídá/, ‘fall’:

(3) Situation: Moumouni and Ibrahim are brothers and live in the same household. Ibrahim had gone out on his moto to run errands. About 10 minutes after he went out, he came back, very dirty, with torn clothes and a scraped leg. Moumouni asks Ibrahim if he fell while he was out. Ibrahim answers:

\[ ììì, ñ fídá \]
\[ yes 1.SG.SUBJGRP1 fall \]
\[ ‘Yes, I fell’ \]

In the context in (3), the topic time of the clause is the time interval during which Ibrahim was out. The eventuality time is the time when he fell. Since the time it took Ibrahim to fall is only part of the time during which he was absent from the house, this clause has perfective aspectual reference. Additionally, since the topic time precedes the utterance time (given that Moumouni asked about the fall after Ibrahim had already returned home), this clause has past temporal reference.

Another example of a clause with a telic eventive predicate which has past perfective interpretation is in (4):

(4) Situation: Mardjanatou is telling her friend that she lost her bucket down the well yesterday, but also got it back yesterday. Her friend asks her how she got it back, and she answers:

\[ ñ dʒɔm lɔkɔ nì \]
\[ 1.SG.SUBJGRP1 jump well into \]
\[ ‘I jumped well into the well.’ \]

45 All my consultants would like to make clear that jumping into a well is unsafe and not recommended.
The data presented thus far illustrates that unmarked clauses with telic eventive predicates are compatible with past temporal reference and perfective aspectual reference. Unmarked clauses with atelic eventive predicates are also compatible with past temporal reference and perfective aspectual reference. This is illustrated in (5) below, with the predicate /pɛɱpɛŋɛ/, ‘clean/straighten’:

(5) Situation: My friend Amadou came to my house yesterday and saw that it was messy. Today, he has come again (very early in the morning, when I have just woken up), and sees that it is clean. He assumes I cleaned yesterday. The following dialogue takes place:

Amadou:  gàláɩ tám ′ páŋá ′ ná, ó pɛɱpɛŋɛ?
What time did you clean yesterday?

Me: bó-kŋkəŋə bú-riu ni ′ ná, ɲ pɛɱpɛŋɛ
‘I cleaned yesterday between 2:00 and 3:00.’

Both clauses in (5) (i.e. both the question and the answer) have past perfective interpretation.

Another example of a past perfective unmarked clause with an atelic predicate is found in a folktale retold by Amadou AYAH GADO, and translated into Gisida (from a more northern dialect of Anii) by Hakimou ATTI KALAM. The relevant clause is bolded:

(6) Situation: The first few sentences of this story explains that long ago, there was a drought, and it did not rain for three years. The animals and people were dying of thirst. The following sentence is:

ná gà-tînà ká-gùjârî à kôl à wálá
and CL.C-land POSS-CL.B.high.king AGR.CL.B drum INORD bring.together
sâmâà ə-ŋûnîi.
CL.B.everyone CL.B-all
‘And the king of the earth drummed to bring everyone together.’

46 For phonological reasons discussed in Chapters 5-7, it is likely that a better transcription of this word is [gâlâj]. Pending a phonological analysis of tone outside of the verb complex, however, I will follow the Anii orthography in writing the final two phonemes here as a diphthong throughout this dissertation.

73
The examples above have illustrated that unmarked clauses in Anii with eventive predicates (whether telic or atelic) are compatible with past temporal reference and perfective aspectual reference.

The question raised by this data is whether or not such clauses are compatible with other types of temporal and aspectual reference. In fact, they are not, as illustrated below. Compare (7), where unmarked clauses are acceptable, with (8), where they are not:

(7) a. Situation: I am on the phone with my mother. She asks me what I did yesterday. I reply:
   ń tsɨ Frɨɲɨó
   1.SG.SUBJ.GRP1 go Frignion47
   ‘I went to Frignion.’

b. Situation: I am on the phone with my mother. She asks me what I did yesterday. I reply:
   ń jêr
   1.SG.SUBJ.GRP1 sweep
   ‘I swept.’

(8) a. Situation: I am on the phone with my mother. She asks me what I am doing right now. I reply:
   #ń tsɨ Frɨɲɨó
   1.SG.SUBJ.GRP1 go Frignion
   Intended interpretation: ‘I am going to Frignion.’

b. Situation: I am on the phone with my mother. She asks me what I am doing right now. I reply:
   #ń jêr
   1.SG.SUBJ.GRP1 sweep
   Intended interpretation: ‘I am sweeping.’

The examples in (8) illustrate that unmarked clauses with eventive predicates are not compatible with present progressive (i.e. episodic imperfective) interpretation. These clauses are also incompatible with present habitual interpretation, as illustrated in (9):

---

47 Frignion is an Anii village about 7 km from Bassila, the town where this example was elicited.
(9) a. Situation: I am on the phone with my mother. I am explaining to her why I cannot drive her to her reading class on Mondays:

\[
\begin{align*}
\#\overset{\text{1.}\overset{\text{SG.}\overset{\text{SUBJ.}}{\text{GRP}}}{{\text{1}}}}{\text{1}} & \overset{\text{go}}{\text{Frignion}} \overset{\text{CL.B.}\overset{\text{Monday each}}{\text{AGR.CL.B}}}{{\text{every}}} \\
\end{align*}
\]

Intended interpretation: ‘I go to Frignion every Monday.’

b. Situation: I am on the phone with my mother. I am explaining to her why I cannot drive her to her reading class on Mondays:

\[
\begin{align*}
\#\overset{\text{1.}\overset{\text{SG.}\overset{\text{SUBJ.}}{\text{GRP}}}{{\text{1}}}}{\text{1}} & \overset{\text{sweep}}{\text{Frignion}} \overset{\text{CL.B.}\overset{\text{Monday each}}{\text{AGR.CL.B}}}{{\text{every}}} \\
\end{align*}
\]

Intended interpretation: ‘I sweep every Monday.’

Additionally, unmarked clauses with eventive predicates are not compatible with future temporal reference and imperfective aspectual reference (either progressive or habitual). This is illustrated in (10) for progressive aspectual reference, and in (11) for habitual aspectual reference:

(10) a. Situation: I am on the phone with my mother. I am explaining to her why I will not be able to meet her at 3 PM tomorrow:

\[
\begin{align*}
\#\overset{\text{1.}\overset{\text{SG.}\overset{\text{SUBJ.}}{\text{GRP}}}{{\text{1}}}}{\text{1}} & \overset{\text{go}}{\text{Frignion}} \\
\end{align*}
\]

Intended interpretation: ‘I will be going to Frignion.’

b. Situation: I am on the phone with my mother. I am explaining to her why I will not be able to meet her at 3 PM tomorrow:

\[
\begin{align*}
\#\overset{\text{1.}\overset{\text{SG.}\overset{\text{SUBJ.}}{\text{GRP}}}{{\text{1}}}}{\text{1}} & \overset{\text{sweep}}{\text{Frignion}} \\
\end{align*}
\]

Intended interpretation: ‘I will be sweeping.’

(11) a. Situation: I am on the phone with my mother. I am explaining to her why I will no longer be able to drive her to her reading class on Mondays:

\[
\begin{align*}
\#\overset{\text{1.}\overset{\text{SG.}\overset{\text{SUBJ.}}{\text{GRP}}}{{\text{1}}}}{\text{1}} & \overset{\text{go}}{\text{Frignion}} \overset{\text{CL.B.}\overset{\text{Monday each}}{\text{AGR.CL.B}}}{{\text{every}}} \\
\end{align*}
\]

Intended interpretation: ‘I will be going to Frignion every Monday.’

b. Situation: I am on the phone with my mother. I am explaining to her why I cannot drive her to her reading class on Mondays:

\[
\begin{align*}
\#\overset{\text{1.}\overset{\text{SG.}\overset{\text{SUBJ.}}{\text{GRP}}}{{\text{1}}}}{\text{1}} & \overset{\text{sweep}}{\text{Frignion}} \overset{\text{CL.B.}\overset{\text{Monday each}}{\text{AGR.CL.B}}}{{\text{every}}} \\
\end{align*}
\]

Intended interpretation: ‘I will be sweeping every Monday.’
Unmarked clauses with telic or atelic eventive predicates also cannot have future temporal reference with perfective aspectual reference. This is illustrated in (12):

(12) a. Situation: I am on the phone with my mother. She asks me what I plan to do tomorrow:
   #ń ! tsi Fíríníó
   1.SG.SUBJ.GRP1 go Frignion
   Intended interpretation: ‘I will go to Frignion.’
   
b. Situation: I am on the phone with my mother. She asks me what I plan to do tomorrow:
   #ń jēr
   1.SG.SUBJ.GRP1 sweep
   Intended interpretation: ‘I will sweep.’

Such clauses also cannot have perfect aspectual reference, as illustrated in (13), or prospective aspectual reference, as illustrated in (14)\textsuperscript{48}:

(13) a. Situation: My job is to paste up the Anii magazine in every Anii village. I was partway through pasting up when I got in an accident. I am telling the story to a friend, who asks which villages I had been to when the accident happened:
   #ń ! tsi Fíríníó
   1.SG.SUBJ.GRP1 go Frignion
   Intended interpretation: ‘I had gone to Frignion.’
   
b. Situation: I am telling a friend that a houseguest came earlier than expected yesterday, and I was not ready for him. The friend asks what cleaning I had gotten done when the guest arrived:
   #ń jēr
   1.SG.SUBJ.GRP1 sweep
   Intended interpretation: ‘I had swept.’

(14) a. Situation: I am on the phone with my mother, and I had been telling her about plans I had before I got in an accident last week. She asks me what I had planned to do the day after the accident:
   #ń ! tsi Fíríníó
   1.SG.SUBJ.GRP1 go Frignion
   Intended interpretation: ‘I was going to go to Frignion.’

\textsuperscript{48} No clauses with eventive predicates have yet been tested for compatibility with present perfect, or present progressive reference, though I hypothesize that such clauses would be unacceptable.
b. Situation: I am on the phone with my mother, and I had been telling her about plans I had before I got in an accident last week. She asks me what I had planned to do the day after the accident:

\#\ñ

1.SG.SUBJ.GRP1 sweep

Intended interpretation: ‘I was going to sweep.’

The examples given in this section have illustrated that unmarked clauses with eventive predicates, whether telic or atelic, have specific and limited temporal and aspectual reference, despite their lack of temporal and aspectual marking. That is, unmarked clauses with eventive predicates can only be interpreted as having past temporal reference and perfective aspectual reference. Unmarked clauses with stative predicates, however, have a different range of meanings, as was suggested by example (2) above, and is further illustrated in the following subsection.

### 3.1.2 Unmarked Clauses with Stative Predicates

Two examples of unmarked clauses with stative predicates in Anii are given in (15), which is an excerpt from a conversation between Nouhoum BABA BODY SALIFOU and Hakimou ATTI KALAM:

(15) Situation: In a recorded conversation, Nouhoum has just asked Hakimou (who is a part-time cooking-oil salesman) the question ‘My friend, what do you do to find and sell cooking oil?’ The beginning of Hakimou’s reply is as follows:

\bù-ji \bù-jálaká ! ká-n-timá \kì ñ \kàŋkìř \ná, \n àmá CL.G-oil AGR.CL.G-sale POSS-CL.F-work NEG AGR.CLF be.strong NEG but ò-màn-ò ò jógò kà ntsàn ñ CL.E-travel-NOM AGR.CL.E be.a.lot FOC inside ‘The work of selling oil is not difficult, but there is a lot of traveling involved.’

Both clauses in the example in (15) contain stative predicates. The first clause contains the predicate /kàŋkìř/, ‘be strong’ (or, ‘be difficult’), and the second clause contains the predicate /jógò/, ‘be a lot’. Both clauses, then, have stative predicates. The topic time of
both of these clauses is the utterance time, since Nouhoum asked Hakimou about the state of affairs at the time of utterance.

Another example in which an unmarked clause with a stative predicate is compatible with present imperfective interpretation is given in (16):

(16) Situation: Malokia is on the phone with his father, looking at a house that he is considering buying. In describing the house, he says:

\[
\text{gà-fàlà} \quad \text{gà} \quad \text{siŋkilà} \\
\text{CL.B-house AGR.CL.B be.large} \\
\text{‘The house is big.’}
\]

As can be seen, then, in (15) and (16), unmarked clauses with stative predicates given can have present temporal reference and (episodic) imperfective aspectual reference. Many authors, in fact, have observed that stative predicates seem to be in some sense inherently imperfective and episodic (cf. Dowty 1986, Bybee 1994, Smith 1997). In other words, stative predicates are often considered incompatible with perfective interpretation, and seem to be coerced into having eventive meaning (e.g. inchoative interpretation) if they can be interpreted at all when marked with a perfective form. Such coercion does not appear to occur in Anii (perhaps because there is no overt perfective marker), and the idea that stative clauses might have perfective interpretation is not considered further in this dissertation.

It is also possible for unmarked clauses with stative predicates to have past temporal reference. An example of this, from a story written by Salimatou BABA BODY, is given in (17):

(17) Situation: This is the first sentence of a story written in response to the questions ‘what was Bassila like in your childhood?’:

\[
\text{àŋ-ɡi-ŋžála} \quad \text{ní, bàʃidi} \quad \text{k à jàŋó à tó} \\
\text{1.SG.POSS-CL.D-childhood in CL.B-Bassila NEG AGR.CL.B be.big INORD reach} \\
\text{wáå ɪ ná} \\
\text{that NEG} \\
\text{‘In my childhood, Bassila was not as big as it is now.’}
\]

78
Another example, this time with a non-negative clause, is given in (18), taken from a story written by Aboudou Razak DJABOUTOUBOUTOU SEÏDI. The relevant clause is underlined:

(18) Situation: The story describes a trip that the author had taken to Cotonou, the largest city in Benin. It gives the details of how the author got to Cotonou, and what he did there. The preceding eventive clause describes a visit to the biggest market in Cotonou, Dantokpa. After describing the trip to Dantokpa, the author wrote:

\[ \text{àmà Kötônò, ñ dà à-ŋôrò à-pôlômô mà,} \]
\[ \text{but Cotonou 1.SG.SUBJ.GRP1 be.there CL.É-month AGR.CL.É-entire SUB} \]
\[ \text{k ì tì àmò nà àdôwàà kí má sìrá} \]
\[ \text{NEG 3.sg.impers suffice 1.SG.SUBJ.NEG because NEG 1.SG.SUBJ.GRP2 be.able} \]
\[ \text{jò bù-dù tùütùúmà ná.} \]
\[ \text{know CL.Ù-places many NEG} \]

‘But Cotonou, though I was there for an entire month, it was not enough for me because I was not able to know [see] a lot of places.’

The examples given above have shown that unmarked clauses with stative predicates in Anii are compatible with either past or present temporal reference, and episodic imperfective aspectual reference. The examples in (19) illustrate that the same such clause can be acceptable with either past or present temporal reference:

(19) a. Situation: Your sister was looking everywhere for you yesterday afternoon. She asks you where you were then:

\[ \text{ń dà àfál} \]
\[ 1.SG.SUBJ.GRP1 be.there at.home} \]

‘I was at home.’

b. Situation: Your sister calls you to find out where you are right now. You answer:

\[ \text{ń dà àfál} \]
\[ 1.SG.SUBJ.GRP1 be.there at.home} \]

‘I am at home.’

Unmarked clauses with stative predicates, however, cannot have habitual aspectual reference, as is illustrated in (20). This is the case with past (20a), present (20b) and future (20c) temporal reference:
Unmarked clauses with stative predicates are also not acceptable with episodic imperfective aspectual reference and future temporal reference, as illustrated in (21):

(21) Situation: My sister asks me what I will be doing tomorrow morning at 10 AM. I answer:

#ń dá àfál
1.SG.SUBJ.GRP1 be.there at.home
Intended interpretation: ‘I will be at home.’

Additionally, unmarked clauses with stative predicates are not compatible with perfect aspectual reference, as shown in (23) or prospective aspectual reference, as shown in (24):\n
(23) Situation: I used to live in a household, but I left many years ago. When I come back for a visit, one of the neighbor children who is visiting (and does not know me) asks if I live in that household. I answer:

#àài, àmá ń dá àtijà
no but 1.SG.SUBJ.GRP1 be.there here
Intended interpretation: ‘No, but I have lived here.’

---

49 No clauses with stative predicates have yet been tested for compatibility with past perfect, or present progressive reference, though it is not expected that any such clauses presented in this chapter would be compatible with such interpretations, given the other data presented here.
(24) Situation: I am on the phone with my mother, and I had been telling her about plans I had before I got in an accident last week. She asks me what I had planned to do the day after the accident:

\[
\text{#n da afål}
\]

1.SG.SUBJGRP1 be.there at.home

Intended interpretation: ‘I was going to be at home.’

The data presented in this subsection have shown that unmarked stative clauses are only compatible with past or present temporal reference, and episodic imperfective aspectual reference. In contrast, as previously demonstrated, unmarked eventive clauses can have only past temporal reference, and perfective aspectual reference. Because there are no tense or aspect markers in any of the clauses presented in this section, I hypothesize that the difference in temporal and aspectual interpretation between these two types of clauses is due to Aktionsarten.

Before the analysis of this data is presented, it is important to know how imperfective aspectual reference can be expressed in clauses with eventive predicates, as well as habitual aspectual reference in clauses with stative predicates. For these reasons, data on the interpretation of the imperfective marker [tì] are presented in the following section.

3.2 Clauses Marked with the Imperfective Marker [tì]

As illustrated in the previous section, unmarked clauses with eventive predicates cannot have imperfective aspectual reference, and unmarked clauses with stative predicates cannot have habitual aspectual reference. This section will discuss how those meanings are expressed in Anii—with imperfective markers.

There are, in fact, two imperfective markers in Anii, which appear to have a similar aspectual interpretation (in that they both seem to be imperfective markers), though they differ in the semantic and/or syntactic contexts in which they can appear. It is not yet clear whether they differ in semantic meaning, or if their distribution differences are purely syntactic. The two markers are [tì] and [nà], with [nà] occurring in specific contexts such as relative clauses and clauses with certain types of focus, and [tì]
This section will focus on clauses marked with [tì], since those clauses are generally simpler, and [nà] will be discussed further in Chapter 4. Section 3.2.1 will present the interpretation of clauses with telic and atelic eventive predicates that are marked with [tì], while Section 3.2.2 will illustrate the interpretation of [tì]-marked clauses with stative predicates.

Recall from Chapter 2 that the Aktionsart of a clause actually comes from the combination of the Aktionsart of that clause’s verbal predicate and other clausal elements. Since the clauses to be discussed in this section are marked with an imperfective marker, both the predicate Aktionsarten (as determined by the diagnostics presented in Chapter 2) and the meaning of the imperfective marker must be taken into account in determining the Aktionsarten of these clauses. One important point made by Dowty (1986) is that progressive-marked clauses are inherently stative. This section will in fact illustrate that imperfective-marked clauses in Anii are stative, regardless of the Aktionsarten of their predicates.

3.2.1 [tì] with Eventive Predicates

Clauses marked with [tì] and containing eventive predicates can have episodic (progressive) imperfective aspectual reference and present or past temporal reference. Additionally, such clauses can have habitual aspectual reference and present temporal reference. Past habitual interpretation of [tì]-marked clauses with eventive predicates is also possible in some cases. Note that these possible interpretations are similar to the interpretations available for unmarked clauses with stative predicates, as illustrated above.

Recall from Chapter 2 that according to Dowty (1986), any clause is stative if it follows from the truth of that clause at a given interval i that the clause is also true at all subintervals of i, no matter how small. This property also holds of progressive clauses, as pointed out by Dowty (1986), who claimed that all English progressive clauses are stative, whatever the Aktionsarten of their predicates may be. For example, if a given speaker was in the process of jumping from 2:00 to 5:00 yesterday, he or she was also in the process of jumping at any time within that interval. A similar argument can be made
about habitual clauses, as well, (cf. Chung and Timberlake 1985, Carlson 2005, Jóhannsdóttir 2011). As an example, assume that Mohamam regularly went to the market every week between the years 2000 and 2010. In such a situation, the sentence “Mohamam went to the market every week” is true for the interval from 2000 to 2010—and is also true for any subinterval of that interval. In this case, for example, it was still true that Mohamam went to the market every week on June 5, 2003 at 9:35 AM. Even if Mohamam was not at the market at that precise time, the fact that he went to market every week was still true at 9:35 AM on June 5, 2003. Given that imperfective-marked clauses are expected to be stative, then, the similarities between [ti]-marked clauses with eventive predicates and unmarked clauses with stative predicates that will be illustrated below are to be expected.

### 3.2.1.1 Progressive Aspectual Reference

Example (25) below illustrates that a clause with an eventive predicate marked with [ti] can have progressive aspectual reference and present temporal reference:

(25) Situation: My mother calls me and asks me what I am doing right now. I tell her:

\[ \text{ǹ} \text{ti}^{50} \text{́} \text{tsí́} \text{́} \text{Fríŋió} \]

1.SG.SUBJ.GRP1 IMPF go Frignion

I am going to Frignion

The topic time is the utterance time in (24), as given in context by the meaning of the adverbial ‘right now’. The clause thus has present temporal reference. Since the eventuality time of the speaker going to Frignion includes the topic time interval, this clause has progressive aspectual reference. As was illustrated in (8) above, this clause cannot have progressive interpretation (or present temporal reference) if [ti] is not present.

Another example with a telic predicate, which also has progressive aspectual reference and present temporal reference, is in (26):

Note that the tone of [ti] is underlyingly low, but the marker surfaces with a high tone in many of the examples given here. This change is due to the tone of the subject marker, as is shown in Chapter 6.
(26) Situation: Two friends, Rafiatou and Mardjanatou, who have not met for a long
time are talking about their (adult) children. Rafiatou asks Mardjanatou if her
oldest son has built a house yet. Mardjanatou answers:
\[
\text{à tì tsò gà-fàlà jìnòmò}
\]
3.SG.SUBJ.GRP1 IMPF build CL.C-house now
‘He is building a house now.’

Clauses marked with [tì] with atelic eventive predicates can also have progressive
aspectual reference and present temporal reference, as shown in (27) and (28):

(27) Situation: I am on the phone with my mother, who hears banging sounds in the
background and asks me what else I am doing right now. I answer:
\[
\text{ǹ tì pɛmɛnɛ}
\]
1.SG.SUBJ.GRP1 IMPF clean
‘I am cleaning.’

(28) Situation: Hakimou’s family is expecting a guest who is travelling from Ghana.
She is very late in arriving, so Hakimou has decided to call her to see where she
is. He is in the middle of making the phone call when his mother calls from the
other room to ask if he has spoken with the guest. Hakimou answers:
\[
\text{ǹ tì jìdà nì}
\]
1.SG.SUBJ.GRP1 IMPF call 3.SG.OBJ
‘I am calling her.’

Clauses marked with [tì] with eventive predicates can also have past temporal
reference. An example with a telic eventive predicate is given in (29), which is taken
from the folktale written down by Amadou AYAH GADO, and translated into Gisida by
Hakimou ATTI KALAM:

(29) Situation: The first clause of the story reads “In the olden days there was a
drought and the rain stopped for three years.” The next sentence of the story is:
\[
bè-rè, i-bòò, bò-sàpì bò tì fì
cL.Y-person, cL.W-animal,^{51} cL.Ø-bird 3.PL.SUBJ.GRP1 IMPF die
à-tù-kòmò
cL.Ø-water-hunger
‘The people, animals, and birds, they were dying of thirst.’
\]

^{51} This word refers to terrestrial animals, in general those that have four feet, especially mammals. It is
most often used for domesticated animals such as sheep and goats.
The temporal reference of the clause in (29) is past, as given by the adverbial /dòòdòđò/, ‘in the olden days’, in the first sentence of the story. The topic time, as given by the previous clause of the story, is three years after the rain stopped (recall from Chapter 2 that progressive clauses do not advance the topic time in discourse), and the act of dying was on-going at that time, giving progressive aspectual reference.

More examples of clauses with telic predicates that are compatible with past temporal reference and progressive aspectual reference are given in (30) and (31):

(30) Situation: From a story written by Aboudou Razak DJABOUTOUBOUTOU SEIDI. The author is describing his arrival in Cotonou (about a year before the story was written), the largest city in Benin. He described how he got off the bus, and found a holy man who dropped him off right on the street where his family lived:

\[ \text{ŋá tá mànà ɲá amà-béérè,} \]
\[ \text{and 1.SG.SUBJ.GRP1 just.then see 1.SG.POSS.CL.‐paternal.uncle} \]
\[ \text{kpáári à-dé tì dòò gà-fàlà ní.} \]
\[ \text{at.that.moment AGR.CL.‐DEM.FAR IMPF leave CL.C‐house in} \]
\[ \text{‘And just then I saw my paternal uncle, at that moment he was leaving the house.’} \]

(31) Situation: Yesterday, my bucket fell into the well. I really liked that bucket, so I decided to jump in and fish it out. Right as I was jumping (I was in the air), my phone rang. This morning, when I looked at my phone, I see it was my brother who called. When I called him back this morning, he asks me why I did not answer the phone when he called:

\[ \text{sám ɲdéè ó jidà mà, àmò, ní tì} \]
\[ \text{CL.B.time CL.B.REL 2.SG.SUBJ.GRP1 call SUB 1.SG.FOC 1.SG.SUBJ.GRP1 IMPF} \]
\[ \text{ʤɨ m ɠ ɲ kɨ m ɲɨ} \]
\[ \text{jump CL.B.well into} \]
\[ \text{‘At the time when you called, me, I was jumping into the well.’} \]

Clauses with atelic predicates that are marked with [tì] can also have past progressive interpretation, as shown in (32) and (33):

---

52 The form [sám] may be a socially variable form. Younger consultants claim that this is the form they normally produce, but that older speakers will often correct them to [tá̃].
(32) Situation: I am telling a friend the story of my sister’s arrival at my house yesterday. I was cleaning from 10 AM to noon, and my sister arrived at 10:30 AM:

á kpá mà, âmó, ǹ tí pèìmpèŋɛ
3.SG.SUBJGRP1 arrive SUB 1.SG.SUBJ.FOC 1.SG.SUBJGRP1 IMPF clean
‘When she arrived, me, I was cleaning.’

(33) Situation: From a story written by Salimatou BABA BODY. The incident the story is written about occurred two days before the story was written, as is explained in the first sentence of the story. The author’s brother in law was sick, and had been living in Frignion, where he was being treated (probably with traditional medicine). Frignion is a small village and has no hospital:

àdìtênie gitêñfilè ná à télfônè wàà
CL.B.monday CL.B.evening FOC.CL.B 3.SG.SUBJGRP1 telephone that
àdé à-gʊ̀-lò gò tì fáářù ǹí
3.SG.DEM.FAR POSS-CL.Ẹ-Body Agr.CL.Ẹ IMPF bother 3.SG.OBJ
‘It was Monday evening that he telephoned [to say] that his illness was bothering him.’

These examples have shown that clauses with both telic and atelic eventive predicates can have past or present temporal reference and progressive (i.e. episodic imperfective) aspectual reference.

3.2.1.2 Habitual Aspectual Reference

Clauses with eventive predicates that are marked with [tì] can also have present temporal reference and habitual aspectual reference, supporting the hypothesis that [tì] is an imperfective marker, not just a progressive marker. Such clauses can also have past temporal reference and habitual interpretation.54

Observe the example in (34), which illustrates that clauses with telic eventive predicates can have present habitual reference. This example is taken from a conversation about rice cultivation between Hakimou ATTI KALAM and Nouhoum BABA BODY SALIFOU:

53 In Anii, the word that means ‘body’ ([gʊ̀lɔ]) is often used to euphemistically refer to illness.
54 As will be discussed further below, however, [tì]-marked clauses are not the preferred type of clause in expressing past habitual meaning.
Situation: The speakers have been discussing the location where Nouhoum (along with some other people) has been trying to grow rice. The location is on the banks of a creek, downstream from a small dam. They are discussing drainage patterns and how the water normally flows when it rains. Hakimou mentioned that the water flows from higher parts of town into the creek and over the dam all drains into Nouhoum’s rice field. Nouhoum replied “oh, near the dam, it won’t be only near the dam.” The following sentence is:

\[
\text{tɔ ɩɔ nú-fêli-dʒà dé ọ-ɲinʃá ọ-bômbônò} \\
\text{DISC with.cl.A-Kikele\textsuperscript{55} ASSOC DEM.FAR.CL.A CL.E-path AGR.CL.E-big} \\
\text{dé áá kó-dʒà\textsuperscript{56} gbóò ô ti kpá ɲtsóm} \\
\text{DEM.FAR.CL.E DISC POSS.CL.E-ASSOC also AGR.CL.E IMPF arrive into} \\
\text{‘And with the Kikele road there, that big road, from there, too, the road's (water) arrives in [the rice field].’}
\]

The final clause in (34) discusses the regular arrival of water into the rice field, which happens whenever it rains. That is, the arrival of the water is an oft-repeated event—it occurs almost every day in the rainy season. It was not actually raining while the conversation was taking place, so the discussion of water flow could not be understood to be progressive in this case.

The example in (35) below is another example of a clause with a telic eventive predicate that is compatible with present temporal reference and habitual aspectual reference:

(35) Situation: My friend Falilatou just moved to be my neighbor, and now I see her every day when she comes to get water from my well (she does not have a well at her house yet). After a few weeks, she notices that I am not there when she comes on Wednesdays, so she asks me what I do on Wednesdays. I answer:

\[
\text{ǹ tí ! tsi gó-já álààèáà báà á-páñá} \\
\text{1.SG.SUBJ.GRP IMPF go CL.E-market CL.B.Wednesday each AGR.CL.B-every} \\
\text{‘I go to the market every Wednesday.’}
\]

Recall from the previous section that unmarked clauses with telic eventive predicates cannot have present temporal reference or habitual aspectual reference.

---

\textsuperscript{55} A nearby village  
\textsuperscript{56} This word (and the subsequent agreement marker) agree with the noun [ùtò], ‘water’, which is salient from previous utterances.
Clauses with atelic eventive predicates can also have present habitual interpretation, but only if marked with [tɩ], as shown in (36) and (37):

(36) Situation: Adamatou is asked how she earns money to pay her daughter’s school fees. She says:

\[ \text{'n} \quad \text{tɩ jàlà à-kùrò gò-já ' ní àlåârbá' báà 1.SG.SUBJGRP1 IMPF sell CL.T-cloth CL.E-market in CL.B.Wednesday each à-pànjà AGR.CL.B-every

'I sell cloth in the market every Wednesday.' \]

(37) Situation: Alphonse is a game-keeper in Pendjari (the Beninese game park). His job is to observe the elephants and make sure they are safe. Abou is a new game-keeper at the park, and asks Alphonse what his job is. Alphonse says:

\[ \text{'n} \quad \text{tì kidé i-bòrò 1.SG.SUBJGRP1 IMPF watch CL.W-elephant

'I watch elephants.' \]

There is a subset of habitual clauses which have a generic interpretation—they describe general facts about the world. Deo (2009) refers to such clauses as having a ‘characterizing reading’, that is these clauses which describe the general state of the way things are. Two examples are given in (38):

(38) a. Situation: A father asks his child what noise dogs make:

\[ \text{i-sñà bò ti gbòm CL.W-dog AGR.CL.W IMPF bark

Dogs bark.} \]

b. Situation: Two friends are in a conversation discussing the eating habits of lions in the wild. One says:

\[ \text{dòò dé nà pi, i-gúúní bò ti kùr since DEM.FAR IMPF come CL.W-lion AGR.CL.W IMPF eat.meat}^{57} i-bòrò CL.W-elephant

‘From long ago until now, lions have been eating elephants.’ \]

---

57 This verb generally applies to eating meat, but can also refer to anything that is tough and chewy.
The example in (38a) indicates that it is a general fact of the world that dogs bark, but says nothing about how long this has been the case. The clause in (38b) expresses the idea that lions have regularly eaten elephants for a long time, and that they continue to do so—a general fact of the world presented with the additional information that this fact has held for a long time.

In some cases, such clauses can have either a progressive or a habitual interpretation, as shown in the example in (39):

(39) Situation: A visitor from another planet has come to earth, and has never seen rain before. In telling him about the qualities of rain, I say:

\[
\text{dòò n-dúlí pó-kó-sìb-ò nî, ú-tó à tì nì since CL.F-life POS.CL.E-begin-NOM in CL.A-water AGR.CL.A IMPF rain}^{58}
\]

‘Since the beginning of life, it has been raining.’

The clause in (39) would be true in two different cases. First, (39) would be acceptable in a situation where it has been raining non-stop since life began. This clause would also be acceptable in the case where it has been raining off and on (but not constantly) since the beginning of life. The fact that the utterance in (39) could be acceptably spoken in both cases indicates that both a progressive and a habitual reading are available for that clause.

The data presented thus far in this section support the claim that clauses with eventive predicates that are marked with [tî] can have past or present progressive or present habitual interpretation. Recall from the previous section that unmarked clauses with stative predicates (i.e. stative clauses, according to the definitions in Dowty (1986)) also can have both past and present episodic imperfective interpretation. Thus, given that imperfective-marked clauses are also considered stative (cf. Dowty 1986), these similarities are not unexpected. Unmarked stative clauses, however, were shown not to be compatible with habitual aspectual reference, while [tî]-marked clauses with eventive predicates can have present habitual interpretation. A remaining question is whether or not such clauses can have past temporal reference and habitual aspectual reference.

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58 This is the verb root meaning 'rain', not a noun.
In fact, [ti]-marked clauses with eventive predicates are compatible with past habitual interpretations, but not in every case. For example, characterizing clauses cannot have past temporal reference when marked only with [ti]. A past characterizing reading is only available if another marker is present, in addition to [ti], such as the perfect marker [ʧèé] or the past marker [bʊŋà], both of which will be discussed in detail in Chapter 4. This is demonstrated in (40) below, where (40a) and (40b) (which are marked with both [ti] and another marker) are acceptable responses, but (40c) (marked only with [ti]) is not:

(40) Situation: I am visiting another planet, where rain used to fall, but now no longer does. In describing the rain to me, a native of that planet would say:

a. ù-tó ǝʧèé tì nì
class:A-water AGR.class:A PERF IMPF rain
‘It used to rain (regularly).’

b. ù-tó à bʊŋà tì nì
class:A-water AGR.class:A PST IMPF rain
‘It used to rain (regularly).’

c. #ù-tó à tì nì
class:A-water AGR.class:A IMPF rain
Intended interpretation: ‘It used to rain (regularly).’

With non-characterizing readings, clauses with eventive predicates that are marked with [ti] cannot always have past habitual interpretation when no other markers are present. This fact is illustrated by the examples in (41) (with a telic predicate) and (42) (with an atelic predicate):

(41) Situation: The speaker is asked to describe things she used to do on a regular basis, but does not do any longer:

a. ñʧèé tì tsi Firiŋio
1.sg.subj.grp1 PERF IMPF go Frignion
‘I used to go to Frignion.’

b. ñ bʊŋà tì tsi Firiŋio
1.sg.subj.grp1 PST IMPF go Frignion
‘I used to go to Frignion.’

c. #ñ tì tsi Firiŋio
1.sg.subj.grp1 IMPF go Frignion
Intended interpretation: ‘I used to go to Frignion.’
(42) Situation: The speaker is asked to describe things she used to do on a regular basis, but does not do any longer:

a. \( \text{ñ} \text{fēé tì fēr} \)
   \( \text{1.SG.SUBJ.GRP1 PERF IMPF sweep} \)
   ‘I used to sweep.’

b. \( \text{ñ} \text{bōŋà tì fēr} \)
   \( \text{1.SG.SUBJ.GRP1 PST IMPF sweep} \)
   ‘I used to sweep.’

c. \( \#ñ \text{tì fēr} \)
   \( \text{1.SG.SUBJ.GRP1 IMPF sweep} \)
   Intended interpretation: ‘I used to sweep.’

Note that in cases such as those in (40), (41), and (42), a key factor in the acceptability judgements is the fact that the event denoted by the clause is definitely no longer occurring. It may be, in fact, that something other than temporal reference is influencing the acceptability judgements presented here. It is important to note that past habitual meanings for [tī]-marked eventive clauses are possible in narratives set in the past, but only in cases where there is no explicit denial that the eventuality still occurs. The utterances in (43), (44) and (45), for instance, are acceptable:

(43) Situation: I am telling a story about my childhood. When I was younger, my parents gave me a weekly allowance, a fact which is important to the story. I begin the story by saying:
   \( \text{àŋ-gi-dʒáá} \text{ ni, ñ tì ŋō gī-tānī} \text{ bāå} \)
   \( \text{1.SG.POSS-CL.Đ-childhood in 1.SG.SUBJ.GRP1 IMPF see CL.Đ-money each} \)
   \( \text{bōkī ā-pāŋå} \)
   \( \text{CL.B.week AGR.CL.B-every} \)
   ‘In my childhood, I would get money every week.’

(44) Situation: An excerpt from a story written by Aboudou Razak DJABOUTOUABOUTOU SEIDI about a journey he took to Cotonou (the largest city in Benin) a year before the story was written. The author is describing the stages of his journey:
‘When we would arrive in each village, I would ask and those [people] would tell me its name.’

(45) Situation: Hakimou ATTI KALAM is telling a story about a boyhood friendship. The story begins this way: ‘When I was a child, I was friends with a Fulani person in school, and we were close. When I got out of school on Wednesday afternoons, I would go to their farm. We would play.’ The following sentence is:

‘Saturdays and Sundays when we didn’t go to school, I would go with them, we would take the cows to go eat.’
Thus far, the data given in this subsection have illustrated that [tɨ]-marked clauses with both telic and atelic eventive predicates can have past progressive, present progressive, past habitual or present habitual interpretation. Examples (46) (with telic examples) and (47) (with atelic examples) below provide further support for these claims, contrasting with (48) and (49), which illustrate that such clauses cannot have perfective aspectual reference (as expected, given that [tɨ] is an imperfective marker):

(46) a. Situation: Answering the question ‘what were you doing yesterday at 3:00?’:
    ǹ tɨ tsi Frɨɲiño
    1.SG.SUBJ.GRP IMPF go Frignion
    ‘I was going to Frignion.’
   
b. Situation: Answering the question ‘what are you doing right now?’:
    ǹ tɨ tsi Frɨɲiño
    1.SG.SUBJ.GRP IMPF go Frignion
    ‘I am going to Frignion.’
   
c. Situation: Answering the question ‘what did you usually do on Monday mornings when you were a child?’:
    ǹ tɨ tsi Frɨɲiño
    1.SG.SUBJ.GRP IMPF go Frignion
    ‘I would go to Frignion.’
   
d. Situation: Answering the question ‘what do you usually do on Monday mornings?’:
    ǹ tɨ tsi Frɨɲiño
    1.SG.SUBJ.GRP IMPF go Frignion
    ‘I go to Frignion.’

(47) a. Situation: Answering the question ‘what were you doing yesterday at 3:00?’:
    ǹ tɨ jɛr
    1.SG.SUBJ.GRP IMPF sweep
    ‘I was sweeping.’
   
b. Situation: Answering the question ‘what are you doing right now?’:
    ǹ tɨ jɛr
    1.SG.SUBJ.GRP IMPF sweep
    ‘I am sweeping.’
   
c. Situation: Answering the question ‘what did you usually do on Monday mornings when you were a child?’:
    ǹ tɨ jɛr
    1.SG.SUBJ.GRP IMPF sweep
    ‘I would sweep.’
d. Situation: Answering the question ‘what do you usually do on Monday mornings?’:
   ǹ tí jér
   1.SG.SUBJ.GRP1 IMPF sweep
   ‘I sweep.’

(48) Situation: Answering the question ‘what did you do yesterday?’:
   #ǹ tí tsi Firipió
   1.SG.SUBJ.GRP1 IMPF go Frignion
   Intended interpretation: ‘I went to Frignion.’

(49) Situation: Answering the question ‘what did you do yesterday?’:
   #ǹ tí jér
   1.SG.SUBJ.GRP1 IMPF sweep
   Intended interpretation: ‘I swept.’

In addition, such clauses marked with [ti] (as the only marker), like unmarked clauses with stative predicates, cannot have future temporal reference, with perfective, progressive or habitual aspectual reference:

(50) a. Situation: Answering the question ‘what will you do tomorrow?’:
   #ǹ tí tsi Firipió
   1.SG.SUBJ.GRP1 IMPF go Frignion
   Intended interpretation: ‘I will go to Frignion.’

b. Situation: Answering the question ‘what will you be doing tomorrow at 3:00?’:
   #ǹ tí tsi Firipió
   1.SG.SUBJ.GRP1 IMPF go Frignion
   Intended interpretation: ‘I will be going to Frignion.’

c. Situation: Answering the question ‘what will you do on Monday mornings next year?’:
   #ǹ tí tsi Firipió
   1.SG.SUBJ.GRP1 IMPF go Frignion
   Intended interpretation: ‘I will go to Frignion’

(51) a. Situation: Answering the question ‘what will you do tomorrow?’:
   #ǹ tí jér
   1.SG.SUBJ.GRP1 IMPF sweep
   Intended interpretation: ‘I will sweep.’
b. Situation: Answering the question ‘what will you be doing tomorrow at 3:00?’:

#ǹ tī fēr
1.SG.SUBJ.GRP1 IMPF sweep
Intended interpretation: ‘I will be sweeping.’

c. Situation: Answering the question ‘what will you do on Monday mornings next year?’:

#ǹ tī fēr
1.SG.SUBJ.GRP1 IMPF sweep
Intended interpretation: ‘I will sweep.’

Additionally, [ti]-marked clauses with eventive predicates are not compatible with perfect or progressive aspectual reference. This is again expected, given that unmarked clauses with stative predicates also exhibit these restrictions:

(52) a. Situation: My job is to paste up the Anii magazine in every Anii village. I was partway through pasting up when I got in an accident. I am telling the story to a friend, who asks which villages I had been to when the accident happened:

#ǹ tī Frignion
1.SG.SUBJ.GRP1 IMPF go Frignion
Intended interpretation: ‘I had gone to Frignion.’

b. Situation: I am telling a friend that a houseguest came earlier than expected yesterday, and I was not ready for him. The friend asks what cleaning I had gotten done when the guest arrived:

#ǹ tī fēr
1.SG.SUBJ.GRP1 IMPF sweep
Intended interpretation: ‘I had swept.’

(53) a. Situation: I am on the phone with my mother, and I had been telling her about plans I had before I got in an accident last week. She asks me what I had planned to do the day after the accident:

#ǹ tī Frignion
1.SG.SUBJ.GRP1 IMPF go Frignion
Intended interpretation: ‘I was going to go to Frignion.’

b. Situation: I am on the phone with my mother, and I had been telling her about plans I had before I got in an accident last week. She asks me what I had planned to do the day after the accident:

#ǹ tī fēr
1.SG.SUBJ.GRP1 IMPF sweep
Intended interpretation: ‘I was going to sweep.’
As can be seen from the data presented above, both telic and atelic eventive clauses in Anii that are marked with [tɩ] can have only past or present temporal reference, with either progressive or habitual aspectual reference. That is, such clauses have non-future imperfective interpretations. As the reader may recall, unmarked stative clauses also have only non-future (episodic) imperfective temporal and aspectual reference. This similarity between unmarked stative clauses and clauses with eventive predicates that are marked with an imperfective marker is expected, as discussed above.

This section has illustrated, then, that clauses with eventive predicates are stative when marked with the imperfective marker [tɩ], and that, like unmarked stative clauses, they are only compatible with past or present temporal reference and imperfective aspectual reference. A remaining question, then, is that of what interpretation(s) are available for [tɩ]-marked clauses with stative predicates. The next section addresses this question.

3.2.2 [tɩ] with Stative Predicates

While [tɩ]-marked clauses with eventive predicates can have either progressive or habitual aspectual reference, [tɩ]-marked clauses with stative predicates can have only past or present habitual interpretation. An example is in (54) below:

(54) Situation: Hakimou and Nouhoum are having a conversation about rice growing. They are discussing that the rice needs to be planted and sprout a little, and then it will grow even when the field is flooded. Nouhoum gives an example of a group of rice-growers that were featured on Beninese television:

Malanville is a town in the north of Benin, on the border with Niger

This marker (and the subsequent Class B agreement marker) agrees with the Class B noun [ʃɩŋkáᶠá], ‘rice’, which was mentioned earlier in the conversation.

62 This verb has something to do with making seeds, i.e. the actual rice grains, not just flowering...
The example in (54) has present habitual interpretation because it is discussing the way that the people of Malanville grow rice—a method that is repeated every year and was currently in use at the time of the conversation.

Another such example is in (55), taken from the end of a story written by Salimatou Baba Body in response to the prompt ‘what happens in Bassila on market day?’:

(55) Situation: The author describes aspects of the market day, specifically how the timing usually works. Near the end, she says that the market goes until the evening. The next clause is:

\[
\begin{align*}
\text{bà-sàná} & \quad \text{bà} \quad \text{tì} \quad \text{tônò} \quad \text{bà-pàdžà} \quad \text{à} \quad \text{fèw} \\
& \quad \text{CL.W-stranger} \quad \text{AGR.CL.W} \quad \text{IMPF} \quad \text{be.before} \quad \text{CL.W-local} \quad \text{INORD} \quad \text{go.home}
\end{align*}
\]

‘Strangers go home before locals.’

The clause in (55) denotes a state which regularly occurs every market day in Bassila.

The subtype of habitual interpretation discussed above as the characterizing reading, i.e. the use of the imperfective marking to indicate reference to a general state of affairs, is also possible with clauses that have stative predicates. This is illustrated in (56) and (57):

(56) Situation: Rahinatou almost always carries cash with her, but today she has forgotten. She and her brother are both in the market, and he asks if he can borrow money to make a purchase. She says:

\[
\begin{align*}
\text{n} & \quad \text{tì} \quad \text{wòdà gi-tání}, \quad \text{âmá} \quad \text{1.sáá} \quad \text{ñdé} \quad \text{1.ní} \\
& \quad \text{1.SG.SUBJGRP1} \quad \text{IMPF} \quad \text{have} \quad \text{CL.D-money} \quad \text{but} \quad \text{CL.B.time} \quad \text{63} \quad \text{CL.B.DEM.CLOSE} \quad \text{in} \\
\text{kí} & \quad \text{má} \quad \text{wòdá} \quad \text{1.ná} \\
& \quad \text{NEG} \quad \text{1.SG.SUBJGRP2} \quad \text{have} \quad \text{NEG}
\end{align*}
\]

‘I normally have money, but this time I don’t have [any].’

(57) Situation: The speaker is trying to describe trees to an alien being:

\[
\begin{align*}
\text{dòò} & \quad \text{n-dúlná kó-síb-ò} \quad \text{ní} \quad \text{à-jó} \quad \text{i} \quad \text{tì} \quad \text{lámá} \\
& \quad \text{since} \quad \text{CL.F-life} \quad \text{POSS.CL.E-begin-NOM} \quad \text{in} \quad \text{CL.T-tree} \quad \text{AGR.CL.T} \quad \text{IMPF} \quad \text{be.tall}
\end{align*}
\]

‘Since the beginning of life, trees have been tall.’

---

63 This is ‘time’ in the sense of the French ‘fois’, rather than ‘temps’--as used in the phrase ‘one time too many’. 
An unmarked clause with a stative predicate is also acceptable in the situation in (57), as would be expected given the unmarked examples discussed above. This is illustrated in (58):

(58) Situation: The speaker is trying to describe trees to an alien being:
\[
\text{dòò ñ-dúlíɲá kó-sib-ò ní, ð-jó ñ i lámá}
\]
since CL.F-life POSS.CL.E-begin-NOM in CL.T-tree AGR.CL.T be.tall
‘Since the beginning of life, trees have been tall.’

In the particular situation given in (57) and (58), both habitual and episodic meanings are possible. That is, according to my consultants, the speaker could be describing multiple trees that have been tall at various times in history (in which case the form in (57) is preferred, though both forms are acceptable), or the speaker could be referring to many very long-lived trees that have been constantly tall since the beginning (in which case the form in (58) is preferred, though both forms are acceptable). In both situations, however, the trees continue to be tall at the utterance time.

As with the [tî]-marked characterizing clauses with eventive predicates discussed above, clauses with stative predicates that are marked with [tî] and no other markers are not acceptable in situations where it is specified that the state denoted by the clause no longer holds at the topic time. This is exemplified in (59), where (59a-b) illustrate unacceptable clauses (in the given context), and (59c-d) illustrate acceptable ones. Note that the acceptable clauses in (59c-d) include another marker (either the past marker [bôŋâ] or the perfect marker [ʧéé]) in addition to [tî]. Unfortunately, no such example with past temporal reference has been elicited, but I assume that such an example would behave similarly:

(59) Situation: The speaker is describing trees to an alien (in an alternate universe where trees used to be tall, but are not any longer):

a. #dòò ñ-dúlíɲá kó-sib-ò ní, ð-jó ñ i ti lámá
since CL.F-life POSS.CL.E-begin-NOM in CL.T-tree AGR.CL.T IMPF be.tall
Intended interpretation: ‘Since the beginning of life, trees have been tall.’
b. #dòò ǹ-dúlíɲá kʊ-sib-ọ ni, ì-jọ i lámá
since CL.F-life POSS.CL.E-begin-NOM in CL.T-tree AGR.CL.T be.tall
Intended interpretation: ‘Since the beginning of life, trees have been tall.’

c. dòò ǹ-dúlíɲá kʊ-sib-ọ ni, ì-jọ i bọŋà/ʧéé
since CL.F-life POSS.CL.E-begin-NOM in CL.T-tree AGR.CL.T PST/PERF
lámá
IMPF be.tall
‘Since the beginning of life, trees had been tall.’

d. dòò ǹ-dúlíɲá kʊ-sib-ọ ni, ì-jọ i bọŋà/ʧéé
since CL.F-life POSS.CL.E-begin-NOM in CL.T-tree AGR.CL.T PST/PERF
lámá
be.tall
‘Since the beginning of life, trees had been tall.’

[t]i-marked clauses with stative predicates can, however, have past temporal reference and habitual aspectual reference in cases where it is not specified that the state no longer holds. This is illustrated by the example in (60), which is taken from the story about his journey to Cotonou, written by Aboudou Razak DJABOUTOUBOUTOU SEIDI:

(60) Situation: The author is describing the sites he visited regularly when he was in Cotonou with his friends:
Gì tì sirá à tsi gò-tú-nọ,
1.PL.SUBJ.GRP.I IMPF be.able INF go CL.C-water-mouth64 INORD go
gò-dú-i lâ̈ri álâ̈nấdžà̀ ì nà règà mà.
CL.C-place-REL CL.B.vehicle far.away.above AGR.CL.B IMPF descend SUB
‘We could go to the beach, to go to the place where the airplane(s) land.’65

(60) indicates that the state of being able to go to the beach and the airport held on multiple occasions during the past time interval of the author’s trip to Cotonou. Another example of a [ti]-marked stative clause with past temporal reference and habitual aspectual reference is given in (61):

---

64 compound noun, meaning ‘bank of a river’, or in this case, ‘beach’.
65 The airport in Cotonou is essentially on the beach.
(61) Situation: Papa Adam, who is an old man, is describing his life as a young man to his grandchildren. He was poor and worked odd jobs, so he would only have money every few months or so:

ǹtí wèdà gi-tání
1.SG.SUBJ.GRP1 IMPF have CL.D-money
‘I would have money [off and on].’

The evidence presented thus far in this subsection indicates that [ti]-marked clauses in Anii with stative predicates can have only non-future habitual interpretation, in contrast with unmarked clauses with stative predicates that have only non-future episodic imperfective interpretation.

As mentioned in Chapter 2, stative clauses (in English and other languages) have been claimed (cf. Dowty 1979, 1986, Bybee 1994) to be often incompatible with progressive marking (though many exceptions have been noted66, cf. Dowty 1979, Jóhannsdóttir 2011). In some cases, (cf. Bybee 1994), it has been noted that one case in which progressive statives are possible in English is the case in which the context forces such sentences to be interpreted inchoatively. Cases of imperfective-marked clauses with stative predicates that receive an inchoative interpretation do exist in Anii, as exemplified in (62):

(62) Situation: Bouderbalah has come to visit his friend Illiassou. Illiassou is inside his room and the door is locked. Just as Bouderbalah arrived, it started raining. Bouderbalah pounds on the door and tells Illiassou to hurry up and open the door. His next sentence is:

ǹtí ʧɛkɛ
1.SG.SUBJ.GRP1 IMPF be.wet
‘I am getting wet.’

The utterance in (62) can only be used acceptably by someone who is not completely wet and is becoming wetter. Another inchoative example is given in (63):

66 For example, in English, one can say something like 'I am loving this' to convey the fact that one is currently in the state of loving something, but that state is not expected to last.
Situation: A young man has been married for about 6 months, and has just gone home to visit his mother (who lives in a different village). The mother notices (with approval) that her son is gaining weight, and says to him:

\[ \begin{align*}
&\text{ò tì ʂin'kìlà} \\
&2.\text{SG.SUBJ.GRP1 IMPF be.big}
\end{align*} \]

‘You are getting fat.’

It is not yet clear whether such inchoative readings are possible with past temporal reference. I expect that such readings are possible, but they have not yet been elicited. This remains a matter for future research.

Thus far, this section has illustrated that clauses with stative predicates that are marked with [tì] are compatible with past or present habitual interpretation. As (62) and (63) illustrate, there is also the possibility that such clauses can have inchoative readings. More research is needed, however, to determine whether inchoative readings are regularly derived possibilities for the interpretation of such clauses, or whether such readings are a coerced phenomenon involving a forced change in the Aktionsart of verbal predicates (from stative to telic) in certain contexts. Since the data needed to resolve this issue, these inchoative interpretations will not be discussed further here, but will be left to future research.

[tì]-marked clauses with stative predicates cannot have episodic imperfective aspectual reference, with past or present temporal reference. Compare the acceptable clauses in (64) with the unacceptable ones in (65):

(64) a. Situation: The speaker is telling a story about his life when his children were small:

\[ \begin{align*}
&\text{ń tì dà ãfàl ãditɛnɛɛ bàà à-pàŋà} \\
&1.\text{SG.SUBJ.GRP1 IMPF be.there at.home CL.B.Monday each AGR.CL.B-every}
\end{align*} \]

‘I was at home every Monday.’

b. Situation: Answering the question ‘what do you do on Mondays?’:

\[ \begin{align*}
&\text{ń tì dà ãfàl ãditɛnɛɛ bàà à-pàŋà} \\
&1.\text{SG.SUBJ.GRP1 IMPF be.there at.home CL.B.Monday each AGR.CL.B-every}
\end{align*} \]

‘I am at home every Monday.’

101
(65) a. Situation: Answering the question ‘what were you doing yesterday at 3:00 PM?’
   #ǹ ti da afál
   l.sg.subj grp1 impf be.there at.home
   Intended interpretation: ‘I was at home.’

   b. Situation: Answering the question ‘what are you doing right now?’:
   #ǹ ti da afál
   l.sg.subj grp1 impf be.there at.home
   Intended interpretation: ‘I am at home.’

Additionally, like unmarked clauses with stative predicates, clauses that have stative predicates and are marked with [tì] cannot have past perfective interpretation. This is not unexpected, given that these clauses are marked with an imperfective marker:

(66) Situation: Answering the question ‘what did you do yesterday?’
   #ǹ ti da afál
   l.sg.subj grp1 impf be.there at.home
   Intended interpretation: ‘I was at home.’

Clauses with stative predicates that are marked with [tì] cannot have future temporal reference, as shown with episodic (67a), habitual (67b), or perfective (67c) aspectual reference:

(67) a. Situation: Answering the question ‘what will you be doing tomorrow at 3:00 PM?’
   #ǹ ti da afál
   l.sg.subj grp1 impf be.there at.home
   Intended interpretation: ‘I will be at home.’

   b. Situation: Answering the question ‘what will you be doing on Mondays next year?’
   #ǹ ti da afál
   l.sg.subj grp1 impf be.there at.home
   Intended interpretation: ‘I will be at home.’

   c. Situation: Answering the question ‘what will you do tomorrow?’
   #ǹ ti da afál
   l.sg.subj grp1 impf be.there at.home
   Intended interpretation: ‘I will be at home.’
Finally, [ti]-marked clauses with stative predicates cannot have perfect or prospective aspectual reference, as would be expected, since they are marked with an imperfective marker:

(68) Situation: I used to live in a household, but I left many years ago. When I come back for a visit, one of the neighbor children who is visiting (and does not know me) asks if I live in that household. I answer:

\[
\text{#àài, àmá ñ tì dà àtìjà no but 1.SG.SUBJ.GRP1 IMPF be.there here}
\]

Intended interpretation: ‘No, but I have lived here.’

(69) Situation: I am on the phone with my mother, and I had been telling her about plans I had before I got in an accident last week. She asks me what I had planned to do the day after the accident:

\[
\text{#ǹ tì dà àfál 1.SG.SUBJ.GRP1 IMPF be.there at.home}
\]

Intended interpretation: ‘I was going to be at home.’

As this section has demonstrated, clauses with stative predicates that are marked with [ti] must have past or present temporal reference and habitual aspectual reference, whereas unmarked clauses with stative predicates can only have past or present temporal reference and episodic imperfective aspectual reference. This is in contrast with [ti]-marked clauses with eventive predicates, which must have past or present temporal reference, and either progressive or habitual temporal reference.

### 3.3 Future Discourse

As has been shown in the previous sections, unmarked or [ti]-marked clauses in Anii are acceptable with past or present temporal reference, but none of the utterances discussed so far can have future temporal reference. The obvious question raised by the previous sections, then, is that of how future temporal reference can be expressed in Anii. This section will provide a brief overview of future discourse in Anii, i.e. discourse in which the eventuality denoted by a given clause occurs at some point after the utterance time of that clause (cf. discussion of future discourse in Tonhauser 2011). It is possible
that future discourse in Anii is realized by future tense marking (UT < TT), prospective aspect marking (TT < ET), a future TRM (UT < ET), or some other type of marker. In fact, the grammatical structures found in future clauses are quite complex, and it is possible that more than one type of marker is present.

Section 3.3.1 presents data regarding future clauses, while Section 3.3.2 provides a brief discussion on the function of the various markers and structures that are present in future discourse. While there are many aspects of future clauses that can be presented clearly here, there are also questions that must be left to future research, as shown below.

### 3.3.1 The Uses of Future Clauses in Anii

Future clauses in Anii contain three elements which could possibly contribute future meaning of some kind (whether future temporal reference, prospective aspectual reference, or the type of reference contributed by a future TRM, as will be discussed below). These elements are: the marker [tɨ], the subject marker /má/, which is a group subject marker, (in addition to a group 1 subject marker at the beginning of the clause), and a tone change on the verb stem. These three elements are exemplified in clauses with telic predicates in (70) and (71) (note that the underlying form of the verb stem meaning ‘come’ is /pɩ/):

(70) Situation: I am traveling, and I am calling the friends whose house I am going to, in order to let them know when I will arrive. It is 10:00 in the morning right now:

`ǹ tɨ! má pi bù-kɔŋkɔŋ bù-riù`

1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 come CL.G-hour AGR.CL.G-three

‘I will come at 3:00.’

---

67 There is actually a good deal of complicated segmental phonology involved with this marker, so it is difficult to determine exactly what the underlying form may be. Historically, the form was likely [tɨ] (the vowel /ɨ/ is probably derived from /i/, see Chapter 1 and Morton 2011 for more details), and in fact it is not unlikely that this ‘future’ marker was originally transparently the imperfective marker, but that aspect of its meaning has been lost in the modern language. The form [tɨ] is the hypothesized synchronic underlying form, pending further research into this issue.

68 Recall from Chapter 1 that Anii has two sets of subject markers. Group 1 markers are those that have been used in most of the examples so far (i.e. /ń, ū, à, gi, i, bà/), while Group 2 markers are /má, á, à, gi, i, bà/.

69 The underlying form of the stem meaning ‘go’ is actually H toned (/tsɨ/), so the fact that there is a change in the tone pattern is not obvious in this case, but it does occur. For more discussion on this tone pattern, see the data and analysis presented in Chapter 7.
Situation: I have just told my mother that I will be busy next Tuesday. She asks me what I will do:

\[\text{ǹ tɨ má tsì Fíríɲió} \]
\[1.\text{SG.SUBJ.GRP1 FUT 1.\text{SG.SUBJ.GRP2 go Frignon}}\]
\[\text{‘I will go to Frignon.’}\]

The marker [tɨ], the group 2 subject marker, and the H tone on the verb stem must all be present in order for the utterances in (70) and (71) to be acceptable in these particular situations. I will call this type of construction (containing all three of these elements) a ‘future construction’. The presence of all three of these elements is compatible with future temporal reference (and possibly future discourse in general), but does not affect aspectual reference in any way. That is, without additional aspect marking, clauses containing the future construction that have eventive predicates can have only perfective aspectual reference, and those that have stative predicates can have only episodic imperfective aspectual reference. This claim will be supported below.

The clauses in (70) and (71) have telic eventive predicates, but clauses with the same structure and atelic eventive predicates or stative predicates are also compatible with future discourse, as illustrated in (72) and (73):

(72) a. Situation: Answering the question ‘what will you do tomorrow?’:

\[\text{ǹ tɨ mó léé ň-timá} \]
\[1.\text{SG.SUBJ.GRP1 FUT 1.\text{SG.SUBJ.GRP2 do CL.F-work}}\]
\[\text{‘I will work.’}\]

b. Situation: I have just told my mother that I will be busy next Tuesday. She asks me what I will do:

\[\text{ǹ tɨ má fēř} \]
\[1.\text{SG.SUBJ.GRP1 FUT 1.\text{SG.SUBJ.GRP2 sweep}}\]
\[\text{‘I will sweep.’}\]

(73) a. Situation: I owe my brother some money. I see him in town, but I do not have any money right now. We make plans to meet tomorrow, and I say:

\[\text{ǹ tɨ má wódá gi-táɲi gâtśiį} \]
\[1.\text{SG.SUBJ.GRP1 FUT 1.\text{SG.SUBJ.GRP2 have CL.Đ-money tomorrow}}\]
\[\text{‘I will have (the) money tomorrow.’}\]

---

70 This construction, however, is not the only possible construction in future clauses, as will be discussed in the following section.
b. Situation: A friend is coming in to town tomorrow, and calls me to ask where I will be then, so she can meet up with me (she is not sure when she will arrive). Since I plan to be home most of the day, I say:

\[
\begin{align*}
\text{ǹ} & \quad \text{tì} \quad \text{má} \quad \text{dá} \quad \text{áfá}
\end{align*}
\]

1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 be.there at.home

‘I will be at home.’

Note that the clauses with eventive predicates presented here have perfective aspectual reference, and those with stative predicates have episodic imperfective aspectual reference (the same types of aspectual reference that occur with unmarked eventive and stative clauses respectively).

These types of clauses cannot have past or present temporal reference, as is illustrated in (74) for past and (75) for present:

(74) a. Situation: My mother has just asked me what I did yesterday:

\[
\begin{align*}
\text{ǹ} & \quad \text{tì} \quad \text{má} \quad \text{tsi} \quad \text{Frignon}
\end{align*}
\]

1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 go Frignon

Intended interpretation: ‘I went to Frignon.’

b. Situation: My mother has just asked me what I did yesterday:

\[
\begin{align*}
\text{ǹ} & \quad \text{tì} \quad \text{má} \quad \text{fìr}
\end{align*}
\]

1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 sweep

Intended interpretation: ‘I swept.’

c. Situation: My mother has phoned me and is wondering where I was yesterday:

\[
\begin{align*}
\text{ǹ} & \quad \text{tì} \quad \text{má} \quad \text{dá} \quad \text{áfá}
\end{align*}
\]

1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 be.there at.home

Intended interpretation: ‘I was at home.’

d. Situation: My mother asks me where I was yesterday at 3:00 PM:

\[
\begin{align*}
\text{ǹ} & \quad \text{tì} \quad \text{má} \quad \text{dá} \quad \text{áfá}
\end{align*}
\]

1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 be.there at.home

Intended interpretation: ‘I was at home.

(75) a. Situation: My mother is on the phone, asking me what I am doing right now:

\[
\begin{align*}
\text{ǹ} & \quad \text{tì} \quad \text{má} \quad \text{tsi} \quad \text{Frignon}
\end{align*}
\]

1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 go Frignon

Intended interpretation: ‘I am going to Frignon.’

b. Situation: My mother is on the phone, asking me what I am doing right now:

\[
\begin{align*}
\text{ǹ} & \quad \text{tì} \quad \text{má} \quad \text{fìr}
\end{align*}
\]

1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 sweep

Intended interpretation: ‘I am sweeping.’

106
c. Situation: My mother has phoned me and is wondering where I am right now:

```
#ǹ ti' má dá afál
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 be there at home
Intended interpretation: ‘I am at home.’
```

The data presented thus far have indicated that this future construction is compatible with future discourse and perfective aspectual reference with eventive predicates or episodic imperfective aspectual reference with stative predicates.

With regard to other types of aspectual reference, utterances such as those given above that have eventive predicates cannot be interpreted with progressive aspectual reference, with past temporal reference (76), or in future discourse (77), as expected given the hypothesis that the future construction does not affect aspectual reference:

(76) a. Situation: My mother has just asked me what I was doing yesterday at 3:00 PM:

```
#ǹ ti' má tsɨ fɨɾɨɲɨɔ
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 go Frignion
Intended interpretation: ‘I was going to Frignion.’
```

b. Situation: My mother has just asked me what I was doing yesterday at 3:00 PM:

```
#ǹ ti' má jɛɾ
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 sweep
Intended interpretation: ‘I was sweeping.’
```

(77) a. Situation: My mother is on the phone, asking me what will be doing next Tuesday at 3:00 PM:

```
#ǹ ti' má tsɨ fɨɾɨɲɨɔ
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 go Frignion
Intended interpretation: ‘I will be going to Frignion.’
```

b. Situation: My mother is on the phone, asking me what will be doing next Tuesday at 3:00 PM:

```
#ǹ ti' má jɛɾ
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 sweep
Intended interpretation: ‘I will be sweeping.’
```

Clauses in this construction that have either eventive or stative predicates cannot have habitual aspectual reference with past (78) or present (79) temporal reference, or in future discourse (80). Again, this is what would be expected given that neither unmarked clauses with eventive predicates nor unmarked clauses with stative predicates can have...
habitual aspectual reference, and the future construction is assumed not to affect aspectual reference:

(78) a. Situation: Answering the question ‘what did you do on Fridays last year?’:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad tsî^{1} \quad Frînjîô
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{go} \quad \text{Frignion}
\]
Intended interpretation: ‘I went to Frignion.’

b. Situation: Answering the question ‘what did you do on Fridays last year?’:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad fëř
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{sweep}
\]
Intended interpretation: ‘I swept.’

c. Situation: My mother asks me where I was on Fridays last year:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad dà \quad âfâl
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{be.there at.home}
\]
Intended interpretation: ‘I was at home.’

(79) a. Situation: Answering the question ‘what do you do on Fridays?’:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad tsî^{1} \quad Frînjîô
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{go} \quad \text{Frignion}
\]
Intended interpretation: ‘I go to Frignion.’

b. Situation: Answering the question ‘what do you do on Fridays?’:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad fëř
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{sweep}
\]
Intended interpretation: ‘I sweep.’

c. Situation: Answering the question ‘where are you on Fridays?’:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad dà \quad âfâl
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{be.there at.home}
\]
Intended interpretation: ‘I am at home.’

(80) a. Situation: Answering the question ‘what will you do on Fridays next year?’:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad tsî^{1} \quad Frînjîô
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{go} \quad \text{Frignion}
\]
Intended interpretation: ‘I will go to Frignion.’

b. Situation: Answering the question ‘what will you do on Fridays next year?’:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad fëř
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{sweep}
\]
Intended interpretation: ‘I will sweep.’

c. Situation: My mother asks me where I will be on Fridays next year:

\[
\#\hat{n} \quad tì^{1} \quad mā \quad dà \quad âfâl
\]
\[
1.\text{SG.}\text{SUBJ.GRP1} \quad \text{FUT} \quad 1.\text{SG.}\text{SUBJ.GRP2} \quad \text{be.there at.home}
\]
Intended interpretation: ‘I will be at home.’
In the future construction being discussed here, imperfective aspectual reference (progressive or habitual for clauses with eventive predicates, and only habitual for clauses with stative predicates) is marked with the imperfective marker \[nà\] (in addition to the elements of the future construction). This will be discussed further in Chapter 4, but the important point here is that none of the elements of this future construction appear to affect aspectual reference. This conclusion is strengthened by the fact that the future construction is compatible with future discourse and perfect aspectual reference, but only if the clause is also marked with the perfect marker \[ʧèé\], as is demonstrated in Chapter 4 (Section 4.1).

This subsection has demonstrated that clauses that are marked with \[tɨ\] and contain a group 2 subject marker and a specific tonal change on the verb stem are used in future discourse, and that their aspectual reference is the same as that of unmarked clauses with the same predicates unless an aspect marker is also present. Thus, it appears that the future construction as a whole has some future discourse meaning. The important question here is whether this construction or one or more aspect(s) of this construction has the meaning of a future tense marker (UT < TT), a (present) prospective marker (TT < ET)\(^7\), or a future Temporal Remoteness Marker (TRM) (UT < ET). All of these options can account for the data presented thus far, so further research is needed to determine which interpretation is the correct one. This issue will be discussed more fully in the following section and in Section 7.2 where the tone pattern is presented more fully, though the issue will not be fully resolved, pending further research.

3.3.2 The Elements of Future Clauses in Anii

As exemplified in the previous section, there are three characteristics of clauses in the future construction that could possibly indicate future temporal reference, prospective aspectual reference, or a future TRM. These characteristics are the marker \[tɨ\], the group 2 subject pronoun, and the tonal change, all of which must be present for the ‘future’ clauses presented above to be acceptable in the given situations. It should be noted,

---

\(^7\) Though the fact that this future construction can be marked with other aspect markers, and in particular with a perfect marker, makes the prospective analysis less likely than the other two.
however, that the use of the group 2 subject pronoun is always accompanied by the tonal change referred to above, meaning that in reality, there are only two elements of the future construction to discuss, i.e. the marker [tì] and the construction with the group 2 subject marker and H-toned verb stem. This section discusses possible meanings for these components of ‘future’ clauses.

With reference to [tì], an important point to be made is that (unlike the examples given above) not all future clauses contain this marker. For example, observe the example in (81), where (81a), which does not contain [tì], is acceptable in the given context, but (81b), where [tì] is present, is not acceptable:

(81) Situation: Nouhoum is in charge of gluing up copies of the Anii magazine *GùGù* in every village whenever there is a new edition. A new edition has just come out, and Nouhoum’s boss asks him if he will glue it up this afternoon. Nouhoum answers:

a. gåtsiŋ ná, má párá
   tomorrow FOC 1.SG.SUBJ.GRP2 glue
   ‘I will paste TOMORROW.’

b. #gåtsiŋ ná, n tì ! má párá
   tomorrow FOC 1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 glue
   Intended interpretation: ‘I will paste TOMORROW.’

(81b) illustrates that when there is focus on the adverbial /gåtsiŋ/, ‘tomorrow’(as marked by the focus marker [ná]), the use of the future marker is not permitted, even though the topic time (tomorrow in this case) follows the utterance time. Further research into focus constructions in Anii is needed to determine why [tì] is not permitted in this case, but the important point is that this example illustrates that the marker [tì] is not present in all ‘future’ clauses.

Another case in which [tì] is not permitted in the future is that of negative clauses. Compare the examples in (82) and (83), where (82) illustrates positive answers and (83) illustrates negative answers to the same questions. The forms in (82) (with [tì]) are not acceptable to indicate a negative answer, and those in (83) are not acceptable in situations where a positive answer would be required:
(82) a. Situation: I have just told my mother that I will be busy next Tuesday. She asks me if I will go to Frignion on that day:

\[
\begin{align*}
\text{tū, ŋ} & \quad \text{tį} & \quad \text{má} & \quad \text{tsi} & \quad \text{Frignon} & \quad \text{ǹá} \\
\text{yes} & \quad 1.\text{SG.SUBJ.GRP1} & \quad \text{FUT} & \quad 1.\text{SG.SUBJ.GRP2} & \quad \text{go} & \quad \text{Frignon} & \quad \text{NEG} \\
\end{align*}
\]

Yes, I will go to Frignion.’

b. Situation: I have just told my mother that I will be busy next Tuesday. She asks me if I will sweep on that day:

\[
\begin{align*}
\text{tū, ŋ} & \quad \text{tį} & \quad \text{má} & \quad \text{fēr} & \quad \text{ǹá} \\
\text{yes} & \quad 1.\text{SG.SUBJ.GRP1} & \quad \text{FUT} & \quad 1.\text{SG.SUBJ.GRP2} & \quad \text{sweep} & \quad \text{NEG} \\
\end{align*}
\]

‘Yes, I will sweep.’

(83) a. Situation: I have just told my mother that I will be busy next Tuesday. She asks me if I will go to Frignion on that day:

\[
\begin{align*}
\text{āài, ki} & \quad \text{má} & \quad \text{tsi} & \quad \text{Frignon} & \quad \text{ná} \\
\text{no} & \quad \text{NEG.FUT} & \quad 1.\text{SG.SUBJ.GRP2} & \quad \text{go} & \quad \text{Frignon} & \quad \text{NEG} \\
\end{align*}
\]

‘No, I will not go to Frignion.’

b. Situation: I have just told my mother that I will be busy next Tuesday. She asks me if I will sweep on that day:

\[
\begin{align*}
\text{āài, ki} & \quad \text{má} & \quad \text{fēr} & \quad \text{ná} \\
\text{no} & \quad \text{NEG.FUT} & \quad 1.\text{SG.SUBJ.GRP2} & \quad \text{sweep} & \quad \text{NEG} \\
\end{align*}
\]

‘No, I will not sweep.’

Many authors (cf. Comrie 1976, Bybee, Perkins and Pagliuca 1994, Shaer 2003, Smith 2005, Ren 2008) have claimed that in languages with overt tenses, tense marking is obligatory. Thus, the fact that the marker [tɨ] is not necessary for a clause to have future temporal reference may suggest that [tɨ] may not be a tense (though cf. Ultan 1972, Tsang 1981, Hayashi and Spreng 2005, and Cable 2014 for discussion on non-obligatory tenses). Additionally, the fact that the presence of [tɨ] does not appear to affect aspectual reference may suggest that this marker is not a prospective marker either. Neither of these arguments are very strong at the moment, pending further research (including the investigation of more carefully controlled contexts).

Another option for the meaning of [tɨ], as mentioned above, is that [tɨ] is in fact a future TRM (i.e. a marker that restricts the relationship between the eventuality time and

---

72 The first negation marker is underlyingly /ki/. The [ki] in these clauses is marked as a future marker as well because of the presence of a H tone which is not present in non-future negative clauses (as is shown below, e.g. in (85), where there is no downstep because the extra tone is not there. This H tone is likely the same type of H tone as that which surfaces on verb stems in this type of construction, and it’s meaning seems to be related to lack of current realization of the eventuality in question. This is discussed further in Chapter 7.
the utterance time, specifically with the meaning that UT < ET). It is likely that [tɨ] is one of these three types of markers, since it only occurs in future clauses, but more data is needed to be able to definitively determine whether [tɨ] is a future tense, a prospective aspect, or a future TRM. In any case, since [tɨ] is not present in all ‘future’ clauses, its presence is not necessary for a clause to have future temporal reference.

The second component of the ‘future’ clauses presented above is the construction involving both the group 2 subject marker and a verb stem tone change (e.g. [má ʃɛɨ] from (83b) above). Unlike [tɨ], this construction occurs in all future clauses. In addition, however, that construction may also realize non-future discourse. For example, this construction is used in the negation of non-future clauses. Recall Example (3), repeated here:

(3) Situation: Moumouni and Ibrahim are brothers and live in the same household. Ibrahim had gone out on his moto to run errands. About 10 minutes after he went out, he came back, very dirty, with torn clothes and a scraped leg. Moumouni asks Ibrahim if he fell while he was out. Ibrahim answers:

\[ \text{ɨ} \text{ɩ} \text{ɩ} \text{ɩ} \text{ɩ} \text{ɩ} \text{ɩ} \text{ɩ} \text{ɩ}, \text{ ŋ} \text{s} \text{ɪ} \text{dá} \]

\[ \text{yes 1.SG.SUBJ.GRP1 fall} \]

‘Yes, I fell’

If Ibrahim had not in fact fallen, he would have said:

(84) \[ \text{ààɪ, kí } \text{má } \text{fídá} \text{ ɪ ná} \]

\[ \text{no NEG 1.SG.SUBJ.GRP2 fall NEG} \]

‘No, I did not fall.’

Note that this clause, which has past temporal reference, also contains a subject marker of group 2, and a change in tone on the verb stem (the underlying form of the stem meaning ‘to fall’ is /fídá/, as it surfaces in (3) above).

The examples above suggest that the form with the group 2 subject marker and the accompanying tone change must have an interpretation that is compatible with both future and negation, suggesting that this form is potentially an irrealis form, i.e. a form
that indicates a lack of realization (at the utterance time) of the eventuality denoted by the clause it marks. Chung and Timberlake (1985: 241) claim that cross-linguistically, irrealis forms are found in several (but not necessarily all) of the following contexts: “conditionals, counterfactuals, imperatives, futures, questions, negatives, obligations, desideratives, potentials, and warnings”. Not all of these types of situations have yet been investigated in Anii, but this section has illustrated that futures and negatives use the form with the group 2 subject marker and the tone change. In addition, recall that this form is also used in clauses used as the ‘forced to’ diagnostic from Chapter 2, which could be considered an obligation form.

Another common use of this form in Anii, which is clearly futurate and could perhaps be argued to be a type of imperative in some cases, is shown in (85):

(85) Situation: It is traditional at the new year to wish that good things will happen in the next year to those you meet. For example:

a. á wōdá gi-táni
   2.SG.SUBJ.GRP2 have CL.D-money
   ‘May you have money [be rich].’

b. á ŋōm bò-pi tūtūúmà
   2.SG.SUBJ.GRP2 give.birth CL.W-child many
   ‘May you bear many children.’

The ‘wish’ meanings in (85) may in fact be the most basic meaning of this type of form, a fact which is compatible with the hypothesis that forms with group 2 subject markers and the accompanying tonal change are irrealis forms. Interestingly, forms such as those in (85) can also be used as polite commands (though it would be strange to command someone to have money, or to give birth).

Additional examples which support the hypothesis that this form might have irrealis meaning are given below. Examples (86) and (87) illustrate what may be two types of desideratives:
(86) Situation: The speaker is giving an excuse as to why she allowed the pâte\textsuperscript{73} to burn:
\[\text{ños } \text{jò wàà mó } tóótoó, \text{ámá } \text{kí má}
\]
\text{1.SG.SUBJ.GRP1 know that 1.SG.SUBJ.GRP2 stir but NEG 1.SG.SUBJ.GRP2}
\text{sírà } \text{ná}
\text{be.able NEG}
\text{‘I wanted to stir, but I could not.’}

(87) Situation: The speaker is telling her friend about her plans for the following day. She is not sure she will have time for anything but work, but if she does:
\[\text{ños } \text{tí jëjë } \text{mó } \text{jëjëjë}
\]
\text{1.SG.SUBJ.GRP1 IMPF search 1.SG.SUBJ.GRP2 stroll}
\text{‘I want to stroll.’}

Note that the utterance in (86) is not acceptable if the speaker actually did stir, it can only be uttered if something (e.g. a hand cramp) prevented her from stirring. The form in (87) can often be used in the same type of situation as the ‘future’ form (that marked with [tí]) discussed above. Further investigation of the exact differences between the two forms is a subject for future research, but thus far, it seems that the form in (87) is more about the speaker’s desires, while the [tí] form discussed above has no element of the speaker’s wishes in its meaning.

The examples provided above suggest that in a clause containing a group 2 subject marker and its accompanying tonal change, the speaker is potentially asserting that the eventuality denoted by the utterance in question has not actually occurred, so the clause cannot have a realis interpretation (see Tonhauser 2006 for similar claims about irrealis forms in Paraguayan Guarani). More research still needs to be carried out to determine whether or not this form is indeed an irrealis form, but such an analysis is quite plausible, given the data presented above. Therefore, for the remainder of this dissertation, I will refer to the construction containing a group 2 subject marker and a grammatical H tone on the verb stem as an ‘irrealis construction’, and the group 2 subject markers as ‘irrealis’ subject markers (as opposed to the ‘realis’ markers in group 1). More discussion of this

---

\textsuperscript{73} This is the French name in Benin and Togo for a traditional African dish usually made with cornmeal these days, but which can also be made with millet, cassava or other grains. In East Africa, this dish is often called ugali, and in some places in West Africa, it is called fufu. This dish can be served with a variety of sauces, and is a staple of Anii cuisine.
form, and particularly of possible interpretations of the H tone in this construction, can be
found in Section 7.2, after the relevant tone pattern has been presented in more detail.

What should be clear from this section is that Anii appears to have a future/non-future
distinction, but several questions remain. First of all, further research is needed to
determine the meaning of both the marker [ti] and the ‘irrealis’ construction. Secondly, it
is not yet certain whether the future/non-future distinction is one of temporal reference,
aspectual reference (though this seems unlikely) or whether Anii has a future TRM. For
the moment, I assume that the future construction has future temporal reference, as
opposed to the examples given in previous sections, which have non-future temporal
reference. Given the remaining uncertainties in the interpretation of the various types of
future clauses, however, the analysis in the next section will focus on clauses with non-
future temporal reference.

3.4 Formal Analysis of Unmarked and [ti]-Marked Clauses

The data presented in the previous sections have illustrated the temporal and
aspectual interpretation of several types of clauses in Anii, with a focus on clauses with
perfective and imperfective aspectual reference, illustrating the instantiation in Anii of a
A remaining question, of course, is how the generalizations presented above can be made
formally precise. This section proposes a formal compositional analysis of the non-future
clause types presented above, and shows how Aktionsarten can be incorporated into the
analysis of temporal and aspectual reference in Anii. This analysis will be refined and
expanded in Chapter 4 to include other markers.

Section 3.4.1 provides a summary of the empirical generalizations that need to be
accounted for, and Section 3.4.2 introduces the formal framework that will be used.
Section 3.4.3 contains the proposed analysis, and finally Section 3.4.4 is a discussion of
further issues that are raised by the analysis presented.
3.4.1 Empirical Generalizations

Recall from the previous sections that unmarked eventive clauses can have only past temporal reference and perfective aspectual reference, while unmarked stative clauses have past or present temporal reference and episodic imperfective aspectual reference. Additionally, clauses marked with the imperfective marker [tɪ] with eventive predicates can have past or present temporal reference and imperfective (progressive (episodic) or habitual) aspectual reference. Finally, [tɪ]-marked clauses with stative predicates can only have past or present temporal reference and habitual aspectual reference.

Table 4 summarizes the possible interpretations of the non-future clauses with eventive predicates that have been discussed in this chapter:

<table>
<thead>
<tr>
<th>Clauses with Eventive Predicates</th>
<th>Perfective Aspectual Reference</th>
<th>Episodic Imperfective Aspectual Reference</th>
<th>Habitual Aspectual Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Temporal Reference</td>
<td>unmarked</td>
<td>[tɪ]-marked</td>
<td>[tɪ]-marked</td>
</tr>
<tr>
<td>Present Temporal Reference</td>
<td>n/a</td>
<td>[tɪ]-marked</td>
<td>[tɪ]-marked</td>
</tr>
</tbody>
</table>

*Table 4: Temporal and aspectual reference in clauses with eventive predicates*

In contrast, Table 5 presents the interpretations of the non-future clauses with stative predicates that have been presented here:

<table>
<thead>
<tr>
<th>Clauses with Stative Predicates</th>
<th>Perfective Aspectual Reference</th>
<th>Episodic Imperfective Aspectual Reference</th>
<th>Habitual Aspectual Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Temporal Reference</td>
<td>n/a</td>
<td>unmarked</td>
<td>[tɪ]-marked</td>
</tr>
<tr>
<td>Present Temporal Reference</td>
<td>n/a</td>
<td>unmarked</td>
<td>[tɪ]-marked</td>
</tr>
</tbody>
</table>

*Table 5: Temporal and aspectual reference in clauses with stative predicates*
Any analysis of the Anii facts summarized in the preceding tables must explain 1) why unmarked clauses have restricted temporal and aspectual reference without overt markers to account for those restrictions, and 2) why the same clause types have different temporal and aspectual interpretation with eventive predicates versus stative predicates. Additionally, of course, an analysis must include a proposed meaning for the imperfective marker [tɩ] that accounts for the behavior of all [tɩ]-marked clauses. The next section introduces the framework in which the analysis will be presented.

3.4.2 Formal Background for the Proposed Analysis

The semantic analysis in this dissertation is formulated in the framework of Montague semantics (cf. Dowty, Wall and Peters 1981). This means that the meanings of clauses are represented by the meanings of higher-order predicate logic translations. The basic logical types that will be used here include \(i\) for individuals, \(t\) for time intervals, \(t\) for truth values and \(\varepsilon\) for eventualities. Since I am not analyzing modal expressions here, the concept of possible worlds will not be needed. In the following chapter, however, the type for worlds (\(\omega\)) will also come into play. I also assume that these basic types can combine into other types, so that if \(a\) and \(b\) are types, then \(<a, b>\) is also a type.

The predicate logic language used in this analysis includes logical constants (connectives and quantifiers), predicates (non-zero \(n\)-ary non-logical constants), individual constants (0-ary non-logical constants), and variables. Individual constants and variables are referred to as ‘terms’. These elements combine as in (88) (modified from Partee, ter Meulen and Wall 1990, 325):

\[\text{(88)}\]

The set of formulas of predicate logic (which are of type \(t\)) is the smallest set satisfying the following conditions:

a. If \(P\) is an \(n\)-ary predicate and \(t_1, \ldots, t_n\) are all terms, then \(P(t_1, \ldots, t_n)\) is a formula.
b. If \(\varphi\) is a formula, then \(\neg \varphi\) is a formula.
c. If \(\varphi\) and \(\psi\) are formulas, then \((\varphi \land \psi)\) is a formula
d. If \(\varphi\) and \(\psi\) are formulas, then \((\varphi \lor \psi)\) is a formula
e. If \(\varphi\) and \(\psi\) are formulas, then \((\varphi \rightarrow \psi)\) is a formula
f. If \(\varphi\) and \(\psi\) are formulas, then \((\varphi \leftrightarrow \psi)\) is a formula

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g. If \( \phi \) is a formula and \( v \) is a variable of any type, then \( (\forall v)\phi \) is a formula
h. If \( \phi \) is a formula and \( v \) is a variable of any type, then \( (\exists v)\phi \) is a formula

This analysis makes use of typed lambda calculus, meaning that there is an additional variable-binding operator, i.e. \( \lambda \). This operator combines expressions through \( \lambda \)-abstraction, defined in (89), from Partee, ter Meulen and Wall (1990, 341):

(89) \( \lambda \)-abstraction, Syntax:
If \( u \) is a variable of type \( a \), and \( \alpha \) is an expression of type \( b \), then \( (\lambda u)\alpha \) is an expression of type \( <a, b>\)

Predicate logic formulas are interpreted by an interpretation function represented by double brackets, such that if \( \alpha \) is a logical expression, then \( [\alpha] \) is the denotation of \( \alpha \).

The interpretation function \( [\ ] \) is defined as in (90) (modified from Partee, ter Meulen and Wall 1990, 326). The fact that the interpretation function always applies relative to a model and a variable assignment function is indicated by the superscripted symbols \( ^M \) for the model and \( ^g \) for the variable assignment function that are used throughout the analysis below:

(90) a. If \( \alpha \) is a variable in the logic language, then \( [\alpha]^{M,g} = g(\alpha) \)
b. If \( \alpha \) is a non-logical constant in the logic language, then \( [\alpha]^{M,g} = F(\alpha) \)
c. If \( P \) is an \( n \)-ary predicate, and \( t_1, \ldots, t_n \) are all terms, then \( [P(t_1, \ldots, t_n)]^{M,g} = 1 \) iff the tuple \( \langle [t_1]^{M,g}, \ldots, [t_n]^{M,g} \rangle \in [P]^{M,g} \)

As (90) shows, \( F \) is a function that maps \( n \)-ary predicates to sets of \( n \)-tuples of entities in the domain of the model. The variable assignment function \( g \) maps variables to different types of entities in the model domain. For variables of type \( i \), the entity mapped to is an individual, while for variables of type \( t \), the entity is a time interval. Additionally, the variable assignment function maps variables of type \( t \) to truth values, those of type \( e \) to eventualities, and those of type \( \omega \) to possible worlds. For more complex types, the

---

74 \( \in \) is the set theory symbol meaning ‘is an element of’, denoting membership in a given set. It's opposite, the symbol ‘\( \not\in \)’ (used below), means ‘is not an element of’. I assume a basic understanding of set theory in the analysis here. Other set theory symbols are discussed below.
meaning of an expression of type \(<a,b>\) is a function from the interpretation of type \(a\) to that of type \(b\). The interpretation of \(F\) is similarly affected by the type of the relevant expression.

The logical constants are defined truth-conditionally as in (91) (modified from Partee, ter Meulen and Wall 1990, 326-327):

(91) If \(\varphi\) and \(\psi\) are predicate logic expressions of type \(t\), then:
   a. \(\llbracket \neg \varphi \rrbracket_{M,g} = 1\) iff \(\llbracket \varphi \rrbracket_{M,g} = 0\)
   b. \(\llbracket \varphi \land \psi \rrbracket_{M,g} = 1\) iff \(\llbracket \varphi \rrbracket_{M,g} = 1\) and \(\llbracket \psi \rrbracket_{M,g} = 1\)
   c. \(\llbracket \varphi \lor \psi \rrbracket_{M,g} = 1\) iff \(\llbracket \varphi \rrbracket_{M,g} = 1\) or \(\llbracket \psi \rrbracket_{M,g} = 1\)
   d. \(\llbracket \varphi \rightarrow \psi \rrbracket_{M,g} = 1\) iff \(\llbracket \varphi \rrbracket_{M,g} = 0\) or \(\llbracket \psi \rrbracket_{M,g} = 1\)
   e. \(\llbracket \varphi \leftrightarrow \psi \rrbracket_{M,g} = 1\) iff \(\llbracket \varphi \rrbracket_{M,g} = \llbracket \psi \rrbracket_{M,g}\)
   f. If \(\varphi\) is a formula and \(v\) is a variable of any type \(\tau\), then \(\llbracket \forall v \varphi \rrbracket_{M,g} = 1\) iff for all \(d \in D_{\tau}\), \(\llbracket \varphi \rrbracket_{M,g'[d/v]} = 1\)
   g. If \(\varphi\) is a formula and \(v\) is a variable of any type, then \(\llbracket \exists v \varphi \rrbracket_{M,g} = 1\) iff there is at least one \(d \in D_{\tau}\), such that \(\llbracket \varphi(m) \rrbracket_{M,g'[d/v]} = 1\)

The interpretation of \(\lambda\)-abstracted expressions is given in (92), modified from Partee, ter Meulen and Wall (1990, 341):

(92) \(\lambda\)-abstraction, Semantics:
   Given \(u\) of type \(a\), and \(\alpha\) of type \(b\), then \(\llbracket (\lambda u \alpha) \rrbracket_{M,g} = \text{that function } f' \text{ from } D_a \text{ to } D_b \text{ such that for any object } k \text{ in } D_a, f(k) = \llbracket \alpha \rrbracket_{M,g'}\), where \(g'\) is just like \(g\) except that \(g'(u) = k\)

Now that the logical constants and the \(\lambda\) operator have been defined, there is one more important set of symbols that need to be presented. In the domain of the model assumed here, there are, as discussed above, entities, eventualities, and times. It is

75 Where \(D_{\tau}\) is interpreted as follows for the types used in this analysis:
   For simple types:
   \(D_i\) = the set of individuals
   \(D_t\) = the set of time intervals
   \(D_e\) = \(\{0,1\}\) (i.e. the set of truth values)
   \(D_{\omega}\) = the set of eventualities
   \(D_{\omega}\) = the set of possible worlds
   For complex types (if \(a\) and \(b\) are simple or complex types):
   \(D_{<a,b>}\) = the set of functions from \(D_a\) to \(D_b\)
important to note that the set of times is not just an unordered group of time intervals.
Since time in actuality is linear (certain times precede other times), I assume that within
the set of times, there are certain properties defined over the intervals. For example, I
assume a dense ordering relation \(<,\)\(^{76}\) such that for all \(i, j, k\) in the set of times, if \(i < k\)
and \(j < k\), then either \(i < j\) or \(j < i\) if \(i \neq j\). I also assume that this relation is transitive, such
that for all \(i, j, k\) in the set of times, if \(i < j\) and \(j < k\), then \(i < k\).

Relations between time intervals are generally expressed in this analysis using the
cancepts and notation of set theory (as was done as a shorthand in Chapter 2). The
notation for such relations that is used here includes subset and superset notation (\(\subset, \subseteq,\)
\(\supset, \supseteq\)), precedence notation (\(<, \leq, >, \), and \(\geq\)), notation for overlap (\(\ast\)), and notation for
equality and inequality (= and \(\neq\)). I assume standard definitions for these symbols, as
given in (93) (cf. Pollard 2008)

(93) If \(A\) and \(B\) are sets (in this case, sets of time intervals, of type \(<t, t>\):

a. \([A \subseteq B]_{M,g} = 1\) iff for all \(a \in [A]_{M,g}\), \(a \in [B]_{M,g}\)
b. \([A \subset B]_{M,g} = 1\) iff for all \(a \in [A]_{M,g}\), \(a \in [B]_{M,g}\), but there is at least one
\(b \in [B]_{M,g}\) such that \(b \not\in [A]_{M,g}\).
c. \([A \supseteq B]_{M,g} = 1\) iff for all \(b \in [B]_{M,g}\), \(b \in [A]_{M,g}\)
d. \([A \supset B]_{M,g} = 1\) iff for all \(b \in [B]_{M,g}\), \(b \in [A]_{M,g}\), but there is at least one
\(a \in [A]_{M,g}\) such that \(a \not\in [B]_{M,g}\).
e. \([A \leq B]_{M,g} = 1\) iff for all \(a \in [A]_{M,g}\) and \(b \in [B]_{M,g}\), \(a \leq b\) or \(a = b\).
f. \([A < B]_{M,g} = 1\) iff for all \(a \in [A]_{M,g}\) and \(b \in [B]_{M,g}\), \(a < b\).
g. \([A \geq B]_{M,g} = 1\) iff for all \(a \in [A]_{M,g}\) and \(b \in [B]_{M,g}\), \(a \geq b\) or \(a = b\).
h. \([A > B]_{M,g} = 1\) iff for all \(a \in [A]_{M,g}\) and \(b \in [B]_{M,g}\), \(a > b\).
i. \([A \ast B]_{M,g} = 1\) iff for some \(a \in [A]_{M,g}\), \(a \in [B]_{M,g}\), and for some
\(b \in [B]_{M,g}\), \(b \in [A]_{M,g}\).
j. \([A = B]_{M,g} = 1\) iff for all \(a \in [A]_{M,g}\), \(a \in [B]_{M,g}\), and for all \(b \in [B]_{M,g}\),
\(b \in [A]_{M,g}\).
k. \([A \neq B]_{M,g} = 1\) iff for some \(a \in [A]_{M,g}\), \(a \not\in [B]_{M,g}\) and/or for some
\(b \in [B]_{M,g}\), \(b \not\in [A]_{M,g}\).

\(^{76}\) \(<\) (or its opposite \(>\)) represents an order relation. An order is a reflexive transitive antisymmetric
relation on sets (see Pollard 2008 for more discussion). A relation \(R\) is considered to be reflexive if \(a R a\)
for all \(a \in A\). A relation \(R\) is a transitive relation if \(a R b\) and \(b R c\) implies \(a R c\) for all \(a, b, c \in A\), and
\(R\) is an antisymmetric relation if \(a R b\) and \(b R a\) imply \(a = b\) for all \(a, b \in A\). In this analysis, the
relevant order is that of time intervals, so the temporal terms 'before' and 'after' are used to describe the relation.
I will now turn to the representations of predicates and variables. Capital letters such as $P$, $Q$, $R$, etc., represent predicates (non-logical constants). The type of each predicate is given in the analysis where it is relevant. Lower-case letters represent variables. The variables $e, e', e''$, etc., are interpreted as eventive eventualities, while $s, s', s''$, etc. are interpreted as stative eventualities. The variables $d, d', d''$, etc. range over both stative and eventive eventualities. All of the variables that are interpreted as eventualities are of type $\varepsilon$. Additional variables used are those ranging over intervals (i.e. $i, j, k$, etc., and also $t$ in some cases), which are of type $t$. One variable of type $i$ is used in this analysis, $sp$, which ranges over individuals and denotes the speaker of a given utterance.

The topic time and the utterance time are translated by variables ranging over intervals, as well, specifically the variables $t_t$ and $t_u$ respectively, the values of which are assumed to be contextually defined for each utterance. The variable $sp$ is also contextually-defined because the exact individual represented by $sp$ changes depending on who is speaking the utterance. An important question, then, is that of how context should be incorporated into the analysis, i.e. what does it mean to be contextually-defined. A conventional approach (cf. Lewis 1972, Dowty, Wall and Peters 1981) to context that covers the interpretation of many context-dependent variables is that of assuming a set of contextual indices, generally written collectively as a superscripted $c$. These indices include e.g. the speaker of a given utterance, or the utterance time. The interpretation of certain variables or constants is assumed to be relative to these indices. For example, the interpretation of $sp$ would be relative to the speaker index, i.e. $g(sp) =$ the speaker indexed in $c$ (i.e. the speaker of the utterance). Similarly, $g(t_u) =$ the time indexed in $c$ (i.e. the time of the utterance).

The topic time is not typically interpreted with respect to $c$, because it is anaphoric on discourse context, as discussed in Chapter 2, and cannot be interpreted using simple context indices. In this case, then, $t_t$ is considered to be a contextually-determined variable in that the value assigned to $t_t$ by any given variable assignment function is constrained by the context in which the utterance is spoken (and/or by tense morphemes, as is illustrated in the analysis below). The eventuality time, on the other hand, is not context-dependent, and is translated as a temporal trace function, $\tau$, from eventualities to
eventuality times (cf. Krifka 1989 and following literature). For example, \( \tau(e) \) denotes the eventuality time of an eventuality \( e \).

Given the framework outlined in this section, an analysis of Anii unmarked clauses that accounts for the difference in interpretation between unmarked clauses with eventive and stative predicates will now be proposed.

### 3.4.3 Analysis of Unmarked Clauses

The first step of the analysis proposed here is to account for the effects of Aktionsarten. Bohnemeyer and Swift (2004) account for ‘default aspect’ in telicity-dependent languages by relying on an operator which they call DASP, which is a covert (i.e. phonologically null) aspect marker. This analysis takes a similar approach, and accounts for the dynamicity-dependent Anii data by modeling stativity and dynamicity as a covert operator which I will call an Aktionsart marker. This marker adds aspectual meaning to clause radicals, and may affect the composition of those radicals with aspect markers. In this respect, the Aktionsart marker is somewhat similar to aspectual modifiers (e.g. negation, frequency or quantificational adverbs) in some analyses (cf. Deo 2009)—it applies to eventive or stative predicates of eventualities (in this case, clause radicals), and yields predicates of intervals. To be more precise, I assume that clause radicals are of type \( <\varepsilon, t> \), and the Aktionsart marker is of type \( <\varepsilon, t>, <\iota, t> > \). The order of composition is given in (94):

\[
(94) \quad (\text{Aktionsart} <\varepsilon, t>, <\iota, t> > (\text{Clause radical} <\varepsilon, t>))
\]

Though the detail of the internal composition of these clause radicals is beyond the scope of this analysis, the Aktionsart of the verbal predicate is assumed (in certain conditions, such as in unmarked clauses) to determine the Aktionsart of the clause that contains that predicate. This fact is represented here by the use of different variables to represent different eventualities (e.g. \( e \) for events and \( s \) for states). If a given clause radical is a predicate of events (i.e. denotes an eventive eventuality), one interpretation of the Aktionsart marker, AKT, will be chosen. If the clause radical instead is a predicate of
states (i.e. denotes a stative eventuality), AKT has a different interpretation. AKT is defined as in (95), where \( P \) is a function from eventualities to truth values (i.e. a clause radical), \( e \) is a variable ranging over eventive eventualities, \( s \) is a variable ranging over stative eventualities, \( \tau \) is a temporal trace function, and \( i \) is a variable ranging over intervals:

\[
\begin{align*}
\text{(95) } & [\text{AKT}_{\text{\(\prec\)}\text{, } P, \text{\(\prec\)}, P}]^\text{M, g, c} = [\lambda P_{\text{\(\prec\)}}, \lambda i_{\text{\(\prec\)}}, \exists e[P(e) \land \tau(e) \subset i]]^\text{M, g, c} \\
& \text{if } P \text{ is a predicate of events} \\
& \text{OR} \\
& = [\lambda P_{\text{\(\prec\)}}, \lambda i_{\text{\(\prec\)}}, \exists s[P(s) \land \tau(s) \supseteq i]]^\text{M, g, c} \\
& \text{if } P \text{ is a predicate of states}
\end{align*}
\]

This translation denotes a function from intervals \( i \) to truth values such that if \( P \) is a predicate of events, there is an eventive eventuality whose eventuality time is included in \( i \). If \( P \) is a predicate of states, however, AKT says that there is a stative eventuality whose eventuality time includes or is equal to \( i \). When combined with a clause radical, then, AKT can account for the differences in temporal and aspectual reference found in unmarked clauses.

To exemplify how the analysis works, I will use the clause /ń tsɨ Fɨrɨɲɨ/, ‘I went to Frignion’, which has an eventive predicate, and the clause /ń da afál/, ‘I am/was at home’, which has a stative predicate. A predicate logic translation of the meaning of the eventive clause radical /ń tsɨ Fɨrɨɲɨ/ is given in (96), where \( e \) is a variable ranging over eventive eventualities, and \( sp \), as discussed above, denotes the speaker of the utterance:

\[
\begin{align*}
\text{(96) } & [\text{ń tsɨ Fɨrɨɲɨ}_{\text{\(\prec\)}}, P]^{\text{M, g, c}} = [\lambda e[\text{go.to.Frignion}(e, sp)]]^{\text{M, g, c}} 
\end{align*}
\]

The result of composing the Aktionsart marker AKT with the eventive clause radical /ń tsɨ Fɨrɨɲɨ/ is given in (97):
This translation is predicted to be true if there is an event of the speaker going to Frignion, and the eventuality time of that event is included in an interval $i$.

The part of the meaning of unmarked clauses with eventive predicates that is not accounted for in (97) is the fact that such clauses cannot have future temporal reference. Given this generalization, and pending further research into the meaning of clauses with future temporal reference (which would shed light on whether or not Anii truly has tense marking), I assume that the future/non-future distinction in Anii is due to covert tense marking. I thus posit the existence of a phonologically null non-future tense marker, NONFUT, following the analysis of a future/non-future distinction in St’át’imcets proposed by Matthewson (2006). The meaning of NONFUT is given in (98), where $t_t$ is a variable ranging over intervals, i.e. the contextually-defined topic time, and $g(t_t)$ is a (contextually-determined) variable assignment function that assigns value to $t_t$:

(98) $\llbracket \text{NONFUT}_{<} \rrbracket_{M, g, c} = \llbracket t_t \rrbracket_{M, g, c}$

only defined if $g(t_t) \leq \llbracket t_u \rrbracket_{M, g, c}$

(98) says that NONFUT restricts the topic time so that it precedes or equals the utterance time.

Given (98), then, the final translation of the clause /ń tsi Frîńiô/, ‘I went to Frignion’, would be derived as shown in (99):

(99) a. $\llbracket \text{AKT}_{<} \rrbracket_{M, g, c} = \llbracket \lambda i_{<} \exists e [\text{go.to.Frignion}(e, sp) \land \tau(e) \subset i]_{<} \rrbracket_{M, g, c} = \llbracket \lambda i_{<} \exists e [\text{go.to.Frignion}(e, sp) \land \tau(e) \subset i]_{<} \rrbracket_{M, g, c} = \llbracket t_t \rrbracket_{M, g, c}$

b. $\llbracket \text{NONFUT}_{<} \rrbracket_{M, g, c} = \llbracket \text{AKT}_{<} \rrbracket_{M, g, c} = \llbracket \exists e [\text{go.to.Frignion}(e, sp) \land \tau(e) \subset t_t]_{\leq} \rrbracket_{M, g, c}$ (only defined if $g(t_t) \leq \llbracket t_u \rrbracket_{M, g, c}$)
This translation is predicted to be true if and only if there is an event of the speaker going
to Frignion, whose event time \( \tau(e) \) is included in the topic time \( t_t \), and the topic time is
or precedes the utterance time \( t_u \). This is partially the desired outcome, indicating that
the clause \( /ñ tsi Firõnî/ \) has perfective aspectual reference and non-future temporal
reference. Recall, however, that unmarked clauses with eventive predicates cannot have
present temporal reference, and the translation in (99) does not preclude the possibility
that \( t_t = t_u \). The fact that such clauses can only have past temporal reference (not present)
comes from the fact that topic time includes the eventuality time. In the case of \( t_t = t_u \)
(i.e. = now), the topic time is a single moment, which is practically not a long enough
time to include the eventuality time of an event of going to Frignion. Present temporal
reference is thus precluded by the known facts of the world, rather than by the translation
itself.

The analysis of unmarked clauses with stative predicates would be similar to that of
the unmarked clauses with eventive predicates presented above, except that AKT would
have a different interpretation. The example of an unmarked clause with a stative
predicate that will be used here is \( /ñ da afål/ \), ‘I am/was at home’. A predicate logic
translation of the clause radical (not the clause) \( /ñ da afål/ \) is provided in (100). Note that
I leave off the superscripts \( ^M, g, c \) here, and in the following derivations in this chapter, but
all the interpretations are still assumed to be in relation to a model, a variable assignment
function, and a set of contextual indices:

\[
\text{(100) } [ñ dà âfål}_{\leq t, t} = [\lambda s[\text{be.at.home}'(s, sp)]]
\]

This radical can be composed with AKT and NONFUT in order to give a translation
of the meaning of the clause \( /ñ da afål/ \), as illustrated in (101):

\[
\text{(101)a. } [\text{AKT}_{\leq t, t, \leq t, t} (ñ dà âfål)]_{\leq t, t} =
[\lambda i\exists s[\text{be.at.home}'(s, sp) \land \tau(s) \supset i]_{\leq t, t}]
\]
The final translation in (101) is only true if and only if there is a state of the speaker being at home, and the eventuality time of that state ($\tau(s)$) includes or is equal to the topic time ($t_i$) of the clause, and the topic time precedes or is equal to the utterance time ($t_u$). In other words, this translation means that unmarked clauses with stative predicates have episodic imperfective aspectual reference and non-future temporal reference, adequately accounting for the empirical generalizations presented above.

This section has presented an analysis of unmarked clauses in Anii which accounts for the effects of Aktionsarten, as well as for the fact that Anii unmarked clauses cannot have future temporal reference (and that unmarked clauses with eventive predicates cannot have present temporal reference either). The next section provides an analysis of both eventive and stative clauses that are marked with the imperfective marker [tɩ].

### 3.4.4 Analysis of [tɩ]-marked clauses

As was illustrated in Section 3.2, [tɩ] is an imperfective marker. This means that its meaning must include the possibility of either episodic imperfective or habitual interpretation. As briefly discussed in Chapter 2 and above, Deo (2009) has proposed a method of formally representing the ‘double nature’ of an imperfective marker. Formally, Deo's proposal makes use of the idea of inertia futures (Dowty 1979) to define the domain of the quantifier, and also to incorporate the idea of expected continuation that is part of the interpretation of habitual aspectual reference (cf. Deo 2009). As mentioned above in section 3.2.1.2, part of the meaning of habitual clauses is that the regular occurrence of the eventuality denoted by such clauses is expected to continue past the topic time. Progressive clauses include no such expectation in their meaning.

Deo’s proposal (partially following Dowty 1979) is couched within the framework of branching time semantics (Thomason 1970, 1984), in which times are conceptualized as
being in a tree-like relation. The necessary mathematical definitions are introduced by Deo (2009: 489) in the following way:

(102) a. *Treelike frame*: “a pair \( \mathcal{T}, \prec \), where \( \mathcal{T} \) is a non-empty set of times with a dense ordering, and \( \prec \) is a transitive tree-like relation on \( \mathcal{T} \) such that for all \( t, u, v \in \mathcal{T} \) if \( u \prec t \) and \( v \prec t \), then either \( u \prec v \) or \( v \prec u \) if \( u \neq v \).”

b. *History* (or *maximal chain*): “a history...on \( \mathcal{T} \) is a subset \( h \) of \( \mathcal{T} \) such that:
- If for all \( t, u \in h \), if \( t \neq u \), then \( t \prec u \) or \( u \prec t \) and if \( g \) is any subset \( h \) of \( \mathcal{T} \) such that for all \( t, u \in g \), if \( t \neq u \), then \( t \prec u \) or \( u \prec t \), then \( g = h \) if \( h \subseteq g \).
- For any \( t \in \mathcal{T} \), \( H_t \) is the set of histories containing \( t \).”

c. *Interval*: (from Dowty 1979: 64) “an interval \( i \) is a subset of \( \mathcal{T} \) such that:
- \( i \) is a proper subset of some history \( h \subseteq \mathcal{T} \)
- For all \( t_1, t_2, t_3 \in h \), if \( t_1, t_3 \in i \), and \( t_1 \prec t_2 \prec t_3 \), then \( t_2 \in i \)

What is important to note from these definitions is that in this framework, a history is a “totally ordered subset of the set of times” (Deo 2009, 488). That is, a history is a set of intervals that essentially form a line from past to future—each member of the set is ordered immediately before exactly one other member of the set, and immediately after exactly one other member of the set, and the members of the set do not overlap.

Another important concept for this analysis is the assumption that for each time interval \( i \), there is a set of inertial histories \( (H_{inr}) \), which is a proper subset of the set of all possible histories containing \( i \). The set of inertial histories is defined by the function \( Inr \) (Dowty 1979: 152), which maps each interval \( i \) to a proper subset of all the histories containing \( i \).

One final concept is essential to understanding Deo’s definition of an imperfective marker, i.e. the idea of a regular partition. The definition of a regular partition \( (\mathcal{R}) \) of an interval \( i \), from Deo (2009, 490) is given in (103):

(103) \( \mathcal{R} \) is a regular partition of \( i \) if \( \mathcal{R} \) is a set of intervals \( \{j, k...n\} \) such that
- \( \cup\{j, k...n\} = i \)
- \( \forall j, k \in \mathcal{R} \rightarrow j \cap k = \emptyset \) if \( j \neq k \)

77 This type of relation on time intervals was already assumed above, though not in relation to histories, as it is given here
\[ \forall j, k \in \mathcal{R} \rightarrow \mu(j) = \mu(k) \]

(where \( \mu(x) \) is the Lebesgue Measure of \( x \), a standard way of assigning length (or area or volume) in Euclidean space)

This definition says that a regular partition is a set of exhaustive, non-overlapping, equal-sized partitions of a given interval.

With the background given above, I can now present Deo's translation of an imperfective marker (Deo 2009, 508). This translation, given in (104), is intended to apply to either predicates of eventualities or predicates of intervals. The major difference between the two is in the definition of the coincidence relation (COIN), as (104) shows:

\[
\text{(104)} \quad \left[ \text{IMPF} \right] = \left[ \forall \lambda P \forall i. \exists i \forall h[h \in H_{inr} \rightarrow \exists j[i \subseteq_{int} j \land \forall k \in \mathcal{R} \rightarrow \text{COIN}(P, k, h)]] \right]
\]

where \( \text{COIN}(P, k, h) = P(k) \land k \subset h \) (if \( P \) is a predicate of intervals),

OR \( \text{COIN}(P, k, h) = \exists d[P(d) \land \tau(d) \circ k \land \tau(d) \subset h] \) (if \( P \) is a predicate of eventualities)

(104) says that a clause marked with IMPF (i.e. IMPF\((P)\), where \( P \) is a predicate of intervals or eventualities) is true if for each inertial history \( h \) of an interval \( i \) \((h \in H_{inr} )\), there is an interval \( j \) such that \( i \) is in the set of initial subintervals of \( j \) \((i \subseteq_{int} j)\), and \( P \) is instantiated in every cell \( k \) \((\text{COIN}(P, k, h))\) of a contextually-defined regular partition of \( j \) \( (\mathcal{R}_j) \). According to Deo, this definition can account for the fact that habitual aspectual reference includes the expectation (at the topic time) that an event will continue to occur, but progressive aspectual reference does not include this expectation (see Deo 2009 for more discussion on this issue). This difference is accounted for by assuming that progressive readings occur if \( i = j \) in the definition above (i.e. if \( i \) is not a future-extending interval), while habitual readings occur when \( i \subset j \) (i.e. if \( i \) is a future-extending interval).

I assume that the Anii imperfective marker \([t]i] \) is defined using Deo’s definition of an imperfective marker, as in (105). Here, and in the analyses that follow, I leave off the superscripts \(^{M.g.c.}\) for simplicity’s sake, but this does not mean they are not part of the interpretation of the forms below:
Note that the Anii imperfective marker in (105) is assumed to be of type $<<ε,t>,<t,t>>$. This means that [ti] applies directly to clause radicals, not to the combination of the Aktionsart marker and a clause radical. This order of application is assumed to be the case for several reasons. First, as was shown above, all [ti]-marked clauses are stative, regardless of the Aktionsart of the predicate in the clause. This fact suggests that the meaning of the imperfective marker in some sense over-rides the contribution of the Aktionsart marker. This fact is modeled here by saying that this marker is not present in imperfective-marked clauses. Additionally, recall that the only difference between the interpretation of [ti]-marked clauses with eventive predicates and that of [ti]-marked clauses with stative predicates is that the latter type of clauses cannot have episodic imperfective aspectual reference, while the former can.

Recall also that unmarked clauses with stative predicates have only episodic imperfective aspectual reference. This fact is mentioned here because it suggests that the difference in interpretation between [ti]-marked clauses with eventive predicates and that of [ti]-marked clauses with stative predicates may actually be due to the interpretation of unmarked clauses, not that of [ti]-marked clauses. To clarify, if one assumes that all [ti]-marked clauses have the same range of interpretation available in their meaning, then the fact that [ti]-marked clauses with stative predicates can not have episodic imperfective interpretation could be due to the fact that that interpretation is blocked for such clauses because that is exactly the interpretation that unmarked clauses with stative predicates have. This will be discussed further below.

In fact, in the analysis outlined here, the inclusion of the Aktionsart marker (which would require assuming that [ti] is type $<<t,t>,<t,t>>$) leads to incorrect derivation, as shown in (106) (using as an example the clause [ǹ ti ʼ tsi ʼ Firĩnirĩ], ‘I am/was going to Frignion’)78, which has an eventive predicate):

\[ (105) \quad [ti,<<t,t>,<t,t>>] = [IMPF] \]

78 Or ‘I go to Frignion (regularly)’.
Based on the translation in (106c), the clause being analyzed is predicted to be true only if for each inertial future \( (h) \) of the topic time interval \( t_t \), there is an interval \( j \) of which \( t_t \) (which precedes or is equal to \( t_u \)) is an initial subinterval, and \( j \) is regularly partitioned into cells of a contextually-defined length \( (k) \). Crucially, it is also necessary for the truth of this translation that there is an event of the speaker going to Frignion, and the eventuality time \( (\tau(d)) \) of that event is properly included in \( k \), meaning that one event of the speaker going to Frignion occurs within every partition cell. Assuming that there is more than one partition cell, this means that there must be more than one instance of the speaker going to Frignion, i.e. this translation does not allow for episodic imperfective (progressive) interpretation, which is an undesired result, since it is contrary to the data.

[ti]-marked clauses in Anii are therefore assumed to be of type \( <<\varepsilon, t>,<i, t>> \), and to be composed following the schema given in (107), i.e. to apply to clause radicals with no Aktionsart markers:

\[
(107) \quad \text{Aspect}\langle\varepsilon, t\rangle \quad (\text{Clause radical}<\varepsilon, t>)
\]

Recall from the previous section that clause radicals in Anii are assumed to be of type \( <\varepsilon, t> \). I assume, then, that [ti] is of type \( <<\varepsilon, t>,<i, t>> \) and applies directly to clause radicals, which means that the version of COIN to be used here has to be that for predicates of eventuality. Thus, from this point on, I assume that \( \text{COIN}(P, k, h) = \exists d[P(d) \land \tau(d) \circ k \land \tau(d) \subset h] \).
Given this assumption, the correct derivation for a [tí]-marked clause with an
eventive predicate is as given in (108):

\[(108)\text{ a. } [\text{tí}_\text{stative}] = \\
[\lambda i. \forall h[h \in H_{inr} \rightarrow \exists j[i \subseteq_j j \wedge \forall k[k \in \mathcal{R} \rightarrow \text{COIN} (\lambda i \exists [\text{go.to.Frignion}(e, sp)]], k, h)]] \\
[\lambda i. \forall h[h \in H_{inr} \rightarrow \exists j[i \subseteq_j j \wedge \forall k[k \in \mathcal{R} \rightarrow (\exists d[\text{go.to.Frignion}(d, sp) \wedge \\
\tau(d) \circ k \wedge (\tau(d) \subset h)])] ]
\]

\[(108)\text{ b. } [\text{NONFUT}_\text{stative}] = \\
[\forall h[h \in H_{inr} \rightarrow \exists j[t_i \subseteq_j j \wedge \forall k[k \in \mathcal{R} \rightarrow (\exists d[\text{go.to.Frignion}(d, sp) \wedge \\
\tau(d) \circ k \wedge (\tau(d) \subset h)])] ]
\]

The translation in (108b) is predicted to be true if and only if for each inertia future \(h\)
of the topic time interval \(t_i\) (which precedes or equals the utterance time \(t_o\)), there is an
interval \(j\), of which \(t_i\) is an initial subinterval, and that for every cell \(k\) of the regular
partition of \(j\) there is an eventuality \(d\) of the speaker going to Frignion whose eventuality
time \(\tau(d)\) coincides with \(k\) and is included in \(h\). This translation allows for progressive
interpretation, in the case where \(t_i = j\), as well as habitual interpretation, when \(t_i \subset j\).
Thus, the derivation in (108) can account for the Anii data presented in Section 3.2 above.

The derivation of the translation of a [tí]-marked clause with a stative predicate (in
this case, [n tí dà àfál], ‘I am/was (normally) at home’) is given in (109). Note that this
derivation is basically the same as that in (108)—Aktionsarten has no effect here. This is
consistent with the fact that all [tí]-marked clauses are stative, regardless of the
Aktionsarten of their predicates:

\[(109)\text{ a. } [\text{tí}_\text{stative}] = \\
[\lambda i. \forall h[h \in H_{inr} \rightarrow \exists j[i \subseteq_j j \wedge \forall k[k \in \mathcal{R} \rightarrow \text{COIN} (\lambda i \exists [\text{be.at.home}(s, sp)], k, h)]] ]
[\lambda i. \forall h[h \in H_{inr} \rightarrow \exists j[i \subseteq_j j \wedge \forall k[k \in \mathcal{R} \rightarrow (\exists d[\text{be.at.home}(d, sp) \wedge \\
\tau(d) \circ k \wedge (\tau(d) \subset h)])] ]
\]

\[(109)\text{ c. } [\text{NONFUT}_\text{stative}] = \\
[\forall h[h \in H_{inr} \rightarrow \exists j[t_i \subseteq_j j \wedge \forall k[k \in \mathcal{R} \rightarrow (\exists d[\text{be.at.home}(d, sp) \wedge \\
\tau(d) \circ k \wedge (\tau(d) \subset h)])] ]
\]

(only defined if \(g(t_i) \leq [t_o]\))
The translation in (109c) is predicted to be true only if for each inertia future $h$ of the topic time interval ($t_i$) (which precedes or is equal to the utterance time ($t_u$)), there is an interval ($j$), of which $t_i$ is an initial subinterval, and every cell $k$ of the regular partition of $j$ there is an eventuality $d$ of the speaker having a baboon whose TSit ($\tau(d)$) coincides with $k$ and is included in $h$.

The reader will have noted that the derivation in (109) allows for both episodic and habitual imperfective meaning, contrary to the facts presented in Section 3.2, where it was shown that [ti]-marked clauses with stative predicates in Anii can only have habitual aspectual reference. As was briefly mentioned above, this fact is assumed to be due to blocking caused by the interpretation of unmarked clauses with stative predicates. Recall that unmarked stative clauses were shown to have only episodic imperfective aspectual reference in the analysis in (101), which accounts well for the data from Section 3.1. In Deo's (2009) work, a similar problem arises in accounting for data from languages which mark both the imperfective and the progressive. Her solution, which can also be used here, is to invoke Dowty’s (1979) formulation of a Gricean Blocking Principle. This principle can be used to explain why Anii clauses with stative predicates that are marked with [ti] have, in practice, only habitual interpretation, despite the fact that the imperfective-marking allows for both progressive and habitual reference. The principle (as quoted in Deo 2009: 513) is as follows:

\textbf{(110) A Neo-Gricean conversational principle:} If a language has two (equally simple) types of syntactic structures A and B, such that A is ambiguous between meanings X and Y while B has only meaning A, speakers of the language should reserve structure A for communicating meaning Y (since B would have been available for communicating X unambiguously and would have been chosen if X is what was intended.

In the case of Anii, structure A would be [ti]-marked clauses with stative predicates, which can in principle be both progressive and habitual, and structure B would be unmarked clauses with stative predicates, which are episodic, but not habitual. Thus, these [ti]-marked clauses cannot have episodic imperfective aspectual reference because
that meaning is already conveyed by a different structure (namely unmarked stative clauses).

This section has illustrated that the use of Deo’s (2009) imperfective marker adequately accounts for the meaning of imperfective-marked clauses (with both eventive and stative predicates) in Anii. This is particularly significant because Deo developed her definition of an imperfective marker for languages such as Italian and Hindi, which are both Indo-European languages with robust, overt tense marking, and which have not yet been shown to exhibit strong effects of Aktionsarten. The fact that Deo’s formalization of the imperfective marker can be shown to account for a language that is so different from the languages for which the proposal was developed suggests that said proposal is worth developing further.

3.5 Conclusions Regarding (Im)perfective Aspectual Reference

This chapter has illustrated some basic ways in which Anii expresses perfective and imperfective aspect. Additionally, it has shown that an analysis of unmarked and [ti]-marked clauses is possible without the need to posit covert past or present tense marking by taking into account the effects of Aktionsarten on temporal reference. This section will compare the Anii data and the analysis presented here with accounts of other languages in the literature that have addressed the question of the effects of Aktionsarten on temporal and aspectual interpretation, particularly with reference to the interpretation of unmarked clauses.

The data presented here has illustrated that Anii is a dynamicity-dependent language in that, as in languages such as Ewe and English (as discussed in Bohnemeyer and Swift (2004)), the interpretation of both marked and unmarked clauses is affected by whether the predicates in those clauses are stative or eventive. One possible issue with the claim that Anii is a dynamicity-dependent language is that Bohnemeyer and Swift (2004) tentatively posited that dynamicity-dependent languages should have fully-grammaticalized progressive marking (contrasting with a simpler form expressing habituality), rather than an imperfective marker. This hypothesis was based on the idea
that progressive aspectual reference is incompatible with stative predicates, a commonly held position (cf. Dowty 1979, Bybee 1994). As was shown above, however, Anii has an imperfective marker, not a progressive marker, and imperfective-marked clauses with stative predicates differ in meaning from unmarked stative clauses which have episodic imperfective aspectual reference. The Anii data, then, contradict this proposed universal, given that Anii is a dynamicity-dependent language with an imperfective marker.

When Anii is compared with other African languages, it seems that the Anii pattern of temporal and aspectual reference described in this chapter is not uncommon. Welmers (1973), in discussing the structure of a variety of West African languages, coined the term ‘factative’ to describe constructions that by default have past perfective meaning with eventive clauses and present imperfective meaning with stative clauses. He also pointed out that factative forms are often unmarked, but some languages (e.g. Bambara) have marked factative forms. Factatives are often, as in Anii, contrasted with imperfective forms. In some languages (e.g. Yoruba), Welmers (1973) even claimed that the factative can have expanded interpretations, such as expressing future meaning.

It is clear from the data presented in this chapter that Anii unmarked clauses are factatives according to Welmers’ (1973) definition, though without any of the possible expanded uses. As such, they can be compared to many other factatives that have been described for West African languages. Languages in which unmarked clauses appear to be factatives (as in Anii) include Nawuri, a Kwa language spoken in Ghana (Casali 1995), Tuwuli, a GTM language spoken in Ghana (Harley 2008), Obolo, a Cross River language spoken in the Niger Delta area of Nigeria, Yoruba, a West Benue-Congo language spoken in southwestern Nigeria, Ejagham, an Ekoid Bantu language of Southwest Cameroon, Doyayo, and Ubangian language from Northern Cameroon, Godié, a Kru language of Côte d'Ivoire, Kisi, an Atlantic language spoken in Guinea, Liberia and Sierra Leone (Nurse, Hewson and Rose 2010), as well as Temne, a Southern Atlantic language of Sierra Leone (based on fieldwork conducted by me in Spring 2010)—and likely many more. In addition, other languages of the region, such as Kabiye (Nurse, Hewson and Rose 2010), Işekiri (Omamor 1982), and Foodo (Plunkett 2009) appear to have marked factatives.
Unfortunately, the semantic data provided in the studies mentioned in the previous paragraph is not complete enough for a full comparison with Anii (they are mostly grammar sketches or papers focused on phonology). A possible exception is Harley (2008), which is an overview of the TAM system in Tuwuli, but the data there is presented without contexts, and no negative evidence is presented, so a full comparison with Anii cannot be made, pending further investigation of Tuwuli. For these reasons, it is difficult to know precisely how the TAM semantics of the languages discussed above relate to the analysis proposed here, pending further fieldwork.

There is, however, at least one formal semantic analysis of a West African tense-aspect system known to me, i.e. Cover (2010), which is an analysis of tense, aspect and modality in Badiaranke, an Atlantic language of Senegal. The system described in Cover (2010) appears to be one with an explicitly marked factative form. That is, there is a form that Cover describes as the ‘perfective’, which appears to have very similar interpretation to Anii unmarked clauses. According to Cover (2010), this form has past perfective interpretation with eventive clauses, and present imperfective interpretation with stative clauses. It can also have past interpretation with stative clauses if a past-tense marker is present. This factative form is contrasted with a form that Cover (2010) terms ‘imperfective’. Interestingly, this form, most clearly indicated with a different set of subject pronouns from the perfective forms, can have progressive meaning with both eventive and stative clauses, because the latter are coerced into having inchoative meaning, like some (but not all) imperfective-marked statives in Anii. Cover (2010) also claims that imperfectives in Badiaranke can have both habitual and generic meaning, but only with eventive clauses. An important difference between the Badiaranke ‘imperfective’ forms as described by Cover and the Anii imperfective forms described above is that in Badiaranke, imperfective forms can have futurate or epistemic meaning, which has not been found to be true of Anii imperfectives.

It seems, then, that Cover (2010) was faced with the problem of formally analyzing a factative form, as I have been. However, Cover’s analysis is different from mine, partially because the Badiaranke perfective appears to be an overt form (marked with the use of a certain subject-marker set). Because of this overt marking, Cover (2010) had to
propose a meaning for the perfective (as well as for imperfective), a step which is not necessary for the analysis of Anii. An interesting direction for future research would be to explore whether the approach in this dissertation (i.e. positing that Aktionsarten can be represented as a kind of aspectual marker) would work in Badiaranke, or any language which has an overtly marked factative form.

This chapter has illustrated the forms of perfective and imperfective clauses in Anii, and proposed an analysis of those clauses that takes into account the effects of Aktionsarten. The data and analysis presented here adds to the understanding of factative constructions, which are extremely common in West African languages, and proposes an analysis which may be able to be extended to factative forms in languages other than Anii. It is hoped that this work will help provide a foundation on which a consensus regarding the analysis of factative forms, as well as other effects of Aktionsarten in dynamicity-dependent languages, can be built.
Chapter 4
Beyond Perfective and Imperfective

This chapter builds on the foundation of Chapter 3 to present and analyze a wider range of TAM markers in Anii. This will provide a more complete picture of the kinds of TAM markers that are used to express temporal and aspectual reference in Anii. The first section of this chapter, Section 4.1 discusses the marker [ʧɛɛ], which is argued to be a perfect marker, illustrating the only overtly marked aspectual category in Anii that has not yet been presented. At the end of that section, a formal analysis of the perfect is incorporated into the analysis of perfective and imperfective clauses that was presented in Chapter 3. Section 4.2 provides and analyzes data regarding the marker [bʊŋa]. This section argues that clauses marked with [bʊŋa] have an ET that far precedes the utterance time, but that the presence of [bʊŋa] does not affect the TT of an utterance. This means that [bʊŋa] is not a tense marker—I claim instead that [bʊŋa] should be analyzed as a Temporal Remoteness Marker (cf. Cable 2013). This section also includes a formal analysis of [bʊŋa]-marked clauses, and accounts for clauses which are marked with [bʊŋa] and also contain other markers.

The final sections of this chapter will provide data on several markers whose meanings have not yet been fully analyzed, but about which interesting generalizations can still be made. In these sections, I present illustrative examples, and describe empirical generalizations, but do not provide a formal analysis. Section 4.3 presents data regarding the uses of the marker [tɪ] (note the high tone in the underlying form, this is not the same as the imperfective marker [tɪ]). This marker can be used with either past or future temporal reference, and occurs in clauses where the eventuality in question occurred (or will occur) as the culmination of a series of events or discussions. Another marker that occurs often in Anii, particularly in combination with the perfect marker
[ʧèé], is [jè], which seems to indicate a speaker’s determination that an eventuality will occur, or insistence that it has occurred. This marker will be presented in Section 4.4.

The marker [nà], as mentioned in Chapter 3, is an imperfective marker whose temporal and aspectual semantics are very similar (if not identical) to the imperfective marker [tɩ]. The two imperfective markers, however, do occur in complementary distribution, with [nà] occurring in certain semantically or syntactically restricted positions, including in clauses with certain types of focus, and in negated clauses. This marker will be discussed because it is quite common, and becomes important in the tonal analysis, but a full analysis of the distribution of [tɩ] and [nà] is beyond the scope of this work, and will be left to future research. The data presented here, however, will give the reader enough of an understanding of the uses of [nà] to allow her to follow other sections of this dissertation. The final section of this chapter, Section 4.6, will summarize and conclude.

4.1 The Perfect Marker [ʧèé]

Perfect aspectual reference in Klein’s (1994) framework occurs in situations where the topic time of a clause follows the situation time. For example, in English, the bolded clause in (1) has perfect aspectual reference (and past temporal reference). Recall from Chapter 2 that in English, the perfect is conveyed by the verb ‘have’ followed by a participle:

(1) Situation: A friend asks me if my roommate was home at 10 AM this morning
No, she was not home, she had left for work.

In this context, the question the friend asks sets the topic time as 10 AM this morning, and at that time, the act of leaving for work had already occurred. That is, the eventuality time of the speaker’s roommate leaving for work precedes the topic time. In this example, both the eventuality time and the topic also precede the utterance time, so the English clause is also marked for past tense. As will be seen below, the Anii perfect
marker, [ʧèé], is compatible with past, present and future temporal reference, and does not constrain temporal reference.

Klein’s analysis of the perfect can account for many clauses in Anii, as will be shown below. Recall from Chapter 2, however, that some perfect clauses have continuative interpretations (cf. Dowty 1979, Klein 1992, Kiparsky 2002, Portner 2003), such that the eventuality time is still ongoing at the topic time, rather than preceding it, as in (2):

(2) Situation: I am telling a friend the story of how I visited my grandmother when I was a child and she was an excellent host:
   She really knew the city because she had lived there for twenty years.

In this case, the eventuality time of the speaker’s grandmother living in the city began before the topic time, but still holds at the topic time, as well. As mentioned in Chapter 2, continuative perfect readings are generally available for stative clauses, but not eventive ones. Given that continuative perfects cannot be accounted for by Klein’s (1994) analysis of the perfect, a more useful analysis of the perfect is Dowty’s (1979) ‘Extended Now’ theory, which takes continuative readings into account. This will be discussed further in section 4.1.3.

Section 4.1.1 provides data on the uses of [ʧèé] in telic and atelic Anii clauses with eventive predicates, Section 4.1.2 presents [ʧèé] in clauses with stative predicates, and section 4.1.3 illustrates clauses marked with both [ʧèé] and an imperfective marker. Section 4.1.4 provides a formal analysis of [ʧèé], given the data provided in the other sections. This analysis builds on the analysis given for perfective and imperfective clauses in the previous chapter. Finally, Section 4.1.5 provides a brief summary and discussion of the behavior of [ʧèé].

4.1.1 [ʧèé] in Clauses with Eventive Predicates

Clauses with eventive predicates marked with [ʧèé] have the interpretation that the eventuality time of such a clause precedes the topic time. This is the case with both
telic and atelic eventive predicates, with past, present and future temporal reference, as will be illustrated in this section. Example (3) illustrates a \[ʧèé\]-marked clause (bolded) with a telic eventive predicate and past temporal reference:

(3) Situation: You arrived home from the market at 5 PM. Salimatou had called you at 4 PM while you were in the market (but your cell phone was at home). Later in the evening, at 6 PM, your friend Mouniratou asks you whether you had heard from Salimatou yet. You answer:

\[
\text{ń́ kpá mà, à-dé ʧèé jìdá}
\]

1.SG.SUBJ.GRP1 arrive\textsuperscript{79} SUB 3.SG-DEM.FAR PERF call

‘When I arrived (home), she had called.’

Here, the topic time of the \[ʧèé\]-marked clause is after the speaker’s arrival. The eventuality time of that clause is the time of calling, which occurred before the arrival. Thus, the eventuality time of the clause in question precedes the topic time.

Another \[ʧèé\]-marked clause with a telic eventive predicate that has past temporal reference and perfect aspectual reference is given in (4):

(4) Situation: Aminou is telling Issifou a story about the time that Aminou built a house with his uncle last year. Aminou explains to Issifou how he (Aminou) knew how to build that house last year:

\[
\text{ń ʧèé 1.tsó ɲ-kú}
\]

1.SG.SUBJ.GRP1 PERF build CL.F-room

‘I had (already) built a house.’

[ʧèé] is also compatible with clauses with atelic eventive predicates that have past temporal reference and perfect aspectual reference, as illustrated in (5) and (6) below.

The relevant clause in (6) is bolded:

(5) Situation: Last week, my friend had guests in her house. I am telling my mother about it, and she (knowing that my friend is a last-minute kind of person) asks if my friend was still cleaning when her guests arrived. I say:

\[
\text{ààí, ò ʧèé përmpëŋè}
\]

no 3.SG.SUBJ.GRP1 PERF clean

‘No, she had cleaned.’

\textsuperscript{79} This verb can also mean something like ‘come home’.

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(6) Situation: Moustapha had a long career as a seller of things. First, he sold cloth for awhile, then he moved on to selling motos (though he does not sell them anymore). He is telling a story about the time when he sold motos, and to introduce that story, he explains his background a little:

\[
\text{tɔkùkù k ɔ-jàlò k ì kò sòm ná ámò ñá,
 moto \text{ POSS CL.E-selling NEG AGR.CL.E again be.difficult with me NEG}
\text{àdówàà ñ ʧée jàlá à-kùrò mà láj}
\]

because 1.SG.SUBJ.GRP1 PERF sell CL.T-cloth SUB on

‘Selling motos was not hard for me because I had sold cloth (earlier).’

As the examples above have illustrated, the marker [ʧée] can be used in clauses with both telic and atelic eventive predicates that have past temporal reference and perfect aspectual reference.

The use of [ʧée] is also compatible with present temporal reference and perfect aspectual reference. This is illustrated in (7) with a clause that has a telic eventive predicate:

(7) Situation: Abou is looking for his puisette\(^{80}\), he has looked everywhere and cannot find it. His friend suggests he should look for it in the well. Abou answers:

\[
\text{ʧée ɗìm lɔkɔ ñí}
\]

1.SG.SUBJ.GRP1 PERF jump CL.B.well in

‘I have (already) jumped into the well.’

Here, the topic time is the same as the utterance time, and the eventuality time of the act of jumping into the well occurred previous to that topic time.

Another example of a present perfect clause with a telic eventive predicate is the following:

(8) Situation: Two friends are up in Pendjari, the Beninese game park, and are looking at an elephant. One asks the other if he has ever seen an elephant before the one they are looking at right now. His friend answers:

\[
\text{ʧée ñà-bùrò àjó}
\]

1.SG.SUBJ.GRP1 PERF see CL.Ǝ-elephant once

‘I have seen an elephant before.’

\(^{80}\) A puisette is a bucket-like implement used for drawing water from a well. In Anii-land, they are usually made of rubber or plastic.
In clauses with atelic eventive predicates, as with telic ones, [ʧèé] is compatible with present temporal reference and perfect aspectual reference, as shown by the following examples:

(9) Situation: I am sweeping my courtyard and doing a really, really bad job of it. Rahinatou asks me if I have ever swept before this moment. I answer:

\[ 1.\text{SG}.\text{SUBJ}.\text{GRP}1 \text{ PERF \ sweep once} \]
\[ 'I have swept before.' \]

(10) Situation: My friend Rafiatou is cleaning her house. I am at her house while she is cleaning, on the phone with another friend. That friend asks me what Rafiatou is doing, and I tell him. He is surprised that she is cleaning again because, as he says:

\[ 3.\text{SG}.\text{SUBJ}.\text{GRP}1 \text{ PERF \ clean \ yesterday} \]
\[ 'She has (already) cleaned yesterday.' \]

It has been shown here that [ʧèé]-marked clauses with eventive predicates (both telic and atelic) can have perfect aspectual reference and present temporal reference.

Anii eventive clauses marked with [ʧèé] can also have future temporal reference and perfect aspectual reference—but only if the clause is also in the ‘future’ construction. An example is given in (11), where the exemplifying clause has a telic eventive predicate:

(11) Situation: I usually go to bed at 10:30 PM. Tonight, however, I plan to go to bed much earlier (at 8:00 PM) because I have to be up very early in the morning. My friend, who knows when I usually go to bed, asks me if he can come over to study at 9:00 PM. I say:

\[ \text{CL.Î-hours nine} \ 1.\text{SG}.\text{SUBJ}.\text{GRP}1 \text{ \ FUT} \ 1.\text{SG}.\text{GRP2}.\text{SUBJ} \text{ PERF \ fall.sleep} \]
\[ 'At 9:00, I will have fallen asleep.' \]

In this example, since the speaker will already be asleep by the topic time (9:00), the eventuality time of the speaker falling asleep precedes the topic time.

Another example of a clause with a telic eventive predicate and future time reference that is marked with [ʧèé] is given in (12):
(12) Situation: Hakimou is talking about his future plans for marriage, and since he wants to confirm that he is a responsible young man, he says:

\[
\begin{align*}
\text{ǹ tì mò } & \text{ʧéé tsó } \text{ná à} \\
\text{1.SG.SUBJ.GRP} & \text{1.SG.GRP} \text{ PERF build CL.F-room} \text{ INORD} \\
\text{jé kोh hiįjé} & \\
\text{TAM} & \text{attach CL.B.marriage}
\end{align*}
\]

‘I will have built a house before I get married.’

Clauses with atelic predicates that are marked with [ʧéé] can also have perfect aspectual reference and future temporal reference, as illustrated by examples (13) and (14):

(13) Situation: There is dust on the floor of my office, and my boss asks me if it will be clean at a scheduled 4:00 meeting. I say:

\[
\begin{align*}
\text{ǹ tì } & \text{ʧéé jěř bò-kòkòhò bò-nàn} \\
\text{1.SG.SUBJ.GRP} & \text{1.SG.GRP PERF sweep CL.Ʊ-hours} \text{ AGR.CL.Ʊ-four} \\
\end{align*}
\]

‘I will have swept at 4:00.’

(14) Situation: Nouhoum’s job is to paste up the Anii magazine GoGo. You are talking to him and making plans to see him tomorrow evening. You are wondering if he will be still pasting at 8 PM, so you ask him. He is sure he will be finished for the day by 7 PM, so he says:

\[
\begin{align*}
\text{ǹ tì mò } & \text{ʧéé pàrá} \\
\text{1.SG.SUBJ.GRP} & \text{1.SG.GRP PERF glue} \\
\end{align*}
\]

‘I will have pasted.’

The examples given in this section thus far illustrate that [ʧéé] in clauses with eventive predicates is compatible with perfect aspectual reference, and past, present and future temporal reference. Thus, these examples have illustrated that [ʧéé] does not constrain temporal reference. It remains to be demonstrated that the use of [ʧéé] is not compatible with other types of aspectual reference in eventive clauses. Example (15) shows that telic clauses marked with [ʧéé] cannot have past (15a) or future (15b) perfective aspectual reference. Unmarked clauses must be used in these situations, as (15) demonstrates:

81 The meaning of this marker is discussed in Section 4.4 below.
(15) a. Situation: You are telling your friend about a fall off of your moto (which happened yesterday). You are looking at your injuries, and the friend asks when the fall happened. You answer:

#ń ŋēé fidá gàláí
1.SG.SUBJ.GRP1 PERF fall yesterday

Intended Interpretation: ‘I fell yesterday.’

Acceptable response:

ń ŋēé fidá gàláí
1.SG.SUBJ.GRP1 fall yesterday

‘I fell yesterday.’

b. Situation: You have lost your puisette in your well, and you can’t get it out with hooks, you are going to have to go in and get it. Your friend asks when you plan on doing that, and you say:

#ń tä! má ŋēé dzám lókò ní gàtsáoŋ
1.SG.SUBJ.GRP1 FUT 1.SG.GRP2.SUBJ PERF jump CL.B.well in tomorrow

Intended Interpretation: ‘I will jump in the well tomorrow.’

Acceptable response:

ń tä! má dzám lókò ní gàtsáoŋ
1.SG.SUBJ.GRP1 FUT 1.SG.GRP2.SUBJ jump CL.B.well in tomorrow

‘I will jump in the well tomorrow.’

Similarly, [ŋēé]-marked clauses with atelic eventive predicates cannot have past or future perfective interpretation, and unmarked clauses are used instead:

(16) a. Situation: The speaker is talking about how her courtyard looks pretty good. Her friend asks the speaker when she swept. She says:

#ń ŋēé jëř gàláí
1.SG.SUBJ.GRP1 PERF sweep yesterday

Intended Interpretation: ‘I swept yesterday.’

Acceptable response:

ń jëř gàláí
1.SG.SUBJ.GRP1 sweep yesterday

‘I swept yesterday.’

b. Situation: Looking at her courtyard, the speaker is talking about how it looks bad and she needs to sweep. Her friend asks when she plans on sweeping, so she says:

#ń tä! má ŋēé jëř gàtsáoŋ
1.SG.SUBJ.GRP1 FUT 1.SG.GRP2.SUBJ PERF sweep tomorrow

Intended Interpretation: ‘I will sweep tomorrow.’

Acceptable response:

ń tä! má jëř gàtsáoŋ
1.SG.SUBJ.GRP1 FUT 1.SG.GRP2.SUBJ sweep tomorrow

‘I will sweep tomorrow.’
In addition to not being compatible with perfective aspectual reference, clauses with eventive predicates that are marked with [ʧèé] (and no other aspect marker) are not acceptable with imperfective aspectual reference, whether past, present or future. This is illustrated here with both habitual and progressive aspectual reference. An imperfective marker must be used in these situations. With past temporal reference, both [ʧèé] and the imperfective marker [tɩ] can be used, while clauses with present or future imperfective interpretation cannot be marked with [ʧèé]. Example (17) contains clauses with telic eventive predicates and habitual aspectual reference that have past (17a), present (17b) and future (17c) temporal reference:

(17) a. Situation: My friend sees me at home on market day, and is surprised I’m not in the market. I explain that I do not go to the market regularly anymore, but:

Acceptable response:

b. Situation: I am talking with my boss about my weekly schedule so I can figure out when to come in to work. Part of that schedule is the weekly market:

Acceptable response:
c. Situation: I am about to start selling in the market. I mention this while talking about my schedule with my boss:

\[
\begin{align*}
\# & \quad \text{ǹ ti'má jëè tsì gò-jà áláárba} \\
1.\text{SG.SUBJ.GRP1 FUT} & 1.\text{SG_GRP2.SUBJ PERF go} \quad \text{CL.È-market CL.B.Wednesday} \\
& \quad \text{báà à-páŋá} \\
& \quad \text{each AGR.CL.B-every} \\
\end{align*}
\]

Intended Interpretation: ‘I will be going to the market every Wednesday.’

Acceptable response:

\[
\begin{align*}
\text{ǹ ti'má náà tsì gò-jà áláárba} \\
1.\text{SG.SUBJ.GRP1 FUT} & 1.\text{SG_GRP2.SUBJ IMPF go} \quad \text{CL.È-market CL.B.Wednesday} \\
& \quad \text{báà à-páŋá} \\
& \quad \text{each AGR.CL.B-every} \\
\end{align*}
\]

‘I will be going to the market every Wednesday.’

Clauses with atelic eventive predicates that are marked with [ʧèé] and no other aspectual markers also cannot have habitual interpretation, as shown in (18):

(18) a. Situation: I am talking with a friend about my house being dirty. I want her to know that it was not always this dirty:

\[
\begin{align*}
\# & \quad \text{jëè pëmpëñè áláárba báà à-páŋá} \\
1.\text{SG.SUBJ.GRP1 PERF clean} & \quad \text{CL.B.Wednesday each AGR.CL.B-every} \\
\end{align*}
\]

Intended Interpretation: ‘I used to clean every Wednesday.’

Acceptable response:

\[
\begin{align*}
\text{jëè ti' pëmpëñè áláárba báà à-páŋá} \\
1.\text{SG.SUBJ.GRP1 IMPF clean} & \quad \text{CL.B.Wednesday each AGR.CL.B-every} \\
\end{align*}
\]

‘I used to clean every Wednesday.’

b. Situation: I am talking with my boss about my weekly schedule so I can figure out when to come in to work. Part of that schedule is about cleaning. I say:

\[
\begin{align*}
\# & \quad \text{jëè pëmpëñè áláárba báà à-páŋá} \\
1.\text{SG.SUBJ.GRP1 PERF clean} & \quad \text{CL.B.Wednesday each AGR.CL.B-every} \\
\end{align*}
\]

Intended Interpretation: ‘I clean every Wednesday.’

Acceptable response:

\[
\begin{align*}
\text{tí pëmpëñè áláárba báà à-páŋá} \\
1.\text{SG.SUBJ.GRP1 IMPF clean} & \quad \text{CL.B.Wednesday each AGR.CL.B-every} \\
\end{align*}
\]

‘I clean every Wednesday.’

---

82 The question of why the imperfective marker [nà] surfaces with a long vowel only in the future is discussed in Section 4.5.
c. Situation: Talking about my future schedule with my boss, I mention that I’m going to start cleaning regularly for my sister. I say:

#ń ti’ má ŋẹ̀ pèmpè̀ŋè àlàárbà
1.SG.SUBJ.GRP1 FUT 1.SG.GRP2.SUBJ PERF clean CL.B.Wednesday
báà à-páŋá
each AGR.CL.B-every

Intended Interpretation: ‘I will be cleaning every Wednesday.’

Acceptable response:

ń ti’ má náà pèmpè̀ŋè àlàárbà
1.SG.SUBJ.GRP1 FUT 1.SG.GRP2.SUBJ IMPF clean CL.B.Wednesday
báà à-páŋá
each AGR.CL.B-every
‘I will be cleaning every Wednesday.’

Clauses marked only with [ʧèé] are not compatible with progressive aspectual reference and past, present or future temporal reference. This is illustrated in (19) for clauses with telic eventive predicates, and in (20) for atelic ones:

(19) a. Situation: At 3 PM yesterday, your friend came to your house looking for you. She couldn’t find you. Today, your friend asks you where you were when she was at your house:

#ń ʧèé ! tsí gù-jà  gàláì  bò-kòŋkòŋò bè-riù
1.SG.SUBJ.GRP1 PERF go CL.Ɛ-market yesterday CL.Ų-hours AGR.CL.Ų-three

Intended Interpretation: ‘I was going to the market yesterday at 3:00.’

Acceptable response:

ń ti’ tsí gù-jà  gàláì  bò-kòŋkòŋò bè-riù
1.SG.SUBJ.GRP1 IMPF go CL.Ɛ-market yesterday CL.Ų-hours AGR.CL.Ų-three
‘I was going to the market yesterday at 3:00.’

b. Situation: Your friend calls you, and asks what you’re doing at the moment. You tell her you are in the process of going to the market:

#ń ʧèé ! tsí gù-jà  nómò
1.SG.SUBJ.GRP1 PERF go CL.Ɛ-market now

Intended Interpretation: ‘I am going to the market right now.’

Acceptable response:

ń ti’ tsí gù-jà  nómò
1.SG.SUBJ.GRP1 IMPF go CL.Ɛ-market now
‘I am going to the market right now.’

83 The /be-/ noun class agreement marker seems to be a common variant of the class Ǚ with certain words. Some speakers do say /bù-riù/ instead of /bè-riù/, but the consultants who gave me this example prefer the latter.
Situation: You and your friend are trying to find a time to meet up tomorrow. Your friend suggests 3 PM, but you will be on your way to the market at that time, so you say:

\[ #\text{ń} \text{ʧèé} \text{nts} \text{ɨ} \text{ɩ} \text{gʊ} \text{ɩ} \text{já} \text{gatsôj bû-kôŋkôŋ bê-riù} \]

1.SG.SUBJ1.PERF go CL.É-market tomorrow CL.Ú.hours CL.Ú.three

Intended Interpretation: ‘I will be going to the market tomorrow at 3:00.’

OR

\[ #\text{ń} \text{tî} \text{mà} \text{ʧèé} \text{tsi gô-já} \text{gatsôj} \]

1.SG.SUBJ1.FUT 1.SG.SUBJ2.PERF go CL.É-market tomorrow bû-kôŋkôŋ bê-riù CL.Ú-hours CL.Ú-three

Intended Interpretation: ‘I will be going to the market tomorrow at 3:00.’

Acceptable response:

\[ ñ \text{tî} \text{mà} \text{náà tsì gô-jâ gatsôj} \]

1.SG.SUBJ1.FUT 1.SG.SUBJ2.IMPF go CL.É-market tomorrow bû-kôŋkôŋ bê-riù CL.Ú-hours CL.Ú-three

‘I will be going to the market tomorrow at 3:00.’

(20) a. Situation: At 3 PM yesterday, your friend came to your house looking for you. She couldn’t find you. Today, your friend asks you where you were when she was at your house:

\[ #\text{galâi} \text{bû-kôŋkôŋ bê-riù ná, ñ ßëé pëmpênë} \]

yesterday CL.Ú-hours CL.Ú-three FOC 1.SG.SUBJ1.PERF clean biróò ní CL.B.office in

Intended Interpretation: ‘I was cleaning at the office at 3:00 yesterday.’

Acceptable response:

\[ ñgalâi bû-kôŋkôŋ bê-riù ná, ñ tî pëmpênë \]

eyesterday CL.Ú-hours CL.Ú-three FOC 1.SG.SUBJ1.IMPF clean biróò ní CL.B.office in

‘I was cleaning at the office at 3:00 yesterday.’

b. Situation: I am cleaning right now at this very moment, someone calls and asks me what I’m up to. I say:

\[ ñ ßëé pëmpênë biróò ní \]

1.SG.SUBJ1.PERF clean CL.B.office in

Intended Interpretation: ‘I am cleaning at the office.’

Acceptable response:

\[ ñ tî pëmpênë biróò ní \]

1.SG.SUBJ1.IMPF clean CL.B.office in

‘I am cleaning at the office.’
c. Situation: You and your friend are trying to find a time to meet up tomorrow. Your friend suggests 3 PM, but you will be busy at that time. You say:

\[
\text{#gàtsǝ} \quad \text{bù-kònkgà} \text{ná, ñ} \quad \text{țèé pèmpèn} \\
\text{tomorrow CL.Ø-hours CL.Ø-three FOC 1.SG.SUBJ.GRP1 PERF clean} \\
\text{CL.B.biróò ní office in} \\
\text{Intended Interpretation: ‘I will be cleaning at the office at 3:00 tomorrow.’}
\]

OR

\[
\text{#gàtsǝ} \quad \text{bù-kònkgà} \text{ná, ñ} \quad \text{tı́ má} \\
\text{tomorrow CL.Ø-hours CL.Ø-three FOC 1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2} \\
\text{țèé pèmpèn} \quad \text{CL.B.biróò ní PERF clean office in} \\
\text{Intended Interpretation: ‘I will be cleaning at the office at 3:00 tomorrow.’}
\]

Acceptable response:

\[
\text{gàtsǝ} \quad \text{bù-kònkgà} \text{ná, ñ} \quad \text{tı́ má} \\
\text{tomorrow CL.Ø-hours CL.Ø-three FOC 1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2} \\
\text{tı́ pémpèn} \quad \text{CL.B.biróò ní IMPF clean office in} \\
‘I will be cleaning at the office at 3:00 tomorrow.’
\]

The data presented thus far indicates that [țèé] is a perfect marker, i.e. it entails perfect aspectual reference, and does not constrain temporal reference. One more point that should be made here is that clauses with eventive predicates marked only with [țèé] cannot have continuative readings. This is illustrated in (21), which can be compared to (10) above. The clause in (21a), marked only with [țèé] is not acceptable here because the act of cleaning is still happening at the topic time. The acceptable utterance in this case is marked with both [țèé] and an imperfective marker, as shown in (21b):

(21) Situation: My friend Rafiatou has been cleaning her house all morning. I am at her house while she is cleaning, on the phone with another friend. That friend asks me what Rafiatou has been up to this morning, and I tell him:

a. \[
\text{#ò} \quad \text{țèé pèmpèn} \\
\text{3.SG.SUBJ.GRP1 PERF clean} \\
\text{Intended interpretation ‘She has been cleaning.’}
\]

b. \[
\text{ò} \quad \text{țèé tì pémpèn} \\
\text{3.SG.SUBJ.GRP1 PERF IMPF clean} \\
‘She has been cleaning.’
\]
More discussion on clauses marked with both [ʧèé] and [ti] is in section 4.1.3. Before that, however, the next section discusses the use of [ʧèé] in clauses with stative predicates.

### 4.1.2 [ʧèé] in Clauses with Stative Predicates

In the previous section, it was shown that in clauses with eventive predicates marked (only) with [ʧèé], the eventuality time of the clause precedes the topic time. The data given below will motivate the need for an analysis of [ʧèé] that takes into account Aktionsarten and can explain the restrictions on the continuative reading of the perfect. It will be illustrated that clauses with stative predicates marked only with [ʧèé], unlike their eventive counterparts, as will be illustrated, can have both continuative and non-continuative readings. Additionally, clauses marked with both [ʧèé] and an imperfective marker will be discussed.

The example in (22) illustrates that clauses with stative predicates marked with [ʧèé] are compatible with past temporal reference and perfect aspectual reference, and can have non-continuative interpretations:

(22) Situation: I am telling a story about something that happened to me last month when I went to the well and spilled water all over myself. Later, my friend Rafia came over. The friend I am telling the story to asks if I was wet when Rafia came. I say:

...)  

In this case, the speaker was no longer wet when Rafia came (as indicated by the use of /ààú/, ‘no’, in response to the question given in the context.

[ʧèé]-marked clauses with stative predicates are also compatible with past temporal reference and perfect aspectual reference in cases where the eventuality time of the state continues to hold at the topic time, as shown in (23):
(23) Situation: Moutawakilou started out his life as a poor person, but then became rich, and is still rich. He is telling a story about his life after he became rich to his children. The events of the story took place many years ago. He starts the story saying:

tám ǹ-dé ̀ ní, àmò, ̀ gójé wòdá
CL.B.time AGR.CL.B-DEM.FAR in 1.SG.FOC 1.SG.GRP1.SUBJ PERF have

‘At that time, me, I already had money.’

In this utterance, the state of having money already held before the topic time (i.e. the time in which the story was set, indicated by [tám ǹdé ̀ ní], ‘at that time’), and continued to hold at the topic time and beyond—this clause has a continuative perfect reading.

With present temporal reference, [ʧèé]-marked clauses with stative predicates are also acceptable whether the eventuality time precedes the topic time, or continues at the topic time. Examples (24) and (25) are both present perfect examples, with (24) having a non-continuative reading and (25) having a continuative reading:

(24) Situation: While driving, you pass a house where a friend used to live, but where the person doesn't live anymore. You mention this to a fellow traveller:

dòò àmù-sorò ò ʧèé ò dá àtijà,
earlier 1.SG.POSS.CL.A-friend AGR.CL.A PERF be.there here

ɲómò kà kòs ò dá àtijà ná
now NEG.3.SG.GRP2 again be.there here NEG

‘Awhile ago, my friend was [lived] here, but now he isn't here anymore.’

(25) Situation: You have an acquaintance who doesn't know where you live, though you have lived there since before you knew him. One day he comes to your house to see someone else and sees you there. He is surprised that you are there, so you say:

ǹ ʧèé ò dá àtijà ná gí jè ǹò
1.SG.SUBJ.GRP1 PERF be.there here and 1.PL.SUBJ.GRP1 TAM see

‘I have been [lived] here since before we met.’

[ʧèé]-marked clauses with stative predicates can also be used if the speaker does not know whether the state still holds at the utterance time or not, as shown in (26):
(26) Situation: You are looking for someplace to watch a soccer game. Two weeks ago, a friend had a TV, but you don't know if she still has it, or if she has sold it by now:

àmusörò ǝ ʧêé kà wòdà téélëè
1.SG.POSS.CL.A.friend AGR.CL.A PERF FOC have TV

My friend had a TV (and may or may not still have it)

With future temporal reference, it appears that both non-continuative (as in (27)) and continuative (as in (28)) readings are possible:

(27) Situation: Even though I have a job, I make it a point to be at home for an hour or so every day to check on my elderly mother. My neighbor wants to stop by and see me tomorrow when I am home, and suggests 3:00. By that time, I will no longer be home. I say:

ǹ ti₁ mó ʧêé dá áfál gâtsiŋ
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 PERF be.there at.home tomorrow
bʊ-kàŋkɔŋɔ bù-riu bù jé 1 kò
CL.Œ-hour AGR.CL.Œ-three AGR.CL.Œ TAM hit
‘I will have (already) been home tomorrow before 3:00.’

(28) Situation: You owe your friend Nouhoum a lot of money. He is very worried about this because he has to pay his school fees next week and doesn’t have enough money. You can’t pay him now, but are expecting to receive some money from your brother in Europe tomorrow, so you will have enough to pay him well before the fee deadline. You assure him:

tám n-dé, ǹ ti₁ mó ʧêé wòdá
CL.B.time AGR.CL.B-DEM.FAR 1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 PERF have gi-tâni
CL.D-money
‘I will have (already) had money.’

These examples show that in [ʧêé]-marked clauses with stative predicates, the eventuality time can precede or include the topic time. The common generalization seems to be that the eventuality time must begin before the topic time, but not necessarily that it ends before the topic time.

84 The examples in (27) and (28) appear to be questionable for some consultants. In these cases, a translation often offered for [ʧêé] is ‘quickly’, or ‘early’. It is difficult to know if this type of translation is due to an ongoing language change, or to translation difficulties. More research is needed into the used of [ʧêé] with stative predicates in future clauses.
One further point to be made here is that some speakers have exhibited a preference for non-continuative meanings of clauses with stative predicates to be marked with [bɔŋà] rather than [ʧɛê]. [bɔŋà] is a far-past marker whose meaning is discussed in the next section. This preference for [bɔŋà] over [ʧɛê] may be related to the fact that clauses marked with [bɔŋà] cannot have continuative meaning (with any predicate), while [ʧɛê]-marked clauses can have both types of meaning with stative predicates. In the situation in example (29), both [bɔŋà]-marked and [ʧɛê]-marked clauses are acceptable, since the state described in the clause no longer holds, but speakers prefer (b):

(29) Situation: Hakimou and Moustapha are talking about living in a river valley. They are at Moustapha’s house, which is down near the river, and Moustapha is complaining about how cold it gets at night during Harmattan (the coldest season of the year). Hakimou does not currently live by the river, though he did five years ago. Hakimou says that living by the river is not that bad. Moustapha asks how Hakimou knows that, so Hakimou says:

a. ń ʧɛê¹ dá
   1.SG.SUBJ.GRP1 PERF be.there
   ‘I have lived there.’

b. ń bɔŋà dá
   1.SG.SUBJ.GRP1 PST be.there
   ‘I lived there long ago.’

If the state of living by the river still holds, only the [ʧɛê]-marked clause is acceptable, as shown in (30):

(30) Situation: Hakimou and Moustapha are talking about living in a river valley. They are at Moustapha’s house, which is down near the river, and Moustapha is complaining about how cold it gets at night during Harmattan (the coldest season of the year). Hakimou also lives by the river, though Moustapha does not know that. Hakimou says that living by the river is not that bad. Moustapha asks how Hakimou knows that, so Hakimou says:

a. ń ʧɛê¹ dá
   1.SG.SUBJ.GRP1 PERF be.there
   ‘I have lived there.’

b. #ń bɔŋà dá
   1.SG.SUBJ.GRP1 PST be.there
   Intended interpretation: ‘I have lived there.’
These examples illustrate that in certain cases, the far past marker [bọnà] and the perfect marker [ʧèé] can both be used in the same situation, but there are also other cases where their uses do not overlap. The preference for [bọnà] in cases like the situation in (28), then, could be attributed to a principle referred to by the Gricean Blocking Principle invoked in Chapter 3 (cf. Dowty 1979, Deo 2009). Recall that this principle states that if there is a linguistic form A that has two possible meanings, and another linguistic form B that has only one of those two meanings, speakers prefer interpretations of A in which A has the meaning not also expressed by B. In this case, since [bọnà] can be used in examples such as (29), [bọnà]-marked clauses are preferred in those cases, and [ʧèé]-marked clauses are preferred in cases such as that in (30), where [bọnà] is not acceptable.

The evidence presented thus far has shown that in clauses with stative predicates, [ʧèé] can have either continuative or non-continuative perfect interpretation. As with the clauses with eventive predicates discussed above, [ʧèé]-marked clauses with stative predicates are compatible with past, present and future temporal reference. Recall from previous chapters that stativity is incompatible with perfective aspectual reference, so I will not discuss the possibility of perfective aspectual reference in clauses with stative predicates any further here. I now present evidence that [ʧèé]-marked clauses with stative predicates when not marked with any other marker, like their counterparts with eventive predicates, are not felicitous with imperfective aspectual reference.

The example in (31) illustrates that a clause with a stative predicate and [ʧèé] as the only aspect marker cannot have episodic imperfective aspectual reference. An unmarked clause must be used in (31):

(31) Situation: Yesterday at 3:00 PM, there was a huge accident right outside my house. My friend asks if I was at home at that time. I answer:

#ń ʧèé ! dá ʧafál
1.SG.SUBJ,GRP1 PERF be.there at.home

Intended Interpretation: ‘I was at home.’

Acceptable response:

ń  dá ʧafál
1.SG.SUBJ,GRP1 be.there at.home
‘I was at home.’
[ʧèé]-marked clauses with stative predicates are also not acceptable with episodic imperfective aspectual reference and present or future temporal reference. Again, unmarked clauses must be used:

(32) Situation: My friend calls to ask me what I am doing right now. I answer:

\[
\begin{align*}
\#n & \quad \text{ʧèé}^1 \text{ dá} \quad \text{åfål} \\
1.\text{SG.SUBJ.GRP1 PERF be.there at.home} \\
\text{Intended Interpretation: ‘I am at home.’}
\end{align*}
\]

Acceptable response:

\[
\begin{align*}
\! & \quad \text{ń} \quad \text{dá} \quad \text{åfål} \\
1.\text{SG.SUBJ.GRP1 be.there at.home} \\
\text{‘I am at home.’}
\end{align*}
\]

(33) Situation: My friend asks what I will be doing tomorrow at 3:00 PM. I answer:

\[
\begin{align*}
\#n & \quad \text{ʧèé}^1 \text{ dá} \quad \text{åfål} \\
1.\text{SG.SUBJ.GRP1 PERF be.there at.home} \\
\text{OR} \quad \#n & \quad \text{tí}^1 \text{ má} \quad \text{ʧèé} \quad \text{dá} \quad \text{åfål} \\
1.\text{SG.SUBJ.GRP1 FUT} \quad 1.\text{SG.SUBJ.GRP2 PERF be.there at.home} \\
\text{Intended Interpretation: ‘I will be at home.’}
\end{align*}
\]

Acceptable response:

\[
\begin{align*}
\! & \quad \text{ń} \quad \text{tí}^1 \quad \text{má} \quad \text{dá} \quad \text{åfål} \\
1.\text{SG.SUBJ.GRP1 FUT} \quad 1.\text{SG.SUBJ.GRP2 be.there at.home} \\
\text{‘I will be at home.’}
\end{align*}
\]

Additionally, clauses with stative predicates marked only with [ʧèé], like such clauses with eventive predicates, cannot have past, present or future habitual aspectual reference. Note that, as would be expected given the analysis of habitual aspectual reference given in Chapter 3, all the acceptable responses in these examples are marked with an imperfective marker. This is illustrated in (34), (35) and (36):

(34) Situation: I used to sell things from my house, and I was there every Thursday. Now I am there on Mondays, not Thursdays. Someone asks if you are in your house on Thursdays, and you answer:

\[
\begin{align*}
\#n & \quad \text{ʧèé}^1 \text{ dá} \quad \text{åfål} \quad \text{ålàmítì} \quad \text{báá} \\
1.\text{SG.SUBJ.GRP1 PERF be.there at.home CL.B.Thursday each} \\
\text{AGR.CL.B-every} \quad \text{à-pàŋá} \\
\text{Intended Interpretation: ‘I used to be at home every Thursday.’}
\end{align*}
\]
Acceptable response:

\[ \text{ń bònà tì dà áfål àlààmìfì báà} \]
\[ \text{1.SG.SUBJ.GRP1 PST IMPF be.there at.home CL.B.Thursday each} \]
\[ \text{à-páñà} \]
\[ \text{AGR.CL.B-every} \]

‘I used to be at home every Thursday.’

(35) **Situation:** I sell things from my house, and I am there every Thursday. Someone asks me when I will be home, because they want to buy from me:

\[ \#ń \text{ʧèé} \text{dá áfål àlààmìfì báà} \]
\[ \text{1.SG.SUBJ.GRP1 PERF be.there at.home CL.B.Thursday each} \]
\[ \text{à-páñà} \]
\[ \text{AGR.CL.B-every} \]

Intended Interpretation: ‘I am at home every Thursday.’

Acceptable response:

\[ \text{ń tì dà áfål àlààmìfì báà à-páñà} \]
\[ \text{1.SG.SUBJ.GRP1 IMPF be.there at.home CL.B.Thursday each} \]
\[ \text{à-páñà} \]
\[ \text{AGR.CL.B-every} \]

Intended Interpretation: ‘I am at home every Thursday.’

(36) **Situation:** I am going to regularly sell items from my house every Thursday, starting next week. I am explaining the plan to a friend:

\[ \#ń \text{ʧèé} \text{dá áfål àlààmìfì báà} \]
\[ \text{1.SG.SUBJ.GRP1 PERF be.there at.home CL.B.Thursday each} \]
\[ \text{à-páñà} \]
\[ \text{AGR.CL.B-every} \]

OR

\[ \#ń \text{ʧèé} \text{dá áfål} \]
\[ \text{1.SG.SUBJ.GRP1 PERF be.there at.home} \]
\[ \text{àlààmìfì báà à-páñà} \]
\[ \text{AGR.CL.B-every} \]

\[ \text{CL.B.Thursday each} \]
\[ \text{AGR.CL.B-every} \]

Intended Interpretation: ‘I will be at home every Thursday.’

Acceptable response:

\[ \text{ń tì má náá dà áfål} \]
\[ \text{1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP1 PERF be.there at.home} \]
\[ \text{àlààmìfì báà à-páñà} \]
\[ \text{AGR.CL.B-every} \]

‘I will be at home every Thursday.’

As this section has demonstrated thus far, then, clauses with stative predicates that are marked only with [ʧèé] have perfect aspectual reference, and do not constrain temporal reference. It has also been illustrated that [ʧèé]-marked clauses with stative predicates can have either continuative or non-continuative readings. The following
section illustrates the possible interpretations of clauses marked with [ʧèé] and an imperfective marker.

**4.1.3 Clauses Marked with [ʧèé] and an Imperfective Marker**

The previous sections have established that there is an Aktionsart-based difference on whether or not Anii clauses marked only with [ʧèé] can have continuative readings. Specifically, those with eventive predicates cannot, and those with stative predicates can. This is not surprising, given that continuative readings are also not possible in unmarked clauses with eventive predicates, as was discussed above—it seems that [ʧèé]-marked clauses with stative predicates are stative, while those with eventive predicates are not.

Recall from Chapter 3 that imperfective-marked clauses with both eventive and stative predicates are stative. This fact leads to the expectation that [ʧèé]-marked clauses that are also marked with an imperfective marker should be able to have continuative readings, since they are presumably stative. This hypothesis is born out by the facts, as shown below.

Examples of such clauses with telic (37) and atelic (38) eventive predicates with habitual interpretation are given here:

(37) Situation: You are right on the brink of jumping into a well. A friend asks you whether you sure about jumping, since it is not a safe thing to do. You have been regularly jumping into wells for quite awhile now. You say:

\[
\text{ńʧèé ti djòm lôkò ni} \\
\text{1.SG.SUBJ.GRP1 PERF IMPF jump CL.B.well in} \\
\text{‘I have been jumping into wells (regularly).’}
\]

(38) Situation: It is Wednesday, and you are talking to your boss who comments that the office is very clean. You say:

\[
\text{ńʧèé ti pèmpèŋè átàláááà báà á-pàŋá} \\
\text{1.SG.SUBJ.GRP1 PERF IMPF clean CL.B.Tuesday each AGR.CL.B-every} \\
\text{‘I have been cleaning every Tuesday.’}
\]

The eventuality times of the clauses in (37) and (38) are still continuing at the topic time, illustrating that imperfective-marked clauses with eventive predicates can have
continuative interpretations. Note, however, that non-continuative readings are also available for such clauses. In fact, the utterances in both (37) and (38) are possible with or without a continuative reading. (37) can be uttered in a situation where the speaker no longer regularly jumps in wells (perhaps in that case, the speaker is watching someone else on the point of well-jumping), and (38) can be uttered if the speaker used to clean the office awhile ago, but does not regularly clean any more (perhaps in a situation where the speaker’s boss is commenting on the unusual dirtiness of the office).

The combination of [ʧèé] and an imperfective marker is also possible with past temporal reference and continuative perfect aspectual reference. This is illustrated with the example (with a telic eventive predicate) in (39):

(39) Situation: Adamou is telling the story of a trip his family took several years ago. The family hired a taxi to take them on the trip. Adamou’s wife was worried that the taxi was not safe. In the story, he is telling his audience how he convinced his wife that the taxi was safe before and throughout the trip:

\[
\begin{align*}
\text{ń} & \quad ʧèè\ tì\ ηò\ ni \\
1.\text{SG.SBJ,GRP} & \quad 1.\text{PERF IMPF see} & 3.\text{SG.OBJ}
\end{align*}
\]

‘I had been looking at it (often).’

In (39), the topic time is the time when the family hired the taxi, Adamou’s inspections occurred before and during the trip, meaning (39) has a continuative reading (though the same clause is also acceptable in a context in which Adamou’s inspections stopped before the time of the trip, i.e. a non-continuative reading is also possible).

A past continuative example involving a clause with an atelic eventive predicate is given in (40):

(40) Situation: The speaker is telling a story about his older brother’s job search the previous year. The search took place because the brother did not like the office job he was working at the time. The story begins:

\[
\begin{align*}
\text{gàʧòkɔl} & \quad ɔmù-ŋònò \quad ʧèè\ tì\ lèè\ n-timá \\
1.\text{SG.POSS.CL.A-elder} & \quad 1.\text{PERF IMPF do} & \text{CL.F-work}
\end{align*}
\]

\[
\begin{align*}
\text{bìróò} & \quad dəŋ\ ni \\
\text{CL.B.office} & \quad \text{CL.B.one in}
\end{align*}
\]

‘Last year my older brother had been working in an office.’
In this case, the older brother’s regular work at the office was still occurring at the time of the story. The sentence in (40) would also be acceptable, however, if the brother had previously been working in an office, but was not doing so any longer at the topic time.

All the examples of clauses marked with both [ʧèé] and an imperfective marker that have been given thus far have had some type of habitual interpretation, in the sense that the clauses given denote regular, repeated eventualities. This fact raises the question of whether such a combination could also lead to progressive readings. This type of example was more difficult to elicit, and thus far there is only one possible example, given in (41):

(41) Situation: Adamatou is telling her friend that she (Adamatou) heard a loud noise on the previous day at 3:00 PM. Her friend asked her what she was doing at that time. She responds that she was not doing anything, but:

I PERF IMPF clean
‘I had been cleaning.’

It seems that in this example, the cleaning occurred at a time before the noise was heard (i.e. before 3:00). It is not clear at this point whether or not the utterance in (41) would be acceptable if Adamatou had still been cleaning at 3:00 (i.e. if a continuative reading is possible). This example provides support for the hypothesis that the combination of [ʧèé] and an imperfective marker can have episodic imperfective meaning.

As was demonstrated in Chapter 3, imperfective-marked clauses with no other markers and stative predicates can have habitual but not episodic imperfective interpretations. It is not surprising, then, that [ʧèé]-marked clauses with stative predicates that are also marked with an imperfective marker can have habitual (though not episodic imperfective) aspectual reference with past temporal reference. An example with habitual aspectual reference is in (42).:
(42) Situation: I used to sell things from my house, and I was there every Thursday. Now I am there only on Mondays, no longer on Thursdays. Someone asks if I am still regularly at my house on Thursdays, and I answer:

\[ ngëe tî dà afâl alââmîfì bàà \]

1.SG.SUBJ.GRP1 PERF IMPF be.there at.home CL.B.Thursday each

\[ à-pâŋá ñêmò ñêítènë ñ nà dà afâl \]

AGR.CL.B-every now CL.B.Monday 1.SG.SUBJ.GRP1 IMPF be.there at.home

I used to be at home every Thursday, now I am home on Mondays.

Clauses with stative predicates marked both with [ngëe] and an imperfective marker are also acceptable with present temporal reference and habitual aspectual reference, as illustrated in (43):

(43) Situation: You have an acquaintance who doesn't know that you regularly stay with your cousin in his house. One day the acquaintance comes to your cousin’s house to see someone else and sees you there. He is surprised that you are there, so you say

\[ ngëe tî dà àtîjâ, nà gí jë nó ñò \]

1.SG.SUBJ.GRP1 PERF IMPF be.there there and we TAM IMPF see

‘I have been (regularly) staying here since before we met.’

Here, the topic time is the utterance time, and the state of the speaker regularly being at his cousin’s house began before that topic time. It is noteworthy that without the [tî] present, it would be assumed that there had been one long stay (as in (25) above). That is, without the [tî], the example in (43) would have episodic imperfective aspectual reference, but with the [tî] present, such an interpretation is not possible. There is no data yet regarding clauses with stative predicates marked with both [ngëe] and an imperfective marker with future temporal reference, but it seems likely that such clauses do exist.

The evidence presented in this section has illustrated that [ngëe]-marked clauses marked also with an imperfective marker can have continuative or non-continuative readings, as long as the eventuality denoted by such a clause began before the topic time. When such clauses have stative predicates, an episodic imperfective interpretation is not possible, just as was the case with clauses marked only with [tî].
4.1.4 An Analysis of [ʧèé] in Gisida Anii

Given the empirical generalizations presented in the previous subsections, it appears that [ʧèé] is a perfect marker. This section will present a formal analysis of [ʧèé] based on a modification of Dowty’s (1979) Extended Now analysis proposed by Ruppe (2012). This type of analysis, as is shown below, can account for the possibility of both continuative and non-continuative perfects, and for the fact that the Anii perfect marker is compatible with past, present and future temporal reference.

Dowty’s (1979) proposal, which was originally developed to account for the present perfect in English, is that a clause marked with the (present) perfect has an eventuality time which is included in an interval of which the utterance time is a final subinterval. He calls this interval the Extended Now, or XN interval. In this analysis, if the eventuality time is a subinterval of the XN interval that does not include the utterance time (which is the final subinterval of the XN interval), then a non-continuative interpretation arises. Alternatively, a continuative reading would be analyzed as a situation in which the eventuality time is a subset of the XN interval that includes the utterance time.

Since he is analyzing English, Dowty (1979) is able to look to past-tense marking to account for cases of perfect-marked clauses with past temporal reference (and presumably also future, though he did not discuss that option in detail). That is, Dowty assumes that the past tense in English serves to shift the final subinterval of the XN interval into the past, so it is a relevant past time (presumably the topic time), rather than the utterance time. Since, while Anii may have a non-future tense, it does not have a past tense that can perform this function, Dowty’s analysis must be modified to account for the Anii facts.

Since ‘perfect’ is an aspectual category, not a temporal one (a distinction that Dowty (1979) did not discuss), I assume in the analysis presented here that [ʧèé] denotes an XN interval of which the topic time (as opposed to the utterance time) is a final subinterval. This modification of Dowty’s (1979) proposal follows Ruppe’s (2012) analysis of the dialectal English ‘done’ perfect used in South Carolina, because the ‘done’ perfect behaves more like [ʧèé] than the standard English ‘have’ perfect. Crucially,
Ruppe’s (2012) analysis makes use of an XN interval that refers to the topic time rather than the utterance time of a given clause. This analysis is presented formally below. Recall from Chapter 3 that the logical types used in my analyses are $i$ for time intervals, $t$ for truth values, $e$ for eventualities, and $\omega$ for worlds.

Dowty’s (1979) proposal is that the perfect should denote the existence of an XN interval, which he defines as follows (taken from Dowty 1979: 342):

\[(44) \text{XN}(t) \text{ is true at } <\omega, i> \text{ iff } i \text{ is a final subinterval of the interval denoted by } t.\]

(44) says that a given interval $t$ is an XN interval at world $\omega$ and time $i$ if and only if $i$ is a final subinterval of $t$. Since Dowty developed his analysis for the English perfect, he assumed that $i$ would be either the UT (for present perfect clauses), or a past interval denoted by a past tense marker (in past perfect clauses). As mentioned above, Dowty did not address perfect clauses with future temporal reference.

Ruppe (2012) analyzed a dialectal English perfect construction used in Spartanburg, South Carolina, which he refers to as the ‘done construction’. Some examples (from Ruppe 2012:ii) of this construction are given in (45), with an eventive example in (45a) and a stative example in (45b):

\[(45) a. \text{I done ate.} \]
\[(45) b. \text{Roseanne done lived in Columbus for three years.}\]

Ruppe claims that the Spartanburg done construction is a perfect which is compatible with past or present temporal reference, and does not have mandatory tense marking (unlike the more standard English have perfect analyzed by Dowty (1979), which must occur in tensed clauses). That is, in Ruppe’s data, many of the tokens of the done perfects occurred in clauses with no tense marking or temporal adverbials to restrict the topic time (though other tokens occurred in clauses with tense marking and/or temporal adverbials). A past example is given in (46a), and a present example in (46b), both of which are taken from Ruppe (2012: 18-19):
(46) a. Situation: Fred was in the hospital for a few days about a year ago. He is recounting his experience, describing how bored he was. He asked the staff if he could get up and walk around a bit, but they did not let him:
   I was laying down there and she done put all those monitors all over me.
   ‘I was lying there and [the nurse] had put monitors all over me.’

b. Situation: Tom and Jerry are watching a talk show, and Jerry makes a remark about the host:
   He look like he never ages. Probably done had that skin pulled back.
   ‘He looks like he never ages. [He] has probably had a face-lift’

These examples illustrate that the Spartanburg done perfect can occur in un-tensed clauses, meaning that, like the Anii marker [ʧèé], it does not rely on tense to constrain the relevant intervals. Since the Spartanburg done construction is similar to the Anii [ʧèé] in this way, I will use Ruppe’s (2012) analysis of the done construction as a basis for my analysis of Anii [ʧèé].

The key modification to Dowty’s (1979) analysis which is proposed by Ruppe (2012) is that Ruppe’s analysis must allow for a perfect marker to be acceptable with either past or present temporal reference, without tense marking. In order to do this, Ruppe re-writes Dowty’s definition of an XN interval so that the XN interval is defined using two intervals. This modification (from Ruppe 2012: 48) is as follows, where \( t \) and \( t' \) are variables ranging over intervals:

\[
XN(t, t') \text{ is true at } <\omega, i> \text{ iff } t' \text{ is a final subinterval of } t.
\]

Note that since the XN interval here is evaluated with reference to possible worlds \( (\omega) \), the meanings in the analysis below must be evaluated not only in relation to a model, a variable assignment function and a set of contextual indices, but also in relation to a specific world. The symbol \( \omega \) is thus included in the superscripts on the meaning brackets below, representing the world of evaluation.

With this modification in place, Ruppe’s translation of done into a predicate logic formula is given in (48) (taken from Ruppe 2012: 50), where \( i, t \) and \( t' \) are variables ranging over intervals, and \( Q \) is a predicate of intervals:
This translation says that there is an XN interval \( (t) \) of which an interval \( (i) \) is a final subinterval (Ruppe 2012 identifies this interval with the topic time of a given perfect-marked clause). Additionally, there is an interval \( t' \) that is a subinterval of \( t \), at which an eventuality denoted by a predicate \( Q \) holds.

I will assume, following Ruppe’s (2012) definition of \textit{done}, that \textit{ʧèé} is defined as in (49):

\[
\text{(49)} \quad \text{〚ʧèé〛} = \left[ \lambda Q <_{\text{co}, \text{po}} \lambda i <_{{}_{\text{cl}}} \exists t \left[ \text{XN}(t, i) \land \exists t' \left[ t' \subseteq t \land Q(t') \right] \right] \right]_{M, g, c, \omega}
\]

It is important to note that, while this translation allows for both continuative and non-continuative perfects, it does not in itself explain why continuative readings are not available in clauses with eventive predicates but are available in clauses with stative predicates. In the analysis given below, it is the Aktionsart markers, not the perfect marker itself, that account for this difference in available interpretations. Thus, unlike the imperfective marker analyzed in Chapter 3, \textit{ʧèé} is assumed to compose with the combination of the clause radical and an Aktionsart marker, rather than directly with the clause radical.\footnote{This type of analysis might raise the question as to why there seems to be an Aktionsart-related difference in the interpretation of clauses marked with both \textit{ʧèé} and \textit{ti}, since the presence of the imperfective marker means that AKT would not be present in the analysis of such clauses. Though more data is needed on the interpretation of such clauses, it seems likely that the reason for the difference has something to do with the Gricean Blocking Principle discussed in Chapter 3.}

We are now ready to derive translations of Anii clauses marked with \textit{ʧèé}. The next subsection will present an analysis of \textit{ʧèé}-marked clauses with eventive predicates.

4.1.4.1 The Derivation of [ʧèé]-Marked Clauses with Eventive Predicates

In order to exemplify how a translation of a \textit{ʧèé}-marked eventive clause could be derived, I will again use the eventive clause radical /\textit{ń tsɨ ɩ} Fɩ ɩrɩ ɩɲɩ ɩʊ\textit{/}, ‘\textit{I go Frignion}’, in

\[
\text{(48)} \quad \text{done} = \left[ \lambda Q <_{\text{co}, \text{po}} \lambda i <_{{}_{\text{cl}}} \exists t \left[ \text{XN}(t, i) \land \exists t' \left[ t' \subseteq t \land Q(t') \right] \right] \right]_{M, g, c, \omega}
\]
the clause /ń ʧēe tsi Fǐrińiô/, ‘I have/had gone to Frignon’. The translation given for this
radical in Chapter 3 is repeated in (50), where, as in Chapter 3, $e$ is a variable denoting an
eventuality, and $sp$ is a contextually-defined variable denoting the speaker of an
utterance:

(50) $[[\text{n tsi Fǐrińiô}_{\langle t, p \rangle}]^{M,g,c,ω} = [\lambda e[\text{go.to.Frignon}′(e, sp)] ]^{M,g,c,ω}$

This eventive radical selects for the eventive version of the Aktionsart marker AKT,
whose definition is repeated in (51), where $P$ is a predicate of events, and $i$ is a variable
denoting a contextually-defined time interval:

(51) $[[\text{AKT}_{\langle t, p \rangle}]^{M,g,c,ω} = [\lambda P_{\langle t, p \rangle} \lambda i_{\langle t, p \rangle} \exists e[P(e) \land τ(e) \subset i]]^{M,g,c,ω}$

Finally, recall that I am making the assumption here that Anii has a phonologically null
non-future tense, NONFUT, whose definition is repeated here:

(52) $[[\text{NONFUT}_{\langle p \rangle}]^{M,g,c,ω} = [t_i]^{M,g,c,ω}$
only defined if $g(t) \leq [t_i]^{M,g,c,ω}$

Given this background, a translation of the Anii sentence /ń ʧēe ′ tsi ′ Fǐrińiô/, ‘I
have/had gone to Frignon’ is derived as in (53). Note that $l$ is a variable ranging over
intervals:

(53) a. $[[\text{AKT}_{\langle t, p \rangle} (\text{n tsi Fǐrińiô})_{\langle t, p \rangle}]^{M,g,c,ω} =$
$[[\lambda i_{\langle t, p \rangle} \exists e[\text{go.to.Frignon}′(e, sp) \land τ(e) \subset i]]_{\langle t, p \rangle}]^{M,g,c,ω}$

b. $[[\text{AKT}_{\langle t, p \rangle} (\text{n tsi Fǐrińiô})_{\langle t, p \rangle}]^{M,g,c,ω} =$
$[[\lambda i_{\langle t, p \rangle} \exists e[\text{go.to.Frignon}′(e, sp) \land τ(e) \subset i]]_{\langle t, p \rangle}]^{M,g,c,ω}$

$[[\lambda [XN(t, l) \land \exists t′ [t′ \subset t \land Q(t′)]]](\lambda i_{\langle t, p \rangle} \exists e[\text{go.to.Frignon}′(e, sp) \land τ(e) \subset i])_{\langle t, p \rangle}]^{M,g,c,ω} =$
$[[\lambda [XN(t, l) \land \exists t′ [t′ \subset t \land Q(t′)]]](\lambda i_{\langle t, p \rangle} \exists e[\text{go.to.Frignon}′(e, sp) \land τ(e) \subset t′])_{\langle t, p \rangle}]^{M,g,c,ω}$
According to (53c), then, the Anii sentence /ń ñèé ¹ tsi Frignion/, ‘I have/had gone to Frignion’, is predicted to be true if and only if there is an XN interval $t$ of which the contextually-defined topic time interval $t_t$ is a final subinterval, there is another interval $t'$ that is included in or equal to $t$, and there is an event of the speaker going to Frignion such that the eventuality time of that event is properly included in $t'$. This fact (that the eventuality time is properly included in $t'$) is what accounts for the generalization that Anii clauses with eventive predicates marked only with [ʧèé] cannot have continuative readings. That is, since $t'$ is a subinterval of $t$, then the fact that the eventuality time interval is properly included in $t'$ means that the eventuality time interval is also properly included in $t$. Since the topic time is a final subinterval of $t$, this means that the eventuality must precede the topic time, and cannot include it.

4.1.4.2 The Derivation of [ʧèé]-Marked Clauses with Stative Predicates

The major difference between stative and eventive clauses in my analysis is the version of AKT that the clause radical selects for. Recall from Chapter 3 that AKT selected for by stative clause radicals is that defined as in (54). Note that from this point on, I will no longer include the superscripts, but the translations are still assumed to be evaluated with reference to a model, a variable assignment function, a context, and a specific world:

\[
\begin{align*}
\left[ \text{AKT}_{<L,P,<L,F>} \right] &= \left[ \lambda P_{<L,F} \lambda i_{<L,F} \exists s[P(s) \land \tau(s) \supseteq t] \right]
\end{align*}
\]

As in Chapter 3, this derivation will use the following definition of the stative clause radical /ń dà àfál/. Recall that $s$ is a variable ranging over stative eventualities, and $sp$ is a contextually-defined variable denoting the speaker of a given utterance:
We are now able to derive a translation for the stative clause /ń ʧeé da afál/, ‘I had/have been at home.’ The derivation is given in (56):

(56) a. \[ \{ AKT_{<<ɛ,t>},<<ɛ,t>}> (∨ t, ṭ) = \{ λ, [\text{be.at.home}'(s, sp)] \} \]

b. \[ \{ τ (s) \sqsupseteq i \} \]

c. \[ \{ τ (s) \sqsubseteq t \} \]

The derivation in (56c), then, predicts that the Anii sentence /ń ʧeé da afál/ is true if and only if there is an interval \( t \) of which the contextually-defined topic time interval \( t_t \) is a final subinterval, there is another interval \( t' \) that is included in or equal to \( t \), and there is a state of the speaker being at home such that the eventuality time of that state includes or is equal to \( t' \). Unlike the derivation of the eventive clause given in (53) above, the derivation in (56) allows for a continuative reading because the eventuality time of the state denoted here is a superset of \( t' \). If \( t' \) is equal to \( t \), a continuative reading is the only possibility, and if \( t' \) is a proper subset of \( t \), either a continuative or a non-continuative reading is possible, depending on the size of the intervals in question, which would be determined by context.

The analysis presented here thus accounts for the empirical generalizations discussed above using the Aktionsart markers proposed in the previous chapter to account for the interpretation of unmarked clauses. As was shown above, however, clauses marked with both \( [ʧeé] \) and an imperfective marker exhibit different generalizations that also need to be accounted for. Since these clauses also can have continuative or non-continuative interpretations, any analysis of such data would have to account for that fact.
The analysis of clauses with multiple TAM markers would be a fruitful further testing ground for the analysis proposed here.

4.1.5 Conclusions Regarding [ʧêé]

This section has shown that the Anii marker [ʧêé] is a perfect marker that is compatible with past, present and future temporal reference, and that it can be analyzed using Ruppe’s (2012) modification of Dowty’s (1979) XN model. The next section discusses the meaning of the marker [bônà].

4.2 The Far-Past Marker [bônà]

The last marker that will be analyzed in detail for this dissertation is the far past marker [bônà]. A clause marked with [bônà] has the meaning that the eventuality denoted by that clause occurred long before the utterance time. The exact definition of ‘long before’ in this case is not clearly delimited, as will be discussed further below, but [bônà]-marked clauses are generally unacceptable when the eventuality denoted by the clause happened less than several weeks before the utterance time of that clause.

This section presents and analyzes data that illustrates that, while in some cases, [bônà] may appear to constrain temporal reference in some instances, it actually constrains the eventuality time, and is not in fact a tense marker. An example of a [bônà]-marked clause is given in (57):

(57) Situation: My language consultant went to Ghana in 2003. We are talking in 2013 about his history of travelling, and specifically about his trip to Ghana. He says:

ń bônà tsi ĝâná
1.SG.SUBJ.GRP1 PST go CL.B.Ghana
‘I went to Ghana long ago.’

In this example, the eventuality time of the speaker going to Ghana precedes the utterance time by about ten years. The exact topic time is the time of the speaker’s trip, since that is the topic of the conversation. Thus, the topic time also precedes the
utterance time by about ten years. In other words, in (56), it is impossible to say for sure whether the presence of [bɔŋà] is affecting the eventuality time or the topic time—but knowing which is occurring is central to the determination of the meaning of [bɔŋà].

Section 4.2.1 presents data regarding the interpretation [bɔŋà], and how [bɔŋà]-marked clauses can and cannot be used in Anii. Once this data has been presented, Section 4.2.2 will discuss acceptable combinations of [bɔŋà] with other markers, and what those combinations illustrated about the nature of [bɔŋà]. A formal analysis is then proposed in Section 4.2.3, and Section 4.2.4 provides further discussion of the claim that [bɔŋà] is a TRM.

4.2.1 The Meaning of [bɔŋà]

[bɔŋà] is a far past marker. That is, it can only be used in clauses that denote an eventuality that occurred long before the utterance time. As the data presented here will show, however, it is not fully clear how long before the utterance time an eventuality must have occurred for a clause denoting that eventuality to be acceptably marked with [bɔŋà]. For example, [bɔŋà] is acceptable in both (58), where the eventuality occurred many years before the utterance time, and in (59), where the eventuality time precedes the utterance time by only a few weeks:

(58) Situation: Aminou is helping Issifou build a house. Issifou is surprised that Aminou already knows how to build, and asks if this is the first building that Aminou built. Aminou replies:

\[
\begin{align*}
\text{1.SG.SUBJ.GRP} & \quad \text{bɔŋà \ tɔ} & \quad \text{ŋ-kù} \\
\text{1.PST} & \quad \text{build CL.F-room} \\
\text{‘I built a house long ago.’}
\end{align*}
\]

(59) Situation: I went to Frignion to visit my brother less than a month ago. My friends know I went to visit him recently, but do not remember when, so they ask me. I say:

\[
\begin{align*}
\text{1.SG.SUBJ.GRP} & \quad \text{bɔŋà tɔ} & \quad \text{Frignion \ aŋɔ \ a-sááká \ nì} \\
\text{1.PST} & \quad \text{go Frignion CL.8-month AGR.CL.3 other in} \\
\text{‘I went to Frignion long ago within this (past)\textsuperscript{86} month.’}
\end{align*}
\]

86 The adverbial here, [äŋɔ a-sááká ! nì], can mean ‘in this past month’, as in example (56), but is can also mean sometime in the next month, the pastness in (56) comes from the context. That is, the adverbial refers to time within a month of the utterance time, either before or after.
[bʊŋà]-marked clauses cannot be acceptably used in clauses where the eventuality time includes or is the utterance time:

(60) Situation: I am jumping into a well right at this very moment, and I want all my friends to come watch my daring deed, so I shout:

#ń bʊŋà ɗʒām lòkò nì ’námò
I PST jump CL.B.well in now

Intended Interpretation: ‘I am jumping into a well right now.’

Acceptable version:

ń tì ɗʒṑm lòkò nì ’námò
I IMPF jump CL.B.well in now
‘I am jumping into a well right now.’

(61) Situation: My mother wants to know if I’ve swept the courtyard yet. I am in the process of doing so at the moment, so I say:

#ń bʊŋà ɓɛr ɲámò
I PST sweep now

Intended Interpretation: ‘I am sweeping right now.’

Acceptable response:

ń tì ’ɓɛr ɲámò
I IMPF sweep now
‘I am sweeping right now.’

(62) Situation: A friend phones me and wants to know when I'll be at home so she can stop by and see me. I am currently at my house, so I say:

#ń bʊŋà dá ɗafäl ɲámò
I PST? be.there at.home now

Intended Interpretation: ‘I am at home right now.’

Acceptable response:

ń dá ɗafäl ɲámò
I be.there at.home now
‘I am at home right now.’

Additionally, [bʊŋà]-marked clauses are unacceptable if the eventuality time follows the utterance time:

(63) Situation: I plan on jumping into a well tomorrow at 3 PM, and I want all my friends to come watch my daring deed, so I tell them:

#ń bʊŋà ɗʒām lòkò ní gâtsiŋ bù-kɔŋkɔŋɔ bù-riù
I.SG.SUBJ.GRP1 PST jump well in tomorrow CL.Ø-hours CL.Ø-three

Intended Interpretation: ‘I will jump into a well tomorrow at 3:00.’
Acceptable response:

ǹ 1. SG. SUBJ. GRP1 1. SG. SUBJ. GRP2 1. SG. SUBJ. GRP1 FUT jump well in 3.00.

Situation: My mother wants to know when I’m going to sweep my courtyard, since it is looking terrible. I plan on sweeping tomorrow at 3 PM, so I say:

Acceptable response:

ǹ 1. SG. SUBJ. GRP1 FUT sweep tomorrow 3.00.

Intended Interpretation: ‘I will sweep tomorrow at 3:00.’

Situation: A friend phones me and wants to know when I’ll be at home tomorrow so she can stop by and see me. I tell her:

Acceptable response:

ǹ 1. SG. SUBJ. GRP1 FUT be there at home tomorrow 3.00.

Intended Interpretation: ‘I will be at home tomorrow at 3:00.’

These examples have illustrated that [bʊŋà] is compatible with past temporal reference, but not present or future temporal reference. They have not addressed the question of how far in the past an eventuality has to have occurred for [bʊŋà] to be acceptable in a clause denoting that eventuality.

Interestingly, the use of [bʊŋà] in examples where the past time being referenced is not very far in the past is questionable if the adverbials in the clause are too specific. For example, consultants did not agree whether the following example was acceptable:
(66) Situation: I went to Frignion to visit my brother exactly a month ago. My friends know I went to visit him recently, but do not remember exactly when, and ask me when I went. I say:

\[ ?\text{ń bōŋa tsi} \text{ Fīrīnjū à-ŋòrò à-sāákà } \]

1.SG.SUBJGRP1 PST go Frignion CL.Æ-month AGR.CL.Æ-other

‘I went to Frignion a month ago.’

The utterance in (66) seems to indicate that [bōŋa] is more easily accepted, at least by some speakers, when the eventuality time of the clause is not specifically known. This apparent limitation on [bōŋa]-marked clauses containing specific adverbials only seems to apply, however, when the eventuality denoted by the clause occurred reasonably close to the UT, since the following utterances were accepted without question:

(67) Situation: It is my wedding anniversary, and I am telling my children about things that happened on my wedding day 25 years ago. I say:

\[ ìmà-híjè kú-jílè, ñ bōŋa jídà ñ-tūlò \]

1.SG.POSS.CL.B-wedding POSS.CL.E-day 1.SG.SUBJGRP1 PST call CL.F-song

‘On my wedding day, I sang a song.’

(68) Situation: My friend is trying to remember the timing of the last time we met. I remind him by saying:

\[ ñ bōŋa ñò àki gāʧòkòl jòfò \]

1.SG.SUBJGRP1 PST see 2.SG.OBJ last.year CL.B.white.person

à-ŋòrò tìb n ì-dùn kàʤà i-jílè è tìb
POSS.CL.Æ-month ten and AGR.CL.Æ-one ASSOC CL.U-days ten
bù-kòŋkòŋò bù-nàm
CL.Û-hours AGR.CL.Û-four

‘I saw you at 4:00 on November 10 last year.’

It is possible, then, that the marker [bōŋa] is compatible with specific temporal adverbials in cases where the eventuality time far precedes the utterance time, but that for some speakers, as the eventuality time gets closer to the utterance time, [bōŋa] can only be used if there is some level of vagueness to the speaker’s knowledge of the timing of the eventuality in question.
However, there also appears to be variation in acceptability based on the predicate in a clause. Compare (66) above with (69), which was acceptable for all speakers. The time depth here is roughly the same, but the meanings of the predicates are very different:

(69)  Situation: I have a new job, and in the course of that job, I cleaned in the office once, several weeks ago. I am having a conversation with a colleague, who is worried about the state of the office and asks when it was cleaned. I say:

\[
\text{ń } \text{bōŋà pēm̀p̀ẹ̀nè } \text{á-ŋɔ̀rọ́ } \text{á-sààká } \text{ni}
\]

\begin{verbatim}
1.SG.SUBJ.GRP1 PST clean CL.3-month AGR.CL.3 other in
\end{verbatim}

‘I cleaned long ago within this (past) month.’

The question raised by this example is this: why is the use of [bōŋà] acceptable for all speakers when talking about cleaning the office, but questionable when talking about going to Frignion? One possible answer to this is proposed by Bochnak and Klecha (2014) who investigate what they term Temporal Remoteness Morphemes\(^\text{87}\) in Luganda. An important point made in this analysis is that the determination of whether e.g. a distant past morpheme is appropriate in a given context comes from ‘comparison class’ provided by the context. That is, they compare Temporal Remoteness Morphemes (at least in Luganda which, like Gikuyu (Cable 2013) has several different past TRMs) to gradable adjectives like ‘big’ and ‘tall’. Their proposal is that just as a ‘big’ elephant is actually quite a bit bigger than a ‘big’ earthworm, a far-past TRM would be expected to have different acceptability restrictions with different predicates depending on how often that predicate could be expected to occur.

For example, Bochnak and Klecha (2014) provide an example where a recent past marker is used to discuss crops that were planted several months before—the recent past is acceptable in this case because crop planting is something that only happens once or twice a year. Thinking along these lines, then, it is possible that the example in (64) is questionable because people generally do not travel to Frignion from Bassila very frequently—at most once a week for the Frignion market, but probably even less often

\(^{87}\) Unlike Cable (2013), Bochnak and Klecha (2014) assume that the morphemes they call Temporal Remoteness Morphemes are tenses, because they do not have the data to test whether they are TRMs in the sense of Cable (2013) and this dissertation, i.e. if they constrain the relationship between the eventuality time and the utterance time of a given clause. They do not, however, preclude the possibility that these Luganda morphemes are TRMs in that sense, pending further research.
for most people. In contrast, in Anii culture, cleaning (a house or an office) is something that usually happens every day. Thus, the fact that the speaker cleaned the office several weeks ago in the example in (69) means that the cleaning occurred much longer ago than might have been expected, leading to the acceptance of the use of [bʊŋà] in that example. In (66), then, the questionable acceptability of [bʊŋà] could be due to the fact that three weeks is not a very long time ago with respect to the expected frequency of travel to Frignion.

Pending future research with a larger variety of predicates, then, from the examples above, it seems that [bʊŋà] can be acceptably used in cases where the eventuality time of a clause ended about three weeks or more before the utterance time of that clauses. Additionally, whether or not the use of [bʊŋà] is acceptable does seem to vary according to context, particularly according to world knowledge about the expected frequency of occurrence for a relevant predicate. What can be said definitively is that no examples of [bʊŋà]-marked clauses that are acceptable when the eventuality time precedes the utterance time by only a day have yet been found, as shown in (70) and (71):

(70) Situation: My mother (who lives in a different city) is very worried about my courtyard-sweeping, so she calls me to ask about it. I swept yesterday, so I say:

#ń bʊŋà ʃɛr ɩrɩgà láɩ 1.
1.SG.SUBJ.GRP PST sweep yesterday

Intended Interpretation: ‘I swept yesterday.’

Acceptable response:
ń ʃɛr ɩrɩgà láɩ 1.SG.SUBJ.GRP sweep yesterday
‘I swept yesterday.’

(71) Situation: My older sister was not paying attention to where I was living recently, since I switch between staying with a friend and being at home. Now she wants to know when I was home, because my mother (who lives in yet a different house) has been asking her about me. I was at home yesterday, so I say:

#ń bʊŋà dà ɑfɑl ɡålai 1.
1.SG.SUBJ.GRP PST be.there at.home yesterday

Intended Interpretation: ‘I was home yesterday.’
Acceptable response:

ň        dà     àfál     gàláí
1.SG.SUBJ.GRP1     be.there    at.home     yesterday
‘I was home yesterday.’

The evidence given above illustrates that [bônà] is acceptable only in clauses in which the eventuality time of the clause precedes the utterance time by several weeks or more. It is clear, then, that [bônà] is a far-past marker. The remaining question, then, is what kind of far-past marker it is. I will argue here that [bônà] is a Temporal Remoteness Morpheme (TRM).

The reader will recall from Chapter 2 that TRMs, as proposed by Cable (2013) for the Bantu language Gĩkũyũ (Kikuyu), are grammatical markers which affect the relationship between the eventuality time and the utterance time of a given clause. These markers are different from tenses, which constrain temporal reference (i.e. the relationship between the topic time and the utterance time of a given clause). In clauses with perfective and imperfective aspectual reference, it is impossible to tell whether a given marker is a tense or a TRM, since in those cases, the eventuality time and the topic time always overlap. The data below, which specifically addresses the question of whether [bônà] is a tense or a TRM, will therefore focus on clauses that have neither perfective nor imperfective aspectual reference, i.e. clauses with perfect (ET < TT) or prospective (TT < ET) aspectual reference.

An important piece of evidence is the fact that, as briefly mentioned in section 4.1, [bônà]-marked clauses can be used in some of the same situations as perfect-marked clauses. In many situations, either a [bônà]-marked or a [ʧêé]-marked clause is acceptable, as (72) illustrates:

(72) Situation: Ibrahim is a young man, but he has been working and making good money for many years now. An acquaintance, who knows this, is surprised that Ibrahim is still renting rooms and not living in his own house. What the acquaintance does not know is that Ibrahim did build a house a couple of years ago, but it was too close to the main road, so it got knocked down when the government paved the road. The acquaintance asks Ibrahim why he (Ibrahim) does not have his own house. Ibrahim replies:
What is especially telling about the situation in (72) is that the topic time in this case is the utterance time—the question Ibrahim is answering has present temporal reference. The fact that [bʊŋ] can be used with present temporal reference provides evidence that it is not a past tense marker. In (72a), the eventuality time of Ibrahim building the house precedes both the utterance time and the topic time by a couple of years. Thus, it is to be expected that a past TRM (ET < UT) and a perfect marker (ET < TT) would both be acceptable in this case.

There are some situations, however, in which [bʊŋ] and [ʧèé] are not both acceptable, as was illustrated in examples (29) and (30) above. Specifically, [ʧèé]-marked clauses with stative predicates can have a continuative interpretation, but [bʊŋ]-marked clauses with such predicates cannot. These cases shed additional light on the meaning of [bʊŋ], as is illustrated in (73) and (74):

(73) Situation: I used to be very tall, but for the past few months, I have been suffering from a strange illness that makes tall people short. A new acquaintance comments on how short I am, and I say:
   a. ń bʊŋ lámá
      1.SG.SUBJ.GRP1 PST be.tall
      ‘I was tall long ago.’
   b. ńʧèé ! lámá
      1.SG.SUBJ.GRP1 PERF be.tall
      ‘I have been tall.’

(74) Situation: I used to be very short, but I went through a growth spurt about a year ago and I have been tall for almost a year now. My grandmother, who has not seen me since the growth spurt comments on how tall I am, and I say:
   a. #ń bʊŋ lámá
      1.SG.SUBJ.GRP1 PST be.tall
      Intended interpretation: ‘I was tall long ago [and still am].’
Note that the topic time is the utterance time in both (73) and (74). As with the previous examples, if [bʊ ŋà] were a past tense marker, it would be expected to be unacceptable in both (73) and (74), since past tense markers are not compatible with present temporal reference. If it were a perfect marker, it would be expected to be acceptable in both (73) and (74), as [ʧèé] is. The fact that the [bʊ ŋà]-marked clause is acceptable in (73), but not (74) supports the hypothesis that [bʊ ŋà] is a past TRM, given that the eventuality time of being tall precedes the utterance time in (73), but includes the utterance time in (74).

Thus, the examples above have shown that clauses marked with [bʊ ŋà] are acceptable in response to some questions with present temporal reference, specifically, in the same situation as some present perfects, as long as the eventuality time of the clause in question far precedes the utterance time.

The data in (74) and (75) might suggest that the key difference between [ʧèé] and [bʊ ŋà] is that [ʧèé]-marked clauses with stative predicates can have continuative interpretations, but [bʊ ŋà]-marked clauses cannot. This is not the case, as shown in (75):

(75) **Situation:** I am telling a story about my teenage years (which are long past).
At the time of the story, I had been tall for many years, though now I have mysteriously shrunk and am no longer tall:

a. **sám ŋ-dé ! ni, ŋ bʊ ŋà lámá**
  `I was tall long ago.'

b. **sám ŋ-dé ! ni, ŋ ʧèé ! lámá**
  `I had been tall.'

As (75) illustrates, [bʊ ŋà] can be used with a continuative interpretation—but only in clauses where the eventuality time far precedes the utterance time. That is, the eventuality time does not necessarily terminate before the topic time, but it must terminate before the utterance time. What (74) and (75) show is that in [bʊ ŋà]-marked
clauses, the eventuality time can precede or include the topic time, but it must precede the utterance time.

There are also cases where a far-past tense would be acceptable, but in which [bʊŋà] cannot be used. Specifically, it seems that [bʊŋà]-marked clauses are not acceptable in situations where the topic time is far in the past, but the eventuality time continues into the present or the near past. In such situations, a far-past tense marker should be acceptable (since the topic time far precedes the utterance time), but a far-past TRM should not (since the eventuality time does not far precede the utterance time). This type of situation occurs in some clauses with past temporal reference in which the eventuality time of the clause continues through the utterance time, as in (76):

(76)  Situation: A rich old man is telling a story about his past. The story happened ten years ago, when the man was already rich. He begins the story:

a.  #sám  n-dé  ní, ń  bʊŋà wòdá gi-táni
    CL.B.time  AGR.CL.B-DEM.FAR  in  L.SG.SUBJ.GRP1  PST  have  CL.D-money
    Intended Interpretation: ‘At that time, I had money.’

b.  sám  n-dé  ní, ń (ʧèé) wòdá gi-táni
    CL.B.time  AGR.CL.B-DEM.FAR  in  L.SG.SUBJ.GRP1  (PERF) have  CL.D-money
    ‘At that time, I (had) had money.’

The form in (76a) would only be acceptable in a situation where the speaker no longer has money at the utterance time. No matter how long ago the topic time is, [bʊŋà] cannot be used in a clause if the eventuality time of that clause continues through the utterance time.

The examples provided here have shown that [bʊŋà] is not a past tense marker because it can be used with present temporal reference, as in (72)-(74) above, but cannot be a perfect because it is not compatible with continuative perfect readings in the present (though it is compatible with far-past continuative readings). The one constant in all the examples given above is that [bʊŋà] is acceptable when the eventuality time terminates at least three weeks before the utterance time.

Thus, the evidence presented thus far points to [bʊŋà] being a temporal remoteness marker, not a past tense or a perfect marker. One more piece of evidence that
may support this conclusion is the fact that in many cases, the use of [bʊŋà] is optional—unmarked eventive clauses are often acceptable in the same situations as [bʊŋà]-marked clauses with eventive predicates. Recall that in the definition being used in this dissertation, tense marking is not optional (cf. Plungian and van der Auwera 2006, Cover and Tonhauser forthcoming), so the fact that [bʊŋà] is optional in some cases strengthens the argument that it is not a tense. This optionality is illustrated in (77) and (78):

(77) Situation: A friend asks me whether I have ever gone to Frignion. I went once when I was a child (I am now 32 years old). I say:
   a. àŋ-gi-dʒálá ! ní, ñ ! tsi' Fɪrɪɲó
       1.SG.POSS-CL.D-childhood in 1.SG.SUBJ.GRP1 go Frignion
       ‘In my childhood, I went to Frignion.’
   b.  àŋ-gi-dʒálá ! ní, ñ bʊŋà tsi' Fɪrɪɲó
       1.SG.POSS-CL.D-childhood in 1.SG.SUBJ.GRP1 PST go Frignion
       ‘In my childhood, I went to Frignion long ago.’

(78) Situation: A friend asks me whether I have ever swept. I only did so once, when I was a child (I am now 32 years old). I say:
   a.  àŋ-gi-dʒálá ! ní, ñ jɛr
       1.SG.POSS-CL.D-childhood in 1.SG.SUBJ.GRP1 sweep
       ‘In my childhood, I swept.’
   b.  àŋ-gi-dʒálá ! ní, ñ bʊŋà jɛr
       1.SG.POSS-CL.D-childhood in 1.SG.SUBJ.GRP1 PST sweep
       ‘In my childhood, I swept long ago.’

Since the clauses in these examples contain adverbials that refer to a long-ago time period, they have effectively the same meanings with or without [bʊŋà]. This suggests that the presence of [bʊŋà] is only one of two or more ways to convey in Anii that an event occurred far in the past. This is not to say, however, that there is no difference in meaning between unmarked and [bʊŋà]-marked clauses. In fact, there do seem to be different assumptions made between unmarked and [bʊŋà]-marked forms where there is no adverbial, as illustrated in (79) and (80):

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(79)  Situation: A friend asks me whether I have ever gone to Frignion. I went once. I say:

a. ń tsí Frignon
   1.SG.SUBJ.GRP1 go Frignon
   ‘I went to Frignion.’

b. ń bōŋa tsí Frignon
   1.SG.SUBJ.GRP1 PST go Frignon
   ‘I went to Frignion long ago.’

(80)  Situation: A friend asks me whether I have ever swept. I have done so once. I say:

a. ń jēr
   1.SG.SUBJ.GRP1 sweep
   ‘I swept.’

b. ń bōŋa jēr
   1.SG.SUBJ.GRP1 PST sweep
   ‘I swept long ago.’

The unmarked clauses in (79a) and (80a) do not say anything in particular about how long ago the speaker went to Frignion or swept. The [bōŋa]-marked clauses in (79b) and (80b), however, specify that the going to Frignion or the sweeping must have occurred long ago. My consultants, in fact, assume several months, or even years have passed when they hear such [bōŋa]-marked clauses without contextual or adverbial specification of time.

In comparing unmarked clauses with stative predicates to [bōŋa]-marked clauses with stative predicates, an even more telling distinction emerges, similar to that found in comparing [bōŋa]-marked and perfect-marked clauses above, as shown in (81) and (82):

(81)  Situation: A poor person is telling a story about his long-ago past, when he used to have money. He begins the story by saying:

a. sām ŋ- dé ní, ŋ wōdā gi-tānī
   CL.B.time AGR.CL.B-DEM.FAR in 1.SG.SUBJ.GRP1 have CL.D-money
   ‘At that time, I had money.’

b. sām ŋ- dé ní, ŋ bōŋa wōdā gi-tānī
   CL.B.time AGR.CL.B-DEM.FAR in 1.SG.SUBJ.GRP1 PST have CL.D-money
   ‘At that time, I had money.’
(82) Situation: A rich person is telling a story about his long-ago past, when he was already rich. He begins the story by saying:

a. sám ʹn- dé'! ní, ń  wʊɗà gi-tání
   CL.B.time AGR.CL.B-DEM.FAR in 1.SG.SUBJ.GRP1 have CL.D-money
   ‘At that time, I had money.’

b. #sám ʹn- dé'! ní, ń  bʊŋà wʊɗà gi-tání
   CL.B.time AGR.CL.B-DEM.FAR in 1.SG.SUBJ.GRP1 PST have CL.D-money
   Intended Interpretation: ‘At that time, I had money.’

As can be seen here, the [bʊŋà]-marked clause is unacceptable in exactly the case in which the eventuality time continues up until the utterance time. Both the unmarked and the [bʊŋà]-marked clauses are acceptable in (80), where the speaker no longer has money at the utterance time (though the [bʊŋà]-marked clause is actually preferred in this situation). But in (81), the speaker still has money at the utterance time, and the [bʊŋà]-marked clause is unacceptable. This data supports the fact that [bʊŋà] is a past TRM, since it cannot be used when the eventuality time includes the utterance time.

Another point to be made here is that [bʊŋà] is optional is in narratives set in the far past, where it is possible (and stylistically preferred by my consultants) that only the first clause in a narrative is marked with [bʊŋà], and subsequent clauses are assumed to be far past by association. (83) is from a story written by Salimatou BABA BODY:

(83) Situation: This story was written in response to the question ‘what was Bassila like in your childhood?’ As part of the answer, the author included the question ‘what changed?’, and gives the following response to that question:

   gi  bʊŋà dá  ŋ-kômò'  ŋ-dʒi,  kóótál
   1.PL.SUBJ.GRP2 PST be.there CL.F-darkness CL.F-FOC CL.B.paved.road
   à  màná,  fitilà  à  màná,  sùkùrù
   AGR.CL.B be.absent CL.B.lamp AGR.CL.B be.absent CL.B.school
   à-bömböŋò  à  màná,  i-táŋnąká  ká-kulô
   AGR.CL.B-big AGR.CL.B be.absent CL.U-credit.union POSS.CL.T-group
   i  màná,  bà-sàmprô  ki  bà  bʊŋà wʊɗà  ikàjì
   AGR.CL.T be.absent CL.Y-woman NEG AGR.CL.Y PST have CL.B.strength
   ná
   NEG
   ‘We were in darkness, the paved road wasn't there, electricity wasn't there, the secondary school (=CEG) wasn't there, credit unions weren't there. Women didn't have power.’
4.2.2 The Combination of [bʊŋà] and Other Markers

Like the perfect marker [ʧèé] discussed in Section 4.1, [bʊŋà] can combine with an imperfective marker, as will be illustrated here using the imperfective marker [tɪ]. Clauses that are marked with both [bʊŋà] and [tɪ] must denote an eventuality that occurred regularly in the past, but no longer occurs in the present. An example with a telic eventive predicate is given in (84), and one with an atelic eventive predicate in (85):

(84) Situation: A friend and I are talking about how villages have changed over the years. A friend asks if I went to Frignion in my childhood. Since I there every week in my childhood, I say:

\[ \text{ń bʊŋà tɪ tsi 'Frignon} \]
\[ 1.SG.SUBJ.GRP1 PST IMPF go Frignon \]
\[ ‘I (regularly) went to Frignion long ago.’ \]

(85) Situation: My friend is looking at a courtyard that just looks terrible, I have clearly not swept in awhile. I used to sweep often, but I have been sick for a few months now and I just cannot sweep since I became ill, so I say:

\[ \text{ń bʊŋà tɪ 'fēr} \]
\[ 1.SG.SUBJ.GRP1 PST IMPF sweep \]
\[ ‘I (regularly) swept long ago.’ \]
The utterances in (84) and (85) are not acceptable if the speaker still regularly goes to Frignion, or still regularly sweeps her courtyard.

As with the [tɪ]-marked clauses with stative predicates discussed in Chapter 3, it appears that clauses with stative predicates that are marked with both [bʊŋà] and [tɪ] can only have habitual aspectual interpretation. And additionally, the repeated instances of the eventuality must have stopped occurring long before the utterance time, as in (86):

(86) Situation: Youssouf is very poor. When he was younger, his brother in Europe would send him money every January, so he would have money in January every year. His brother died a few years ago, though, so now he no longer has any money at all. In telling a friend about his life, Youssouf could say:

\[
\begin{align*}
\text{ń } & \quad \text{bʊŋà tì wòdà gl-tání jòfò} \\
1.\text{SG.SUBJGRP} & \quad \text{PST IMPF have CL.D-money CL.B.white.person} \\
á-ŋɔ & \quad \text{bà-sibákà!' ni} \\
\text{CL.Ǝ.POSS-month 3.SG.POSS-beginning in} & \quad \text{‘I would have money in January.’}
\end{align*}
\]

This sentence would be unacceptable if Youssouf were still regularly receiving money in January.

It appears, then, that clauses marked with both [bʊŋà] and [tɪ] behave just as expected, given the generalizations about [tɪ]-marked clauses presented in Chapter 3 and the generalizations about [bʊŋà]-marked clauses discussed above.

Also, as briefly mentioned above, it is also possible for both [ʧèé] and [bʊŋà] to be used in the same clause. An example is given in (87):

(87) Situation: You are helping your friend Idrissou build a house. He is surprised that you are so good at building. The reason you are so good is because you previously built a house for yourself, but you no longer own that house because the government demolished it to build a highway. You tell Idrissou:

\[
\begin{align*}
\text{ń } & \quad \text{ʧèé bʊŋà tsò ụ-kú} \\
1.\text{SG.SUBJGRP} & \quad \text{PERF PST build CL.F-room} \\
\text{‘I have built a house long ago.’}
\end{align*}
\]
For the utterance in (87) to be acceptable, it is crucial to my consultants that the speaker not own the house any more (either because it was destroyed or because he sold it to someone else). It seems, then, that the presence of [bɔŋə] makes explicit the fact that the speaker’s previous act of house-building was long in the past.

One important fact about the example in (87) is that [bɔŋə] must occur before [ʧɛɛ] in the linear order of the sentence. That is, the string *[n bɔŋə ʧɛɛ tsɔ ɪkʊ] is not a grammatical sentence of Anii. The fact that [bɔŋə] occurs between two aspect markers may add weight to the supposition that it is not a tense under some syntactic theories (see Julien 2002 for extensive discussion of this issue). However, this linear order may also have some relation to the fact that both [bɔŋə] and [ʧɛɛ] may have historically been verb stems in their own right in these constructions, instead of being grammatical markers, while there is no evidence that [tɪ] was such a stem. Evidence for this claim includes the tonal effects that both [bɔŋə] and [ʧɛɛ] have on following verb stems (but [tɪ] does not), which look similar to tone effects on some verb concatenation constructions that have been noted. This issue is discussed further in Chapter 7 (mostly in Section 7.1), where some phonological arguments for this type of analysis are given.

There are also some examples that were offered during elicitation sessions of clauses marked with [bɔŋə], [ʧɛɛ] and [tɪ]. One such example is given in (88):

(88) Situation: I went to Frignion regularly long before he met my friend, and still go regularly. My friend does not know this and asks me if I have ever been to Frignion. I answer:

\[
\begin{align*}
\text{ŋ} & \quad \text{ʧɛɛ} \quad \text{bɔŋə} \quad \text{tɪ} \\
\text{1.SG.SUBJ.GRP1} & \quad \text{PERF} \quad \text{PST} \quad \text{IMPF} \quad \text{go} \quad \text{Frignion} \quad \text{ever} \quad \text{and} \quad \text{1.PL.SUBJ.GRP1} \quad \text{TAM} \\
\text{á} & \quad \text{jʊ} \quad \text{âti-bà-wòf} \\
\text{INORD} & \quad \text{know} \quad \text{1.PL.POSS-CL.Y-friends} \\
\text{‘I went to Frignion often long before we were friends.’}
\end{align*}
\]

The utterance in (88) can be used whether or not the speaker continues to go to Frignion regularly. That is, both continuative and non-continuative readings are possible here.

The example in (89), illustrates that clauses marked with [bɔŋə], [ʧɛɛ] and [tɪ] can also have episodic imperfective aspectual reference. In fact, (89) shows that, as with the
clauses marked only with [tɨ] discussed in Chapter 3, the same clause can have either habitual or episodic imperfective aspectual reference, depending on context. (89a) illustrates an episodic imperfective interpretation of the clause, and (89b) illustrates a habitual interpretation:

(89) a. Situation: You are helping your friend Idrissou build a house. He is surprised that you are so good at building. The reason you are so good is because many years ago, you started to build a house for yourself (though you did not finish at that time). You tell Idrissou:

\[ \text{ngē bōŋà tì tsà ŋ-kú} \]

1.SG.SUBJ.GRP1 PERF PST IMPF build CL.F-room

‘I was building a house long ago.’

b. Situation: You are helping your friend Idrissou build a house. He is surprised that you are so good at building. The reason you are so good is because you used to be a mason and regularly built houses. You tell Idrissou:

\[ \text{ngē bōŋà tì tsà ŋ-kú} \]

1.SG.SUBJ.GRP1 PERF PST IMPF build CL.F-room

‘I used to build houses long ago.’

While more data is needed to fully understand these multiply-marked clauses, this section has shown that they exist, and provided some indication as to their possible meanings.

4.2.3 Formal Analysis of [bōŋà]

The data presented above illustrated that [bōŋà] is a marker which is used when the eventuality time of a given clause precedes the utterance time, and that [bōŋà] is not a past tense or an aspect marker. The empirical generalization that can be drawn from this data is that [bōŋà] is a far-past TRM.

In his analysis of TRMs in Gĩkũyũ, Cable (2013) proposed formal semantic definitions for those markers. According to Cable (2013), Gĩkũyũ has an ‘immediate past’ marker, which is used with very recent events, a ‘current past’ marker, which is used for events that occurred within a day of the utterance time, a ‘near past’ marker, which is generally used when an event occurred approximately two days before the utterance time, and a ‘remote past’ which is generally used when an event occurred longer than two days.
before the utterance time. A key difference, then, between Anii and Gĩkũyũ, is that Gĩkũyũ has multiple TRMs, while Anii only has one. There are some issues surrounding the reported usage of the Gĩkũyũ past TRMs, related to which form is used when there is uncertainty about when a given event occurred. Since Anii only has one TRM, these issues are not relevant to the analysis of [bōñà] and will not be discussed further here. Setting aside those issues, however, Cable’s analysis will be used as the basis for the analysis of proposed below.

To exemplify the type of analysis that Cable (2013) proposes for TRMs in Gĩkũyũ, I will summarize his analysis of the marker he terms the ‘near past’, since this marker will be the most useful in developing an analysis of [bōñà]. The first step Cable proposes for this analysis is the definition of an interval he refers to as REC. This definition (taken from Cable 2013:35) is given in (90):

(90) REC(t) is a function from temporal intervals to temporal intervals. [It] maps [the] interval t to an interval [t’... t’’], where t’<t and lies before the day surrounding t, and t’’ is the endpoint of the day surrounding t.

   Illustration:
   REC(‘12 PM; 5/31/12’) = [‘3 PM; 5/27/12’ ... ‘11:59 PM; 5/31/12’]

(90) says that REC is a function that maps an interval t to an interval that begins on the day before the day surrounding t and whose final subinterval is the end of the day surrounding t.

Given this definition of REC, Cable then defines the meaning of the ‘near past’ TRM in Gĩkũyũ, which he glosses as NRP. Recall that this marker denotes the fact that the eventuality denoted by an NRP-marked utterance occurred approximately two days before the utterance time. Cable’s (2013: 36) definition for NRP is given in (91) below.

For analytical consistency, his proposed meaning of NRP is translated into the framework used in this work, using Cable’s REC function. Note that the symbol ∞ refers to temporal overlap here, following Cable. In (91), d is a variable ranging over eventualities, P is a function from eventualities to truth values, τ is a function from intervals to truth values, and t_u is a variable referring to the contextually-defined utterance time:
(91) \[ \text{NRP} = \left[ \lambda P_{<e,t} : [\exists d_{<e} [P(d) \land \tau(e) \land \text{REC}(t_o)]] \right] \]

(91) means that in any given utterance marked with NRP, the eventuality time of the eventuality denoted by that utterance will overlap with an interval that begins on the day before that containing the utterance time and does not continue past the day on which the utterance was spoken. The fact that this definition includes the possibility that the eventuality denoted by a given NRP-marked utterance occurred less than two days ago is necessary to explain the use of the near past in Gĩkũyũ in cases where a speaker is not certain if an event occurred one or two days ago.

Given the compositional analysis that has thus far been built up for Anii, there are some ways in which (91) needs to be modified for it to be an accurate translation of the meaning of [bʊŋà]. The most obvious change is that some interval other than REC has to be defined, given that [bʊŋà] has a different meaning from NRP. Additionally, since (91) is not of the right type to be integrated into the analysis as it has been developed thus far. For the analysis developed here, the translation of [bʊŋà] must be of type \(<<e,t><e,t>>\), so that it can compose with Aktionsart markers and aspect markers, since [bʊŋà]-marked clauses can also contain other markers.

The empirical generalization being accounted for here is that [bʊŋà] denotes a relationship between the eventuality time of the eventuality denoted by a given clause, and the utterance time of that clause. Specifically, it seems that the eventuality time precedes the utterance time by at least three weeks or so. Recall, however, that the exact amount of time that needs to pass between the eventuality time and the utterance time in a [bʊŋà]-marked clause may depend on the meaning of the predicate, meaning the cut-off of three weeks is not a hard and fast cut-off, though it will be used here for convenience. The first step in proposing an analysis of [bʊŋà], then, is to define an interval whose final subinterval precedes the UT by at least three weeks.\footnote{Another option is to follow Bochnak and Klecha (2014) and analyze TRMs like gradable adjectives. I will not pursue this type of analysis here because I have not systematically analyzed the behavior of different predicates. This type of approach may, however, be a fruitful direction of future research on the interpretation of [bʊŋà].} I will therefore define an interval FPST, as in (92), where \(t\) and \(i\) are variables ranging over intervals:
FPST\( (t, t') \) is true at \(<\omega, i>\) iff \( t < t' \) by at least three weeks\(^{89}\)

Using the definition of FPST proposed above, then, and based on Cable’s (2013) definitions of Gikuyû TRMs, a possible translation for the marker [bɔŋà] is in (93), where \( d \) is a variable ranging over eventualities and \( t_u \) is a contextually defined variable (ranging over intervals) that represents the utterance time:

\[
[bɔŋà] = [\lambda P_{<\mathcal{E},t>} \lambda d_{<\mathcal{E}>} \exists t [P(d) \land \tau(d) \subset t \land \text{FPST}(t, t_u)]]
\]

Based on this translation, [bɔŋà] predicts that for a given predicate of eventualities \( P \) and an eventuality \( d \), the predicate applies to that eventuality, and the eventuality time of that predicate is included in an interval \( (t) \) that precedes the utterance time \( (t_u) \) of the [bɔŋà]-marked clause by at least three weeks.

Note that the definition in (93) is of type \(<<\mathcal{E},t>,<\mathcal{E},t>>\), and it composes with a clause radical, resulting in an \(<\mathcal{E},t>\) entity to which an Aktionsart marker (or imperfective marker) would be expected to compose. Because [bɔŋà], as a TRM, constrains the eventuality time, it must apply to an \(<\mathcal{E},t>\) predicate. The presence of the Aktionsart marker is also assumed to be necessary, because clauses marked with [bɔŋà] and no other overt markers do exhibit differences in meaning—particularly the fact that (past) continuative readings are possible in such clauses with stative predicates (as shown in e.g. (75) above, but not with eventive predicates. This means that in order for the types to compose properly, [bɔŋà] must apply to the clause radical before AKT, as illustrated in (94):

\[
\text{(94) \quad (AKT}_{<\mathcal{E},d},d_{<\mathcal{E},d>})(bɔŋà}_{<\mathcal{E},p}_{<\mathcal{E},d>}(\text{Clause Radical}_{<\mathcal{E},d}\})
\]

\(^{89}\) Of course, in reality, the exact amount of time by which \( i' < t_u \) is not that specific. The cut-off of three weeks was chosen here as an approximation, but as discussed above, the exact cut-off time for the use of [bɔŋà] varies somewhat from situation to situation.
Given this order of application, the application of [bɔŋə] to a clause radical must preserve the distinction between events and states so that the proper version of AKT can then apply. I therefore assume that [bɔŋə] is sensitive to the Aktionsart of the clause radical, so that if the clause radical is eventive (i.e. denotes a set of events), then the translation of [bɔŋə] will use the same variables, and thus the combination of [bɔŋə] and a clause radical will remain eventive. If the clause radical is stative (i.e. denotes a set of states), then that stativity will be preserved through the application of [bɔŋə].

I also assume that after [bɔŋə] and AKT have both applied, NONFUT also applies, as a last step.\(^90\) Example (94) illustrates the derivation of the meaning of the sentence 'I went to Frignion long ago’. Note that this translation assumes that clauses marked only with [bɔŋə] must contain Aktionsart markers:

\[(94)\]
\[
\begin{align*}
\text{a. } & \lambda P_{\text{go.to.Frignion}}(e', sp) & \rightarrow \lambda e' \rightarrow \lambda t \rightarrow P(e') \land \tau(e') \subseteq t \land \text{FPST}(t, t_u) ) \rightarrow \lambda e' \rightarrow \lambda t \rightarrow \lambda \text{go.to.Frignion}'(e', sp) ) \\
\text{b. } & \lambda i_{\text{go.to.Frignion}}(e', sp) & \rightarrow \lambda e' \rightarrow \lambda t \rightarrow \lambda \text{go.to.Frignion}'(e', sp) ) \\
\text{c. } & \lambda i_{\text{go.to.Frignion}}(e', sp) & \rightarrow \lambda e' \rightarrow \lambda t \rightarrow \lambda \text{go.to.Frignion}'(e', sp) )
\end{align*}
\]

This translation is predicted to be true if and only if there is an event of the speaker going to Frignion such that the eventuality time of that event is included in an interval \(t\) that precedes the utterance time \(t_u\) by at least 3 weeks, and is also included in the topic time (which must precede or equal the utterance time). This is the desired result, since [bɔŋə]-marked clauses with eventive predicates that are not marked with any other marker do, in fact, have perfective aspectual reference, as shown above (see e.g. (57) above).

\(^90\) Strictly speaking, the presence of NONFUT is redundant in this case because the clauses would have past tense with or without NONFUT. I assume it is present here because the analysis requires that \(i\) be constrained in some way, and it is simplest to assume that this is done in the same way for every non-future clause analyzed here. There are other ways to analyze this, however, and it is possible that NONFUT is not actually present. For simplicity’s sake, however, I assume it is present, since there is no evidence to the contrary.
Additionally, the tense marking here (and in the following derivation) is redundant, since if the situation time and the topic time overlap, and the situation time precedes the utterance time by at least three weeks, than the topic time must necessarily also precede the utterance time, whether the tense marking is there or not. Nevertheless, since the tense marking is assumed to be present on all non-future clauses, I assume it is present here.

With clauses with stative predicates, the derivation is similar, but given the different Aktionsart marker being used, the result has one difference, i.e. that the eventuality time includes the topic time—as expected, since these clauses can have continuative interpretations, while eventive clauses cannot. The derivation in (95) is for the sentence /ń bʊŋa da afál/, ‘I was at home long ago’:

(95) a. $\left[ \text{bʊŋa}<\text{ç<ç,ç>}(\text{ń dà åfál})<\text{ç,ç}> \right] = \left[ \left( \lambda P_{<\text{ç},<\text{ç}>} \lambda s'_{<\text{ç}>} \exists t [P(s') \land \tau(s') \subset t \land \text{FPST}(t, t_a)] \right) (\lambda s \text{[be.at.home}('s', sp)] \right]$

b. $\left[ \text{AKT}<\text{ç<ç,ç>}(\text{bʊŋa}<\text{ç<ç,ç>}(\text{ń dà åfál})<\text{ç,ç}>) \right] = \left[ \left( \lambda P_{<\text{ç},<\text{ç}>} \lambda i_{<\text{ç}>} \exists s'' [P(s'') \land \tau(s'') \supset i] \right) (\lambda s'_{<\text{ç}>} \exists t [\text{be.at.home}('s', sp) \land \tau(s') \subset t \land \text{FPST}(t, t_a)] \right]$

c. $\left[ \text{NONFUT}<\text{ç} (\text{AKT}<\text{ç<ç,ç>}(\text{bʊŋa}<\text{ç<ç,ç>}(\text{ń dà åfál})<\text{ç,ç}>)) \right] = \left[ \exists s'' \exists t [\text{be.at.home}('s', sp) \land \tau(s'') \subset t \land \text{FPST}(t, t_a) \land \tau(s'') \supset i \right]$

This translation is predicted to be true if and only if there is a state of the speaker being at home such that the eventuality time of that state is included in a given interval $(t)$ that precedes the utterance time $(t_u)$ by at least 3 weeks, and the eventuality time also includes or is equal to the topic time (which precedes or is equal to the utterance time). Note that the difference in aspect here does not affect the interpretation that the state in [bʊŋa]-marked clauses with stative predicates cannot hold at the utterance time. Even though the eventuality time in the derivation in (95) includes the topic time, it still must completely precede the utterance time by at least three weeks.

This section has illustrated the analysis of [bʊŋa], and how [bʊŋa] can combine with other markers. It also shows that the analysis proposed here, including Aktionsart
markers and the proposed definition of [bɔŋà] as a TRM can accurately account for the meanings of [bɔŋà]-marked clauses. The following section provides a brief discussion of further implications arising from the claim that [bɔŋà] is a TRM, not a tense or aspect marker.

4.2.4 Conclusions Regarding [bɔŋà]

Until recently, there has been very little investigation as to the exact nature of past markers that have been found in a wide variety of languages (including languages like Gĩkũyũ with multiple past markers, and languages like Anii with only one). That is, these markers have been assumed to be tenses.

If the analysis of [bɔŋà] presented in this dissertation is correct, then it suggests that it is important to look more carefully at many markers that may have previously been assumed to be tenses, to see if they may in fact be TRMs, and to continue investigating under-studied languages with the possibility of TRMs in mind. While no language other than Anii has yet been shown to have only one TRM, it seems likely that there may be other languages of this type. The further investigation of far-past markers, both in previously described and not yet described languages, for the purpose of determining whether they are tenses or TRMs is a fruitful avenue for future research.

In the following section, I will present what data is available on three markers that are present in the texts that were analyzed for this dissertation, and are also important for the tonal analysis in the following chapters. The analysis of these markers is not yet complete, but some idea of their meaning is necessary to understand the remainder of this dissertation.

4.3 The Marker [tî]

A marker used in many Anii clauses is the marker [tî] (with a high tone, not to be confused with the imperfective marker [tii]). What all [tî]-marked clauses have in common is that they refer to events which have some kind of relationship with previous events, generally denoting a culmination of those events. The nature of this relationship between [tî]-marked clauses and previous or expected events will be explored in this
section. Since there is no evidence that Aktionsarten affect the use or meaning of [tî], the clauses with predicates of different Aktionsarten will not be discussed separately.

A typical example of the use of [tî] in the texts analyzed for this project is in (96), from a story told by Nouhoum BABABODY SALIFOU to Hakimou ATTI KALAM:

(96) Situation: The first sentence of the story says that Nouhoum was in school in his childhood. This is the second sentence:

\[
\begin{align*}
\text{nì lè le sùkùrù tòó ñ-kù ñ-dàŋ} & \quad \text{hài à} \\
\text{1.SG.SUBJ.GRP I do \ CL.B.school take \ CL.F-room AGR.CL.F-one until INORD} \\
\text{tî 1 tsìm 1 kòlòdjà ká-kù i-nàŋ} & \\
\text{TAM sting\textsuperscript{91} CL.B.CEG\textsuperscript{92} POSS.CL.T-room AGR.CL.T-four} \\
\end{align*}
\]

‘I went to school from the first class (year) until I eventually hit the fourth class of CEG.’

In (96), [tî] is translated as ‘eventually’—the idea is that the speaker started in the first year of school, and then finally made it all the way to the fourth year of CEG. In fact, in many cases, a translation of [tî] as ‘finally’ would also be appropriate.

Another example of a [tî]-marked clause is given in (97), from a story told by Hakimou ATTI KALAM to Nouhoum BABABODY SALIFOU:

(97) Situation: The story is about how one could be a seller of cooking oil. He previously explained how one would go to a big city and buy a large quantity of oil and bring it back. Then, he explained:

\[
\begin{align*}
\text{jìŋsmò àkì 1 tî jàlì bìdòŋ ni.} & \\
\text{2.SG.FOC TAM sell \ CL.B.container in} \\
\text{now 2.SG.FOC TAM sell \ CL.B.container in} \\
\end{align*}
\]

‘When you bring your [oil] to town, now you eventually sell (it) by container.’

\textsuperscript{91} Or cut, as in cut down a tree.

\textsuperscript{92} CEG is Collège d'Enseignement Générale, the equivalent of middle school and high school in the US. The French names for the classes mentioned are CI (Classe Initiale) for the first year of CEG, and 3\textsuperscript{ème} (3rd) for the fourth year of CEG.

\textsuperscript{93} The marker [tà] is often translated as ‘if’ or ‘when’, and may be a marker of some kind of epistemic modality, though a careful investigation of the uses of [tà] has not yet been carried out. It will be discussed further in Chapter 7.

\textsuperscript{94} The marker [jê] may also be a modality marker, it clearly behaves tonally like a TAM of some sort, and may be historically related to the verb stem [jê], ‘give’, but I have no clear hypothesis at this time as to its meaning.
The bolded clause in (97) is the culmination of a list of things that a would-be cooking-oil salesman needs to do in order to sell oil, and [tɪ] is only found in the final clause of that list.

An elicited example of a [tɪ]-marked clause is provided in (98) below.

(98) Situation: Two nomad women go down to the stream with the intention of bathing. One of them, Aicha, jumps right in, but it is pretty cold, so the other hesitates. Aicha finishes her bath and leaves before her friend even jumps in. Later on, they see each other again, and have the following conversation:

Question: ṓ ! tì dʒim bù-tó ! nì àà
2.SG.SUBJ.GRP2 TAM jump CL.G-water in QUEST ‘Did you eventually jump into the water?’

Answer: Ꚋŋ, ŋ ! tì dʒim bù-tó ! nì
yes 1.SG.SUBJ.GRP2 TAM jump CL.G.water in ‘Yes, I eventually jumped into the water.’

What is centrally important to the felicity of this conversation is that the two women have a previous point of reference, i.e. they both already knew that Aicha’s friend was thinking about jumping in the water earlier that day. If there is no previous point of reference (i.e. nothing for the jumping in the water to be the culmination of), then neither the question nor the answer can be marked with [tɪ]:

(99) Situation: Aicha’s friend is wondering if she happened to bathe yesterday (she always bathes in the river), so the following exchange takes place:

Question: ṓ ! tì dʒim bù-tó ! nì àà
2.SG.SUBJ.GRP2 TAM jump CL.G-water in QUEST ‘Did you jump into the water?’

Acceptable: ū tì dʒim bù-tó ! nì àà
2.SG.SUBJ.GRP2 jump CL.G-water in QUEST ‘Did you eventually jump into the water?’

Answer: Ꚋŋ, ņ ! tì dʒim bù-tó ! nì
yes 1.SG.SUBJ.GRP2 TAM jump CL.G.water in ‘Yes, I jumped into the water.’

95 An unmarked clause can also be used as the answer here, but is not preferred.
Acceptable:  ɲɲ, ɲ dʒim bù-tó Ɂ ni
yes 1.SG.SUBJ.GRP2 jump CL.G-water in
‘Yes, I jumped into the water.’

Thus, when there is nothing for the water-jumping to be the culmination of, [tì] is not acceptable.

The examples in (100a), (101a) and (102a) provide further examples of situations where the use of [tì] is appropriate, and (100b), (101b) and (102b) exemplify situations in which [tì] cannot be acceptably used. In each case, the difference is whether a previous event or conversation led up to the occurrence of the eventuality discussed in the example. When there was such a previous event or conversation, [tì] can be used. When there is not, [tì] is unacceptable:

(100)a. Situation: Yesterday, Nouhoum and Karim were traveling together on their motos. A little while into the trip, Karim almost fell, but recovered himself. Later in the trip, the two got separated, and Nouhoum arrived at the destination well before Karim because Karim actually did fall during the time when they were separated. When they see each other again, Nouhoum asks Karim what took him so long, and Karim says:

#ń  ! tì fidá
1.SG.SUBJ.GRP1 TAM fall
‘I eventually fell.’

b. Situation: Yesterday, Nouhoum and Karim were traveling together on their motos. The two got separated, and Nouhoum arrived at the destination well before Karim because Karim fell while they were separated. Nouhoum asks Karim what took him so long, and Karim says:

ń  ! tì fidá
1.SG.SUBJ.GRP1 TAM fall
‘I fell.’

Acceptable response:
ń fidá
1.SG.SUBJ.GRP1 fall
‘I fell.’
(101)a. Situation: Your friend knew you were planning to clean at 1 PM, and asks if you actually did. Since you had other stuff to do, you did not manage to clean until 3 PM. It is now 6 PM. You answer:

\[
\text{bʊ-ŋkɔ bù-rìù ná, ŋí ti pémpɛŋɛ́}
\]

\text{CL.ŋ-hours AGR.CL.3-three CL.ŋ FOC 1.SG.SUBJ.GRP1 TAM clean}

‘I eventually cleaned at 3 PM.’

b. Situation: Your friend is wondering if you cleaned your house earlier today, so she asks. You answer:

\[
#bʊ-ŋkɔ bù-rìù ná, ŋí ti pémpɛŋɛ́
\]

\text{CL.ŋ-hours AGR.CL.3-three CL.ŋ FOC 1.SG.SUBJ.GRP1 TAM clean}

Intended Interpretation: ‘I cleaned at 3 PM.’

Acceptable response:

\[
bʊ-ŋkɔ bù-rìù ná, ŋí pémpɛŋɛ́
\]

\text{CL.ŋ-hours AGR.CL.3-three CL.ŋ FOC 1.SG.SUBJ.GRP1 clean}

‘I cleaned at 3 PM.’

(102)a. Situation: Adamatou and Falilatou went to the well together this morning. When they got back from that first trip, they were both dry, they had not spilled any water on themselves. Falilatou went back for more water, and this time (possibly because she did not have her friend to help her get the bowl of water onto her head), she spilled water on herself. When she gets back to the compound, Adamatou (who is inside the house) calls out to ask whether Falilatou is still dry. Falilatou answers:

\[
ŋí ti ŋɛkϕé
\]

\text{1.SG.SUBJ.GRP1 TAM be.wet}

‘I am finally wet.’

b. Situation: Falilatou has just gotten back from going to the well. When she gets back to the compound, Adamatou (who is inside the house) calls out to ask whether Falilatou is dry, or whether she got wet. Falilatou answers:

\[
#ŋí ti ŋɛkϕé
\]

\text{1.SG.SUBJ.GRP1 TAM be.wet}

Intended Interpretation: ‘I am finally wet.’

Acceptable response:

\[
ŋí ŋɛkϕé
\]

\text{1.SG.SUBJ.GRP1 be.wet}

‘I am finally wet.’

All the examples of [tí]-marked clauses given so far have had past temporal reference. I have not yet been able to elicit any data with present temporal reference where [tí] was felicitously used, but clauses with future temporal reference that are marked with [tí] are common in my data.
Example (103) below is a typical situation in which a clause marked with [tᵢ] would be acceptable with future temporal reference:

(103) Situation: I already have a house, and have just built myself another one. My friend asks me what I plan on doing with my old house now that I have a new one. I say:

\[
\begin{align*}
\text{n t'i mā t'jālâ å'gá-fálâ} & & \text{sell 1.SG.POSS-CL.C-house} \\
i-ŋò i-kölöm nî & & \text{CL.U-month AGR.CL.U-six in} \\
\end{align*}
\]

‘I will eventually sell my house in (about) six months.’

In (103), the speaker is planning to sell the house, but not immediately. The [tᵢ] is acceptable here because there will be more events between this utterance and the eventual act of selling the house—in this case, getting ready to sell the house is a process that will culminate in the sale.

Another example with future temporal reference is given in (104):

(104) Situation: My brother, who lives in a different town, is on his way to visit me. He had been planning on arriving around 2 PM, he is calling me now (at noon) to say he will arrive later than that. He says:

\[
\begin{align*}
\text{n t'i pi gitènʃiè bù-kòkò} & & \text{come CL.Đ.afternoon CL.U-hours} \\
bù-riù & & \text{CL.Đ-three} \\
\end{align*}
\]

‘I will eventually come at 3:00 PM.’

A few consultants suggested that a situation where the brother’s arrival was to occur on the following day would be better. It is not clear yet why this would be so, but based on discussions with many consultants, it may be that the use of [tᵢ] in clauses with future temporal reference has an implicature that the eventuality denoted by a [tᵢ]-marked clause will occur relatively far in the future. The far-future meaning, however, is not an integral part of the meaning of [tᵢ], given the general acceptability of examples like (104).

A similar example is in (105):
Situation: A friend wants to come visit you at home this afternoon, so you want to tell her the times when you will be home (now it is 10 AM). You had originally told her you'd be home at 1 PM, but plans have changed:

\[\begin{align*}
\text{\text{t}i\text{\text{m}}\text{\text{a}}\text{\text{d}}\text{\text{a}}\text{\text{t}}\text{\text{a}}\text{\text{t}}} & \text{\text{t}o\text{\text{t}}}\text{\text{h}}\text{\text{e}}\text{\text{1}}\text{\text{n}}\text{\text{P}}
\end{align*}\]

This clause would not be acceptable if the speaker had not talked to her friend about a proposed time that was now changing, as shown in (106):

(106) Situation: A friend wants to come visit you at home this afternoon, so you tell her when you will be home:

\[\begin{align*}
\text{\text{t}i\text{\text{d}}\text{\text{a}}\text{\text{t}}} & \text{\text{t}o\text{\text{t}}}\text{\text{h}}\text{\text{e}}\text{\text{1}}\text{\text{n}}\text{\text{P}}
\end{align*}\]

Acceptable response:

\[\begin{align*}
\text{\text{t}i\text{\text{d}}\text{\text{a}}\text{\text{t}}} & \text{\text{t}o\text{\text{t}}}\text{\text{h}}\text{\text{e}}\text{\text{1}}\text{\text{n}}\text{\text{P}}
\end{align*}\]

Thus, it seems like there are two related types of meanings for [t]i]-marked clauses in the future. One type of [t]i]-marked clause denotes an eventuality that will be true in the future only after a series of other events occur, such as the house-selling example in (104). Another such example is in (107):

(107) Situation: A five-year-old child is talking to his parents about what he wants to do when he grows up. He says:

\[\begin{align*}
\text{\text{t}i\text{\text{d}}\text{\text{a}}\text{\text{t}}} & \text{\text{t}o\text{\text{t}}}\text{\text{h}}\text{\text{e}}\text{\text{1}}\text{\text{n}}\text{\text{P}}
\end{align*}\]

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Compare (107) with (108), in which the eventuality being discussed will occur more immediately, without expected intervening events:

(108) Situation: A five-year-old child is talking to his parents about what he plans to do tomorrow. He sometimes helps his father in his father’s cloth-selling shop, so he says:

#ǹ tì má tì jàlá ọ-kúrò
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 TAM sell CL.T-cloths
‘I am eventually going to sell cloth.’

Acceptable version:
ǹ tì má jàlá ọ-kúrò
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 sell CL.T-cloths
‘I am going to sell cloth.’

The second type of [tì]-marked clause with future temporal reference is that discussing a change of plans, as exemplified in (109):

(109) Situation: Nouhoum is going to go paste up a new edition of the Anii-language magazine, GọGọ, in some of the Anii villages. He had originally planned to be in Nagayile at 2 PM, and had told the local literacy teacher that plan. However, he is running late, so he calls her back with a change of plans:

ǹ tì má tì pàrà bọ-kọkọ̀ bù-riù
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 TAM paste CL.Ọ-hours AGR.CL.Ọ-three
‘I will eventually paste at three.’

Intended Interpretation: ‘I will paste at three.’

Acceptable response:
ǹ tì má pàrà bọ-kọkọ̀ bù-riù
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 paste CL.Ọ-hours AGR.CL.Ọ-three
‘I will paste at three.’

A [tì]-marked clause cannot be used when discussing plans that have not been rescheduled, as shown in (110):

(110) Situation: Nouhoum is going to go paste up a new edition of the Anii-language magazine, GọGọ, in some of the Anii villages. He calls a local literacy teacher to let her know his plans. She asks when he will paste in her village, and he says:

#ǹ tì má tì pàrà bọ-kọkọ̀ bù-riù
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 TAM paste CL.Ọ-hours AGR.CL.Ọ-three

Intended Interpretation: ‘I will paste at three.’

Acceptable response:
ǹ tì má pàrà bọ-kọkọ̀ bù-riù
1.SG.SUBJ.GRP1 FUT 1.SG.SUBJ.GRP2 paste CL.Ọ-hours AGR.CL.Ọ-three
‘I will paste at three.’
The examples in this section have illustrated that the meaning of the marker [tɩ] is related to culmination. It can only be used in cases where the eventuality denoted by a [tɩ]-marked clause is the expected realization of a series of (past or future) events, or the culmination of a plan that has (or had) been previously discussed.

4.4 The Marker [jè]

The marker [jè] is used in situations where the speaker is insisting that the eventuality denoted by a [jè]-marked clause has occurred or will occur, often (perhaps always) despite hearers’ objections to the contrary—or perhaps counter to the hearers’ expectations. As will be illustrated below, [jè] is compatible with both past and future temporal reference, and many types of aspectual reference—it can be combined with a number of the markers presented above.

An example of the use of [jè] with an event that occurred in the past is in (111):

(111) Situation: There was a break-in in a house with a lot of people present. The police ask everyone who was there to come in and give a statement. You were there, so you go to the station, but the other witnesses insist you were not there at the time of the robbery. You respond:

ñ jè kpá
1.SG.SUBJ.GRP1 TAM arrive
‘I actually did arrive [there].’

In this case, the [jè] is used to strengthen the statement that the speaker actually did go to the house, even though others are insisting that she was not there. Another example of the use of [jè] is in (112):

(112) Situation: This morning I wanted to take the bus to Cotonou. I saw the bus at the stop, and I ran to grab my luggage, and get on the bus, but the bus left without me. I am complaining to a friend that I missed the bus despite my best efforts. I say:

ñ jè jfũw
1.SG.SUBJ.GRP1 TAM run
‘I even ran!’
[jè] is used in (112) to indicate that the speaker did everything he could to make the bus.
As in the example in (111), the use of [jè] in (112) strengthens the statement being made,
making it very clear that the eventuality denoted by the clause really did occur.

Clauses marked with [jè] generally cannot be used in response to neutral
comments—only to insist that something did happen in response to a statement that it did
not. For example, compare (113), where [jè] is acceptable, and (114) where it is not:

(113) Situation: Someone told you to sweep the courtyard at 7 AM, and you obeyed.
At 8 AM, the person comes back, looks around and the courtyard still does not
look very swept, so she asks you why you did not sweep. You answer:

ń jè jër
1.SG.SUBJ.GRP1 TAM sweep
‘I actually did sweep.’

(114) Situation: A friend stops by your house. She asks if you swept your courtyard this
morning, just out of curiosity. You answer:

#ń jè jër
1.SG.SUBJ.GRP1 TAM sweep
‘I actually did sweep.’

Acceptable response:

ń jè jër
1.SG.SUBJ.GRP1 TAM sweep
‘I swept.’

The example in (113) illustrates again the speaker’s insistence that an event occurred,
against the disbelief of the hearer. Since there is no disbelief to be contradicted in (114),
the use of [jè] is not acceptable.

With stative clauses, the interpretation of [jè] does not change. Observe the
examples in (115) and (116):

(115) Situation: Mouniratou is a student at school, and her father is rich. She is
supposed to bring in money for books, but keeps on not doing it, and not telling
her parents about the fees that are due. Finally, her teacher goes to her father and
tells him that the fees are long overdue. The father could say:

ń jè wódá gi-táñí
1.SG.SUBJ.GRP1 TAM have CL-D-money
‘I actually have the money.’
(116) Situation: Your friend Rafiatou sent a child to your house yesterday afternoon to find out if you were there. The child kind of looked around, but not very hard—you were there but he did not see you. Later, Rafiatou sees you in town and tells you that she sent someone to look for you yesterday afternoon. You could say:

\[
\begin{align*}
\text{ñ jè dà àfál} \\
1.\text{SG.SBJCGRP1 TAM be.there at.home} \\
\text{‘I was actually there.’}
\end{align*}
\]

In (115), the father uses [jè] to indicate that he did in fact have the money, contrary to the expectation of the teacher based on the fact that the school fees had not yet been paid. In the example in (116), the speaker is saying that she was at home even though the child did not see her. That is, she is insisting that she was there despite what her interlocutor had heard. The use of [jè] is not acceptable if the interlocutor did not have such preconceptions about the situation, as shown in (117):

(117) Situation: Your friend Rafiatou was looking around town for you yesterday afternoon, but did not find you in any of the places she looked. She asks you where you were, and you answer:

\[
\begin{align*}
\#\text{ñ jè dà àfál} \\
1.\text{SG.SBJCGRP1 TAM be.there at.home} \\
\text{‘I was actually there.’}
\end{align*}
\]

Acceptable response:

\[
\begin{align*}
\text{ñ dà àfál} \\
1.\text{SG.SBJCGRP1 be.there at.home} \\
\text{‘I was actually there.’}
\end{align*}
\]

[jè]-marked clauses with future temporal reference exhibit the same type of insistence against contradiction, as shown in (118):

(118) Situation: Idrissou wants to build a house on a plot of land he has bought, but one of the people who live next door to the plot is trying to prevent Idrissou from building. Idrissou says to that neighbor:

\[
\begin{align*}
bàà á léé bâi ná, n tí \text{ má jé} \\
ext 2.\text{SG.SBJCGRP2 do how FOC 1.\text{SG.SBJCGRP1 FUT 1.\text{SG.SBJCGRP2 TAM}}}
tsó jù-kú \\
tesú tsè-kú build CL.F-room \\
\text{‘Whatever you do, I will build a house anyway.’}
\end{align*}
\]

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The [jè]-marked clause is acceptable in (118) because the neighbor is putting obstacles in the way of the building of the house. A [jè]-marked clause is considered by consultants to be too strong of a statement if there is no obstacle to be overcome, for example, if Idrissou is merely telling his neighbor his future plans, as in (119):

(119) Situation: Idrissou is talking to his neighbor about his plans for the piece of land he has just bought:

\[
\text{ǹ tì' má jé' tsó ŋ-kú}
\]

1.SG.SUBJ,GRP1 FUT 1.SG.SUBJ,GRP2 TAM build CL.F-room

‘I will build a house anyway.’

Acceptable version:

\[
\text{ǹ tì' má tsó ŋ-kú}
\]

1.SG.SUBJ,GRP1 FUT 1.SG.SUBJ,GRP2 build CL.F-room

‘I will build a house.’

[jè] can also be used in stative clauses with future temporal reference if there is a reason that the state should not hold, but the speaker is insisting that it will, as in (120):

(120) Situation: Nouratou is very sick, and it is contagious. Her husband’s friends are trying to convince him that it is not safe for him to be in the room with her. He answers:

\[
\text{ǹ tì' má jé' dá ŋkáŋ}
\]

1.SG.SUBJ,GRP1 FUT 1.SG.SUBJ,GRP2 TAM be.there inside

‘I will be there anyway.’

One type of [jè]-marked clause that has not yet been discussed in detail is that exemplified by some of the examples already presented in this chapter, specifically the use of [jè]-marked clauses in combination with [ʧèé]-marked clauses. This occurs in examples (12), (29), (31), (42) and (87) above. In all these examples, a [jè]-marked clause is in the same sentence as a [ʧèé]-marked clause. This use of the marker [jè] is exemplified again in (121):
Situation: A friend was expecting you to go to the market yesterday at 4:00. She went at 4:00 and didn’t see you. She asks you if you actually did go to the market at 4:00. You do not know the exact time that you went, but you know you were back home by 4:00, so you say:

\[ \text{ń ʧēḗ Hawaiā́ tsi ná́ lásààri à jè kí} \]

1.SG.SUBJ.GRP1 PERF go with CL.B.4:00 AGR.CL.B TAM hit

‘I had gone when 4:00 hit (i.e. before 4:00).’

In this example, as in the other such examples above, it seems that the use of [jè] conveys insistence regarding the time. The utterance here is unacceptable without [jè], though it is not yet clear why this might be so.

As might be expected, [jè] can also occur in the same clause with some of the other markers that have been discussed in this chapter. For example, clauses marked with both [jè] and [ʧèé] are given in (122) and (123):

(122) Situation: I slept through an important meeting this morning, and am explaining that I tried to prevent that from happening:

\[ \text{ń ʧèé́ fól} \]

1.SG.SUBJ.GRP1 TAM PERF sleep\(^{96}\)

‘I had even gone to bed (early).’

(123) Situation: There is a tree in my courtyard that sheds many leaves. I swept the courtyard in the morning, but by noon, there were leaves all over again. My mother comes over in the afternoon and comments that the courtyard does not look swept. I answer:

\[ \text{ń ʧēḗ jèr amá á-bó ì kòd títá àtsóŋó} \]

1.SG.SUBJ.GRP1 TAM PERF sweep but CL.T-leaf AGR.CL.T again fall again\(^{97}\)

‘I had actually swept, but the leaves fell again.’

Both (122) and (123) have perfect aspectual reference (as expected, since they are marked with the perfect marker), and also exhibit the meaning of [jè] in that the speaker in (122) is insisting that he went to bed early, and the speaker in (123) is insisting that she really did sweep.

\(^{96}\) Or perhaps ‘go to sleep’. See discussion in Chapter 2.

\(^{97}\) Here, [kɔɔ] is some kind of TAM marker indicating repetition, and [àtsóŋó] is the actual adverb meaning ‘again’. A discussion of the marker [kɔɔ] is beyond the scope of this dissertation, so it has been translated as ‘again’ to avoid confusion.
Clauses with stative predicates can also be marked with both [jè] and [ʧēè], as is shown in (124), and in this case a continuative reading is possible (as expected, given that stative clauses are compatible with continuative readings):

(124) Situation: Two friends are talking about a mutual acquaintance, Adam, who has not made much of his life. One says:

\[
á \ jè \ ʧēè \ wōdá \ gi-tání
\]

‘He has even had money (for awhile).’

In (124), [jè] is used because Adam has been rich for awhile, and it would have been expected that he would have done something with that money. Since Adam has instead been behaving like someone with no money, the speaker is remarking on the fact that Adam really does have money despite his behavior.

The marker [jè] can also be present in clauses that are also marked with [bōŋà], as is exemplified in (125), (126) and (127):

(125) Situation: I am driving through a village, and at first do not recognize it. Then, I have an epiphany and say to my friend:

\[
ń \ jè \ bōŋà \ fōl \ ŋkàŋ
\]

‘I even slept there (once) long ago.’

(126) Situation: Amina has a degenerative illness, and now she can barely walk. She is explaining to her daughter that she used to be much healthier:

\[
ń \ jè \ bōŋà \ jèř \ gà-kà
\]

‘I even swept this courtyard long ago.’

(127) Situation: Youssouf used to live at home in his family’s compound, but has been away in another country for ten years. When he comes home, his younger brothers and sisters do not recognize him, so he says:

\[
ń \ jè \ bōŋà \ dà \ àfāl
\]

‘I even lived here long ago.’
One interesting fact to note about [jè] is that it can never be acceptably used in a clause that is also marked with [tì]. That is, my consultants could think of no context in which e.g. [nì jè tì fè̀r] or [nì ’tì jè fè̀r] could be acceptably uttered. This may suggest that there is some incompatibility between the meanings of the two markers. Such a contradiction would be expected, in fact, since [tì] is used in cases where the eventuality in question is expected to occur, since it is the culmination of previous events. In contrast, [jè] is used to insist on an eventuality’s occurrence in spite of expectations to the contrary. Thus, the incompatibility lies in the course of events leading up to the realization of a given eventuality—in [tì]-marked clauses, the course of events naturally and expectedly results in the realization of the eventuality denoted by the clause, while this is not the case for [jè]-marked clauses.

This section has illustrated the use of the marker [jè], and it has been shown that the meaning of [jè] is related to the speaker’s insistence that a given eventuality did or will take place. It is possible that [jè] is in fact a counterexpectational marker, in the sense that using [jè] in a clause acknowledges that what the speaker is saying is counter to what the listener expected to hear. Another possibility is that the meaning of this marker is related to the idea of mirativity (cf. DeLancey 1997, 2001). According to DeLancey (1997, 2001), a mirative marker is a marker indicating that the information being discussed is new or unexpected. It is possible that [jè] has some element of mirativity in its meaning. Future research will provide a clearer picture of the interpretation of [jè], but this section has provided an overview of the uses of [jè] that can serve as a base for such research.

The next section will discuss the imperfective marker [nà], which is an allomorph of the marker [tì] that was discussed above and in the previous chapter.

4.5 The Imperfective Marker [nà]

As was briefly mentioned in Chapter 3, Anii actually has two imperfective markers, which are in complementary distribution, though their temporal and aspectual semantics appear to be identical. One strong determinant as to which marker is used in
which context is the type of focus is present in a given clause. Syntactic structure also seems to have an effect. A full comparison of these markers is beyond the scope of this dissertation, but a brief presentation will be given in this section, which will illustrate the types of contexts in which [nà] is used. These contexts include various types of focus, and certain syntactic structures related to clause subordination.

Compare the sentence in (128) with that in (129). Note that the [+ATR] allophone of [nà] is /nǝ/, just as the [+ATR] allophone of [tī] is /tı/:

(128) Situation: The speaker is answering the question ‘what is the child doing?’

\[\text{ǹ-silá} \quad \text{ǹ-} \quad \text{ń/}^*\text{nà} \quad \text{pì} \quad \text{ń-silá} \quad \text{3.SG.SUBJ,GRP.1 IMPF break CL.F-egg} \]

‘She is breaking an egg.’

(129) Situation: The speaker is answering the question ‘what is the child breaking?’

\[\text{CL.F-egg} \quad \text{FOC.CL.F} \quad \text{3.SG.SBJ,GRP.1 IMPF break} \quad \text{ń-silá} \quad \text{ńd̃i} \quad \text{ń/}^*\text{tī} \quad \text{pì} \]

‘She is breaking an EGG.’

There is no difference in temporal or aspectual reference between (128) and (129), but [tī] must be used in (128) (where [nà] is ungrammatical), while [nà] must be used in (129) (where [tī] is ungrammatical). The only difference is that in (129), the focus is on the object, while (128) has sentence focus. Note that object focus must be obligatorily realized by the presence of an object focus marker (e.g. /ńd̃i/ in (129)), and is optionally realized by fronting of the focused constituent.

Content questions in Anii also have obligatory focus marking (note the marker /nò/ in (130)), and must mark imperfective with [nà], as illustrated in (130):

---

98 I use the term ‘focus’ to refer to pragmatic emphasis on some element of a clause, e.g. ‘subject focus’ is used to emphasize the subject, ‘object focus’ to emphasize the object, etc. The situation in which no element of a clause is singled out is referred to as ‘sentence focus’ (cf. Lambrecht 1994, Skopeteas et al. 2006). For more in-depth discussion on focus and information structure in Anii, see Fiedler (n.d., forthcoming).

99 As will be illustrated below, yes/no questions, where there is no focus marking, use [tī] to mark imperfectivity.
Situation: Two people are beginning a conversation.

a. Question: mō nō 'àkù-ŋónọ  à nà/*ti lé?  
   what FOC 2.SG.POSS.A-elder AGR.CL.A IMPF  do  
   ‘What is your older sibling doing?’

b. Response: à  ti/#nà pèmpèŋe áŋ-kú   
   3.SG.SUBJ.GRP1 IMPF clean 3.SG.POSS.CL.F-room  
   ‘He is cleaning his room.’

In (130a), the object focus marker is obligatory, and [nà] must be used to mark imperfectivity ([tì] is ungrammatical). In (130b), however, there is no focus marking. From context, the pragmatic focus of (130b) is on the verb phrase. The use of [nà] in (130b) would require a subject focus interpretation (as discussed in the next set of examples), and is thus unacceptable as a response to (130a).

In clauses with subject focus, the only grammatical indication that the subject is in focus is the choice of imperfective marker, as shown in (131b) below:

(131)a. Situation: Answering the question ‘what is happening?’  
   à  ti/#nà tsi gù-yá   
   3.SG.SUBJ.GRP1 IMPF go CL.É-market  
   ‘He is going to the market.’

b. Situation: Answering the question ‘who is going to the market?’  
   à  nà/*ti tsi gù-yá   
   3.SG.SUBJ.GRP1 IMPF go CL.É-market  
   ‘HE is going to the market.’

Another type of clause with subject or object focus in which [nà] must be used to mark imperfectivity is those clauses containing the word -ndòndòŋ, meaning ‘alone’ or ‘only’. Compare (132a), without -ndòndòŋ, to (132b), where there is subject focus on the girl, and (132c) where there is object focus on the oranges:

(132)a. Situation: The speaker is describing a picture  
   ù-pigi à  ti/#nà 100  ji i-kútú  
   CL.A-girl AGR.CL.A IMPF buy CL.W-oranges  
   ‘The girl is buying oranges.’

100 Recall from the discussion on subject focus that the use of the marker [nà] in this case would not be ungrammatical, but would indicate subject focus, which is inappropriate in the context in (132a).
b. Situation: Answering the question ‘are the girl and the boy buying oranges?’

Only the girl is buying oranges.

The evidence given so far in this section has shown that [nà] is the imperfective marker that must be used in clauses with subject, object or verb phrase focus, while [tì] is used in cases of sentence focus. Another situation in which [nà] is required is in clauses with contrastive verb focus, like the example given in (133). Contrastive verb focus is usually marked by reduplication (Fiedler n.d.). The tonal changes involved in this example will be discussed further in Chapter 7:

(133) Situation: A business man wants to know if a truckload of merchandise he is shipping has left yet, so he asks if the drivers are driving. The response is:

No, they are LOADING.

There is also a second kind of construction that can express contrastive verb focus, in which [nà] is also the required imperfective marker. This construction involves nominalization and object focus, as shown in the example below (based on an example from Fiedler n.d.). Note also that [nà] is unacceptable in the question, since it is a yes/no question, not a content question. Thus (134a) illustrates that [tì] must be used in yes/no questions, and (134b) shows that [nà] must be used in this particular focus construction:

101 The noun root /-dändän/, meaning 'aloneness' or something of that nature, is actually just the word meaning 'one', reduplicated.

102 Contrastive focus is focus that not only emphasizes a given element of a clause, but also indicates that this element contains information that is different from information already in the discourse (cf. Skopeteas 2006).
(134)a. Situation: A wife is at home, and her husband calls and asks if she is doing laundry:

\[
\text{̀ò́ tì/*ná fōgà àà ?}
\]

2.SG.SUBJ.GRP1 IMPF do.laundry QUEST ‘Are you doing laundry?’

b. àà́ ò-kpà́ nà́ ñ nà/*ti kpà̀ł

no CL.D.iron103 FOC.CL.D 1.SG.SUBJ.GRP1 IMPF iron ‘No, I am IRONING.’ (or, more literally, ‘No, it is ironing I am ironing.’)

Another case in which [nà] must be used instead of [tì] to mark imperfectivity is in relative clauses, as illustrated in (135):

(135) Situation: Answering the question ‘which child is good?’

\[
\text{ù-pì ndé t à nà/*tì sàrà mà à tsi m}
\]

CL.A-child AGR.CL.A-REL AGR.CL.A IMPF walk SUB AGR.CL.A be.good ‘The child who is walking is good.’

In (135), the relative clause is a subject modifier, but [nà] also must be used to mark imperfectivity for relative clauses in any syntactic position. (136) provides an example with the relative clause as an object modifier:

(136) Situation: Answering the question ‘which child is that?’

\[
\text{ò lè ù-pi ñdé n nà/*tì kì mà}
\]

3.SG.SUBJ.GRP1 do CL.A-child AGR.CL.A-REL 1.SG.SUBJ.GRP1 IMPF hit SUB ‘That is the child whom I was hitting.’

The clause subordinator /mà/ is also used in non-relative subordinate clauses, where it is usually translated as ‘when’, or ‘since’. In non-relative clauses subordinate clauses, [tì] is used to indicate imperfectivity. The example in (137) is from a story written by Aboudou Razak DJABOUTOUBOUTOU SEÏDI about his trip to Cotonou:

\[103 \text{The translation 'iron' in this sentence refers to the verb 'iron', not the noun.} \]
(137)  Context: From a story describing the events of a bus journey.

When we would arrive again at far-away places, we would get down again to eat.

[ti] is also used as an imperfective marker in another type of non-relative clause
subordination, i.e. imperfective complement clauses containing /wàà/, ‘that’, as in (138):

(138)  Situation: In discussing events of yesterday, the speaker is asked, ‘what did Jean say Marie was doing when I called?’

He said that she was dancing.

It is not yet known whether non-relative subordinate clauses are marked with [nà] instead
of [ti] if they have subject, object or contrastive verb focus, as that data has not yet been elicited.

There is also one more context in which [nà] is used to express imperfectivity, which is in irrealis constructions. Recall from Chapter 3 that, pending further investigation, I am using ‘irrealis’ as a term for the construction containing a group 2 subject marker and a grammatical H tone on the verb stem. The use of [nà] in irrealis constructions is, in fact, the main reason it is being discussed in this dissertation. The most straightforward example of the use of [nà] in such a construction is with negation, as illustrated in (139). Note also that (139a) provides more evidence that [nà] cannot be used in yes/no questions:

(139)a.  Situation: In a conversation, one speaker asks:

Is the child cleaning the room?
b. Situation: A second speaker responds to the question in (a):

\[ ù-pì \ kà \ nà\text{/}*tì \ pëmpëɲɛ \ ŋ-kú ! \ ná \]

The child is not cleaning the room

Recall from Chapter 3 that the same construction is also used non-negative clauses. For example, this construction is used in clauses with future temporal reference and clauses denoting hypothetical situations. In both of these cases, [tì] cannot be used, and [nà] must be present to denote imperfectivity. With future and hypothetical clauses, however, [nà] surfaces with a long vowel, as is illustrated with a future clause in (140) and a hypothetical in (141):

(140) Situation: My friend and I are on our way to visit my brother. We are talking about our planned arrival, and my friend asks me what my brother will be doing the following day when we arrive at his house. I answer:

\[ à \ tà \ à \ nàà\text{/}*tì \ ŋò \ à-bó \]

3.SG.SUBJ.GRP1 FUT\textsuperscript{104} 3.SG.SUBJ.GRP2 IMPF write CL.T-letter

‘He will be writing letters.’

(141) Situation: The speaker is making an excuse for why she is not currently changing her clothes:

\[ ñ \ jò \ wàà \ má \ nàà\text{/}*tì \ fòbà, \ àmá \ kì \]

1.SG.SUBJ.GRP1 know that 1.SG.SUBJ.GRP2 IMPF change but NEG

\[ mò \ nà \ ŋò ! \ ná \]

1.SG.SUBJ.GRP2 IMPF see NEG

‘I wanted to be changing, but I cannot see.’

The reason for the length of the vowel with which [nà] surfaces in these contexts (and not others) is not yet clear, but the lengthened allomorph here only occurs in clauses with future temporal reference. Interestingly, the [nà] surfaces as short even in cases of future temporal reference when another marker such as the culmination marker [tì] is also present:

\textsuperscript{104} The phonology of the vowel of the future marker is quite variable, it is strongly influenced by surrounding vowels. A full analysis of this phenomenon is, however, beyond the scope of this dissertation, though it will be discussed briefly in Section 7.2.
Situation: My friend and I are thinking of going to visit my brother at the end of the school year. She asks me what he will be doing when we arrive, and I answer:

\[
\text{à t à tì nà/tì nòn à-bó}
\]

\[
3.\text{SG.SBJ.GRP1 FUT 3.\text{SG.SBJ.GRP2 TAM IMPF} write CL.T-letter}\]

‘He will eventually be writing letters.’

The data presented thus far on the use of [nà] suggest that [nà] is the imperfective marker that must be used in clauses where a certain part of the clause is in some sense brought into prominence (i.e. object focus, subject focus, contrastive verb focus, and relative clauses), and in irrealis clauses. This is summarized in Table 6:

<table>
<thead>
<tr>
<th>Situation/Clause Type</th>
<th>Imperfective Marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>object focus</td>
<td>[nà]</td>
</tr>
<tr>
<td>subject focus</td>
<td>[nà]</td>
</tr>
<tr>
<td>verb phrase focus</td>
<td>[nà]</td>
</tr>
<tr>
<td>contrastive verb focus</td>
<td>[nà]</td>
</tr>
<tr>
<td>negation</td>
<td>[nà]</td>
</tr>
<tr>
<td>future</td>
<td>[nà]</td>
</tr>
<tr>
<td>hypotheticals</td>
<td>[nà]</td>
</tr>
<tr>
<td>relative clauses</td>
<td>[nà]</td>
</tr>
<tr>
<td>‘that’ complement clauses</td>
<td>[tì]</td>
</tr>
<tr>
<td>‘since/when’ subordinate clauses</td>
<td>[tì]</td>
</tr>
<tr>
<td>sentence focus</td>
<td>[tì]</td>
</tr>
</tbody>
</table>

Table 6: The distribution of the Anii imperfective markers

The final section of this chapter will conclude the discussion of temporal and aspectual reference in Anii.

105 This word (/ùb/) actually means ‘leaves’, but can also be used to refer to a number of paper products, including paper, letters, notebooks, etc.
4.6 Conclusions

This chapter has presented and analyzed two markers in Anii, as well as providing a brief discussion of three more. The marker [ʧèé] was shown to be a perfect marker, given that it behaves like perfect markers described in other languages, including its interaction with Aktionsarten. An analysis of this marker was presented that takes into account the fact that [ʧèé]-marked stative clauses can have continuative interpretations, but [ʧèé]-marked eventive predicates cannot.

Additionally, this chapter presented data regarding the interpretation of the far past marker [bʊŋà], which was shown to be a TRM in the sense proposed by Cable (2013). That is, it was shown that [bʊŋà] restricts the relationship between the eventuality time of the eventuality denoted by a clause and the utterance time of that clause, such that the eventuality time far precedes the utterance time. An analysis was proposed that takes this into account.

The analyses of [ʧèé] and [bʊŋà] proposed in this chapter build on the analysis of perfective and imperfective clauses proposed in Chapter 3. This analysis can thus account for unmarked clauses, imperfective-marked clauses, perfect-marked clauses, and clauses marked with the far-past TRM. It was also illustrated above that Anii clauses can be marked with more than one of these markers, which the analysis can also account for, as the interested reader can verify if she so chooses.

Finally, this chapter has briefly described the meaning of the marker [tɩ], which has the meaning that an eventuality denoted by a [tɩ]-marked clause is the culmination of one or more preceding occurrences. The marker [jè] was also presented, and shown to have a meaning related to a speaker’s insistence that an eventuality has occurred, or will occur, against contrary beliefs or arguments. Additionally, this chapter has presented an overview of the distribution of the two Anii imperfective markers, [tɩ] and [nà], which will prove helpful in understanding some of the tonal data presented in Chapter 7.

Chapters 3 and 4 of this dissertation have thus provided a nearly complete analysis of temporal and aspectual reference in Anii, though more research is needed regarding ‘future’ clauses. This analysis of temporal and aspectual reference has included the demonstrated effects of Aktionsarten, and provided a solid basis for future research.
Such future research will include a closer analysis of clauses with future temporal reference, as well as the analysis of modality in Anii, a topic that is unfortunately beyond the scope of this dissertation.

The data an analysis presented here represent the first in-depth study of any area of semantics in Anii. Additionally, this study provides one of very few formal analyses of temporal and aspectual reference in a West African language—or even in a Niger-Congo language. This work thus represents a valuable addition to the fields of formal semantics and African linguistics, and should be useful particularly for future crosslinguistic study of temporal and aspectual reference.
Chapter 5
Introduction to the Analysis of Tone and Syllable Weight

As was mentioned in Chapter 1, tone is an integral part of the grammar of Anii. The following chapters will describe and analyze tone in the Gisuda Anii verb complex, with a few comments on Anii tone in general. By 'tone', I mean a phonological entity that creates or contributes to linguistic contrast by the use of pitch (and other phonetic correlates). There are two types of tone that will be discussed, i.e. those that largely contribute to lexical meaning distinctions, and those that largely contribute to grammatical meaning distinctions.

Lexical tone is part of a given morpheme's lexical entry, just like the segmental phonemes that make up that morpheme. This type of tone in the Anii verb complex will be the focus of Chapter 6. The other type of meaning that can be conveyed by tone is grammatical meaning. Grammatical tone in Anii is tone that is part of a grammatical morpheme (e.g. a TAM marker, in the case of the verb complex). A grammatical tone pattern (i.e. one or more tones that have a grammatical meaning) can even be an entire morpheme itself, with no segmental content, though no such completely tonal morphemes have yet been found in Anii. The interaction between lexical tone and grammatical tone is also an important aspect of the tonal grammar of Anii, as will become clear in Chapter 7, where grammatical tone in the Anii verb complex is presented and analyzed.

The focus of the current chapter, however, is the presentation of the theoretical and empirical background that will set the stage for the analyses in the following chapters. Section 5.1 presents a set of basic theoretical assumptions that will be made throughout the analysis, with a focus on the framework of autosegmental phonology (Goldsmith 1976a and much following research). A discussion of syllable weight and the
relation of units of weight to tone-bearing units will be presented in Section 5.2, Section 5.3 introduces the possibility of tonal underspecification and toneless syllables, and Section 5.4 discusses the phenomenon of downstep. Finally, Section 5.5 is a brief conclusion to this chapter.

5.1 Theoretical Background: Autosegmental Phonology

The general framework used here for the phonological analysis presented in the following chapters is autosegmental phonology (cf. Goldsmith 1976a, etc.). In autosegmental phonology, each property of a given sound is conceived of as being on a separate level of representation, or ‘tier’. Many separate tiers are joined to an entity commonly referred to as an ‘anchor’, which is in a given position in a word or phrase (i.e. ordered with respect to other anchors). The combination of all the elements on all the tiers associated with that anchor describes what sound is pronounced in that position.

For example, a possible autosegmental representation of the syllable [bé] is given in (1), assuming that the relevant features are [voice], [labial], [high], [low], [back], [tense] and [consonantal], and that there is also a tonal tier containing high (H) tones. A full discussion of issues such as whether features are unary or binary, and exactly what features are needed to distinguish the sounds represented here is far beyond the scope of this dissertation, and irrelevant to the goals of this work, so these issues are glossed over. In (1), the sound properties are shown attached to an empty circle, representing the anchor. A deeper discussion about what exactly the properties on autosegmental tiers associate to (i.e. what those circles represent) is given below as part of the discussion of syllable weight. There are two tier bundles represented in (1), one for [b] and one for [é]:

(1)

```
[+labial]
[+voice]  [low]
[+consonantal]  [-back]
```

```
[-high]
[+tense]
H
[-consonantal]
```
The representation in (1) says that there are two anchors. The first one is attached to the features [+labial], [+voice], and [+consonantal], a set of features which describe the sound [b], a voiced bilabial consonant. The second anchor is attached to the features [-consonantal], [+tense], [-low], [-high], and [-back], and is also attached to a H tone. This set of features describes a mid front tense vowel with a H tone, i.e. [é]. The lines connecting each feature or entity to the anchor are referred to as ‘association lines’.

The diagram in (1) glosses over the fact that there is, in fact, internal structure to the feature ‘cloud’. That is, it has been well established (cf. Clements 1985 and much following literature) that there is structure in how feature tiers are related to each other. Since this dissertation is not about segmental phonology, however, the details of this structure (which have been much debated) do not play a role here, and will not be discussed further.

Representations such as that in (1) can become quite cumbersome to write, but only if the complete feature bundle is presented. Generally speaking, phonological phenomena only involve one or two tiers interacting, so all the tiers that are irrelevant for a given phenomenon are not included in most autosegmental representations of that phenomenon. This convention makes autosegmental representations fairly simple in practice. The example in (2) illustrates a possible autosegmental representation of tone in the Anii word [súkò], ‘horse’, where the only relevant tiers are the tonal tier and the anchor tier. As is done in (2), the segment transcriptions can be used as shorthand for all the features on the segmental tiers (which are, in fact, irrelevant in this case). The L stands for low tone:

(2) s u k o
   L   H   L

The reader will have noted that in (2), the tones are only attached to the anchors that are also attached to the features representing the vowels. The fact that not every segment
bears tone suggests that there is something specific about the anchors attached to the vowels that makes them able to bear tone. This is in fact the case, as is discussed in Section 5.2 below.

The representation in (2) makes the claim that both L and H tone are phonological entities\(^{106}\), which can associate to an autosegmental anchor. In this case, a L tone is associated to the same anchor as the features describing the segment [a], a H tone is linked to the same anchor as that of the features describing [u], and another L tone is linked to an anchor that is also associated to the set of features representing [o].

There is one basic restriction that is generally assumed in order to constrain the number of possible autosegmental representations for a given form. This restriction is that association lines must never cross. Given this constraint, the representation in (3) would be forbidden. The word [ákàôtù] is a nonsense word used for illustration purposes:

\[
\text{(3) a k a o t u}
\]

\[
\begin{array}{cccccc}
\text{H} & \text{L} & \text{H} & \text{L} \\
\end{array}
\]

The theoretical usefulness of this prohibition (often referred to as the No Crossing Constraint, or NCC) lies in the fact that it can prevent unattested forms from being allowed by the theory. For example, with regard to harmony processes, this constraint allows for a theoretical explanation of blocking and adjacency phenomena (cf. Clements 1976/80, Rose 2011). This is illustrated (for example) in van der Hulst and Smith (1982), in their discussion of nasal harmony in Applecross Gaelic, which they conceive of as the spread of the feature [+nasal]. This spreading, they argue, is blocked by a segment specified for non-nasality (i.e. to which the feature [-nasal] is linked), because the NCC prevents the [+nasal] feature from spreading across an association line. This type of

\(^{106}\) I will argue below that Anii does not, in fact, have phonological L tones, but L tones are used here for illustrative purposes.
analysis for blocking phenomena is schematized in (4), with the fictional word [mā̃bāta], in a fictional language in which voiceless obstruents stop nasal spreading:

(4) m a b a t a 
    [+nasal]  [-nasal]

Not only is the [t] not nasal in this example, but it also prevents the nasal spreading from continuing to the following [a] because the negative specification for nasality is associated with the [t]. The NCC provides a general principle to explain such examples, and will become important in this dissertation with regard to the ordering of tones, as will be shown below.

The operations within autosegmental phonology which will be used in this dissertation include linking and delinking (cf. Goldsmith 1976a). Linking is the creation of association lines (and can also be referred to as association, or docking), while delinking is the deletion of association lines. Conventionally, linking is represented by a dashed line, and delinking by crossing out an association line. These conventions are illustrated with dummy tiers in (5):

(5) a. Linking
    X
    Y

b. Delinking
    X
    Y

The combination of linking and delinking can account for many different processes. For example, movement (a frequent process in tonology whereby a tone moves from its original linkage site to another linkage site) can be thought of simply as deleting an association line, and then drawing a new one. Other relevant operations include insertion and deletion of entities (e.g. tones and anchors).
Another important feature of autosegmental representation in general, which is of particular interest in tonology, is the possibility of multiple linkage. That is, there can be both many-to-one and one-to-many association relations between tones and anchors. For example, many African languages have been shown to have tone melodies, i.e. set tone patterns which can be realized on a variety of word lengths. A classic example of this, from Etung, was given in Edmondson and Bendor-Samuel (1966). A sample of their data is given in (6). I use ˇ to represent a rising tone, and ^ for a falling tone:

(6) | Three syllables | Two syllables | One syllable |
---|---|---|---|
 a. L ëyùri ‘dress’ ëgù ‘evening’ kpè ‘even’ |
 b. LH bisôŋé ‘spoon’ êkát ‘leg’ kà ‘to/into’ |
 c. HL ãkpùgà ‘money’ ódà ‘platform’ nà ‘it is’ |
 d. H ǹkìmì ‘prosecutor’ ìsé ‘father’ kpá ‘first’ |

Each row in (6) is presumed to be a single tone pattern. To represent this data in an autosegmental framework (assuming that there are only four tonal categories), then, multiple linkage is required.

For example, the autosegmental representations of the words in (6b) would be as follows (under the assumption that the same tone pattern is at play in each word). Only the anchors that have tones attached are relevant here, so they are the only ones included:

(7) a. **b i s o ŋ e**  b. **e k a t**  c. **k a**

In (7a), the H tone is associated with more than one anchor, while in (7c), the anchor is associated with more than one tone. The possibility of both of these types of multiple linkage in autosegmental representations.

107 Making this assumption means that there are only four tonal categories in Etung, while if e.g. LH and LHH were phonologically different tone patterns, there would be many more than four patterns in Etung. See e.g. Leben 1973a,b, Goldsmith 1976a for the reasoning behind this assumption, which is related to the argument that tone is in fact a suprasegmental phenomenon. The important point here, however, is to illustrate the possibility of multiple linkage in autosegmental representations.
linkage is an aspect of autosegmental phonology that is particularly important in the analysis of tone (cf. Hyman 2011, Szigetvári 2011).

The representation in (7c), where two or more different tones are attached to the same tone-bearing unit, is typically given to contour tones (i.e. tones that are not level, e.g. LH, HL, LHL, LM\(^\text{108}\), HM, etc.) in an autosegmental framework, though different claims regarding the nature of contour tones have been made by some authors\(^\text{109}\). In this framework, it is generally assumed that contour tones are not tonal units themselves, but are underlyingly combinations of level tones.

This section has presented the basics of the autosegmental representations which will be used in the analyses that follow. One issue that has not yet been addressed, however, is the question of what exactly it is that tones (and possibly segmental features, as well, in some cases) attach to, i.e. what is the ‘anchor’ discussed above. This question is addressed in the following section, which presents the basics of moraic theory (cf. Hyman 1985).

5.2 Syllable Weight and the Tone-Bearing Unit

As described above, in an autosegmental framework, it is assumed that each utterance consists of some number of entities to which tone attaches. In tonology, this entity is referred to as the tone-bearing unit, or TBU. The nature of the TBU is the focus of this section. Note that the TBU is not necessarily the anchor to which segmental features attach because all segments have segmental features, but not all can bear tone. An important aspect of defining the TBU, then, is that there appears to be a non-arbitrary connection between the TBU and the phonological concept of syllable weight.

As many authors have shown (cf. Hyman 1985, Hayes 1989, 1994, Morén 2001, etc. for the generalizations given in this paragraph), with regard to the phonological concept of syllable weight, there are at least two kinds of syllables, usually referred to as

---

108 M stands for mid tone, a tone higher than L, but lower than H in a system that has a three-way tone contrast.
109 For further discussion of contour tones cross-linguistically and other possible analyses, see Yip 1989 and Kaplan 2007, among others.
heavy and light syllables. A syllable can be heavy because it contains a long vowel (CVV structure) or, in some languages, because it has a coda consonant\(^{110}\) (CVC structure)\(^{111}\). In a language such as Latin, both CVV and CVC syllables count as heavy (e.g. for stress assignment). In other languages, CVV syllables count as heavy, but CVC syllables do not (an often-cited example is Lardil).

The question of whether or not coda consonants contribute weight has been of central interest to many researchers. As mentioned above, a commonly accepted answer to this question is that coda consonants contribute to syllable weight in some languages, but not in others (cf. Hayes 1989, 1994, Morén 2001). Claims have been made (e.g. Hyman 1985) that if CVC syllables are heavy with regard to any phonological phenomenon in a given language, they must be heavy everywhere within that language. This claim, however, has been shown to be false (cf. Hyman 1992, Morén 2001), and the possibility that coda consonants can vary in weight within a single language will be important for the analysis of Anii.

Evidence that the distinction between heavy and light syllables can be important phonologically includes phenomena such as stress assignment and prosodic minimality constraints. For example, in a language with both heavy and light syllables, the heavy syllables attract stress, as in the case of Khalka Mongolia (Bosson 1964, Walker 1995, synthesized by Morén 2001). According to these sources, word stress in Khalka Mongolian occurs on the initial syllable when all the syllables of a word are light, as in (8a) below. In contrast, when a word contains a heavy syllable, the stress occurs on the rightmost non-final heavy syllable, as shown in (8b). Stress is indicated with the symbol ' before the stressed syllable, and . indicates a syllable boundary:

(8) a. /[a.xa]/ ‘brother’  
    /[xa.da]/ ‘mountain’

\(^{110}\) A coda consonant is a consonant that occurs at the end of a syllable, or that is a member of a consonant cluster at the end of a syllable.

\(^{111}\) Throughout this dissertation, I will discuss mainly CV, CVV and CVC syllables, as these (along with syllables consisting only of a single vowel or a single consonant) are the only types of syllables Anii has. Of course, in other languages there are complex onsets and complex codas, which have been argued to affect syllable weight in some languages (cf. Davis 1985, Morén 2001, Muller 2001), but since Anii does not have these structures, they are not discussed further here.
Another linguistic phenomenon that has been used to argue for the phonological reality of the heavy/light syllable distinction is prosodic minimality. A classic case comes from Arabic (McCarthy and Prince 1990a), where a light syllable cannot be a word in its own right, but a heavy syllable can be. This fact indicates that there is some weight-sensitive minimality constraint as to what the structure of a word in Arabic can be. The fact that such constraints exist suggests that syllable weight is a phonologically important phenomenon. More prosodic arguments of this type can be found in McCarthy and Prince 1998. Light and heavy syllables also often behave differently with regard to tonal phenomena (cf. Hyman 1985, 2011, Odden 1995), and this aspect of the light/heavy syllable distinction will be the focus of the remainder of this section.

A fact that was noticed early on by researchers studying tone languages is that “there is a non-arbitrary relationship between the units which contribute to syllable weight and the units which can carry tone in a language” (Hyman 1985, 9). Perhaps the most obvious tone phenomenon supporting this conclusion is the fact that in many tone languages, contour tones are not permitted (or permitted only in restricted circumstances) on light syllables (cf. Hyman 1985, Odden 1988, Hayes 1989, Kaplan 2007), but can be present on long vowels and other heavy syllables with few or no restrictions. Following many other researchers, I will account for the link between syllable weight and tone-bearing units using moraic theory (cf. Hyman 1985, Hayes 1989, Morén 2001).

In moraic theory, syllables are assumed to consist of one or two112 weight units, or ‘moras’. The basic difference between consonants and vowels with respect to syllable weight in this theory is often claimed to be that all vowels underlyingly have moras linked to them, while consonants may or may not. The facts of Anii actually provide a challenge to this common assumption, however, as will be discussed in Section 5.2. Coda consonants are assumed to be linked to their own moras under certain conditions,

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112 There has been debate over whether or not languages can have trimoraic syllables (cf. Baal, Odden and Rice 2012), but as this question is not relevant to the Anii data, it will not be further discussed here.
due to language-specific rules or constraint rankings (cf. Hayes 1989, Pulleyblank 1994, Morén 2001). Example (9) illustrates the structures of CV (9a), CVV (9b), and light (9c) and heavy (9d) CVC syllables that are commonly assumed in moraic theory. The symbol $\mu$ stands for a mora, and $\sigma$ for a syllable:

(9) a. $\sigma$
   \[ C \rightarrow V \]

   b. $\sigma$
   \[ C \rightarrow V \rightarrow V \]

   c. $\sigma$
   \[ C \rightarrow V \rightarrow C \]

   d. $\sigma$
   \[ C \rightarrow V \rightarrow C \]

In (9), moras are represented as being components of syllables that represent syllable weight. Note that the light syllables in (9a) and (9c) have one mora, and the heavy syllables in (9b) and (9d) have two. Every vowel in (9) is linked to a mora, while the only consonant that is linked to a mora is the coda consonant in (9d), illustrating a heavy CVC syllable.

There is also one other type of syllable that will become important for the analysis of Anii: syllables in which the peak of the syllable is a consonant, rather than a vowel (i.e. syllables that do not contain a vowel). Consonants that make up an entire syllable (or which are syllable peaks) are generally referred to as syllabic consonants. It has often been assumed (though not often explicitly discussed) that syllabic consonants must be moraic (cf. Hyman 1984). The representation of syllabic consonants under such an assumption is given in (10):

(10) $\sigma$
    \[ \mu \rightarrow C \]

As will be discussed in Section 5.2.2 below, not all CVV syllables in Anii actually have the structure in (9b), calling into question the presumed universality of these proposed structures. An alternative to the structure in (7c) is one in which the coda consonant, like the onset consonant, attaches directly to the syllable, rather than sharing the vowel mora (cf. Hayes 1989). Since this representational difference does not affect the data to be presented here, and either structure is possible, I simply picked one.
As discussed further below, there are a number of tonal processes that are sensitive to syllable weight, and these processes may shed light on the question of exactly what is the nature of the tone-bearing unit. Under moraic theory, the TBU has generally been assumed to be either the mora or the syllable. In fact, the assumption made by most researchers (cf. Downing 1990, Hyman 1992, Duanmu 1994a, Odden 1995, 1998, 2009, Dowd and Hayward 2002, Roberts 2005, Cahill 2007, Thiel 2007) is that in some languages, the mora is the TBU, and in other languages, the syllable is. This assumption (which I will also make) is based on languages’ differing phonological behavior. It is thus necessary to determine from the linguistic facts whether the TBU is the syllable or the mora in Anii. Section 5.2.1 will present the types of evidence that can speak to whether the mora or the syllable is the TBU in a given language, while sections 5.2.2, 5.2.3 and 5.2.4 discuss other issues related to syllable weight that will be important in the analysis of the Anii data in the following chapter.

5.2.1 Arguments for the Nature of the Tone Bearing Unit

There are several types of data that can speak to the nature of the TBU in a given language. One argument that is commonly used to address the TBU question, as briefly mentioned above, is the distribution of contour tones. An example of this type of argument comes from Downing (1990), who posits that the lack of contour tones in Jita on monomoraic or bimoraic syllables (particularly on long vowels) is evidence that the syllable, not the mora, is the TBU. This lack of tonal contours occurs even in bimoraic syllables derived from compensatory lengthening processes, where contours might be expected. The data for this process (from Downing (1990:100)) is given in (11) below, where syllables not marked as H are assumed to be toneless (surface low):

(11)  

<table>
<thead>
<tr>
<th>Jita</th>
<th>Anii</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>oku-óga</td>
<td>okwóóga</td>
<td>‘to bathe’</td>
</tr>
<tr>
<td>oku-úmya</td>
<td>okúúmya</td>
<td>‘to dry’</td>
</tr>
<tr>
<td>oku-íta</td>
<td>okwiíta</td>
<td>‘to kill’</td>
</tr>
</tbody>
</table>

115 Other proposals for the TBU have been suggested in order to explain the phenomenon of depressor consonants (the fact that the adjacency of voiced consonants can lower tones in certain languages) (cf. Bradshaw 2000, Lee 2008), but since these are not widely-discussed proposals, and Anii does not seem to have depressor consonants, these alternatives are not considered in detail here.
The important point here is that the surface long-vowel forms have a level H tone, independent of which of the two moras originally had the H tone, which suggests that the H tone is linked to the entire syllable, rather than to individual moras.

This type of argument for the nature of the TBU is not necessarily compelling, however, because data like that given in (11) could just as easily be explained under the assumption that the mora is the TBU. The argument in this case would be that the language has a general constraint against contour tones (i.e. any sequence of non-identical tones within a syllable), and that contours are repaired by becoming level H tones if they contain a H-toned mora. An analysis of this type is given for Tachoni in Odden (1990b). The rule for Jita would be that both rising and falling tones simplify to level H tones. According to Downing (1990), there are, in fact, no contour tones in Jita except for phrase-final falling tones, which Downing analyzes as being the phonetic realization of phrase-final H tones. Thus, it seems that positing contour-simplification rules for Jita would account for the lack of contour tones just as well as assuming that the syllable is the TBU in Jita. The issue with such an analysis, however, is the question of whether positing extra rules is warranted. In this case, it may be that an analysis in which the syllable is the TBU is simpler,\textsuperscript{116} depending on the other facts of the language, since such an account does not require positing extra rules. Thus, the distribution of contour tones can speak to the nature of the TBU, but this type of evidence is not always as decisive as has been claimed.

Another kind of evidence that has been used to point to the nature of the TBU is the existence in particular languages of phonological phenomena that are most simply explained with reference to syllables rather than moras, or vice versa. For example,

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\textsuperscript{116} By using the term 'simple' in this case, I am referring to formal simplicity. With regard to the phonological analyses presented here, formal simplicity (and its opposite, formal complexity) is evaluated with regard to the number of symbols used in a rule (assuming a reasonable theory of rule formulation, such as that discussed at the beginning of this chapter)—the more symbols, the more complex the rule.
Chimaraba Makonde (Odden 1990b), in third-person future forms, there is a H tone spreading rule whereby the H on the first syllable (or mora) of the stem spreads rightward once. This rule only operates, however, if the syllable being spread to is followed by a toneless syllable. That is, the spreading rule never results in different H tones on adjacent syllables. Examples (from Odden 1990b: 68) are given in (12). A lack of accent in the transcription here indicates tonelessness, and accent indicates H tone, [ indicates a stem boundary, and + a morpheme boundary:

(12) a. vana [ chí + teleéka] ‘they will cook it’
b. vana [ pilikaána] ‘they will hear’
c. vana [ ni + fúkuziíla] ‘they will chase for me’
d. vana [ télékelaána] ‘they will cook for each other’
e. vana [ vi + télékelaána] ‘they will cook them for each other’

Crucially, in (12a), the stem-initial H tone is blocked from spreading, meaning that the H tone which is realized on the second mora of the fifth syllable must be the blocker. That is, it seems that the entire syllable is behaving as if it had a H tone, even though the H tone is actually pronounced only on the second mora of that syllable. It seems clear that whatever analysis of this data is proposed, it must refer to syllables in some way. This does not mean, however, that the syllable must be the TBU in this language. Indeed, Odden (1990b), argues that the mora is the TBU in Chimaraba Makonde because (for example) there is a surface contrast between HH, HL and LH on long vowels, while there is no similar contrast on short vowels. Assuming the mora to be the TBU, then, the data in (12a) could be analyzed by writing the doubling rule to state that stem-initial H tone spreads once, unless there is a H tone within the syllable following the syllable to which the H would spread (cf. the syllable adjacency condition proposed by Odden (1994)). Thus, while syllables appear to be important to the analysis of this phenomenon, this data does not provide a strong argument for the syllable as TBU. This example makes the important point that the fact that the syllable (or the mora) is referenced in a rule (that is not a tone association rule) does not necessarily mean that that entity is the TBU.
A slightly different type of example is found in Kenyang (Odden 1988), where an argument could be made for the mora as the TBU (though this was not done by Odden) partially based on where contour tones can occur. In Kenyang, falling tones on short vowels only occur utterance-finally. This fact is accounted for in Odden (1988) by positing a Fall Simplification rule that delinks the L tone in a HL contour on a short vowel that occurs in phrase medial position so that e.g. /ńkû/, ‘dress’, becomes [ńkū] in medial position, e.g. [ńkú pyš], ‘black dress’. This simplification does not occur on phrase-medial long vowels (e.g. [béwɔsì], ‘to dry up’. Since Fall Simplification is said to only apply to short vowels (not long vowels), it could be formulated under moraic theory as only applying when more than one tone is linked to the same TBU. This restriction would not apply to CVV syllables because those syllables are bimoraic, and there are no multiply-linked tones in such syllables. Of course, if the syllable were the TBU, this same data could be explained simply by appealing to syllable weight, and noting that Fall Simplification only applies to light syllables. Claiming the syllable as the TBU means that the units of syllable weight are not tone-bearing units, but that does not necessarily mean that syllable weight does not affect tone association.

According to Odden (1988), there is another fact of Kenyang that is relevant to the TBU question. This fact is that tritonal (specifically LHL) contours exist in the language—but only on bimoraic (heavy) syllables at the ends of words. That distribution suggests that Fall Simplification applies to these long contours word-medially. What is particularly relevant about this distribution is that if the mora is the TBU, the fact that both HL and LHL contours are restricted to the ends of words can be accounted for with the same mechanism, namely (according to Odden 1988) by tone mapping rules by which more than one tone on the same TBU is only permitted at the end of a word. Compare the utterance-medial form of the word for ‘dress’, discussed above, to that of the word for ‘long-necked antelope’ (Odden, p.c.), as shown in (13):

<table>
<thead>
<tr>
<th>Utterance Final</th>
<th>Gloss</th>
<th>Utterance Medial</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ńkû]</td>
<td>‘dress’</td>
<td>[ńkû pyš]</td>
<td>‘black dress’</td>
</tr>
<tr>
<td>[ńkûû]</td>
<td>‘long-necked</td>
<td>[ńkûû pyš]</td>
<td>‘black long-necked antelope’</td>
</tr>
<tr>
<td></td>
<td>antelope’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Note that Fall Simplification applies phrase medially on both nouns. If the mora is the TBU, this could be simply explained in the same way as the distributional data in the previous paragraph, i.e. by saying that Fall Simplification only applies to HL sequences linked to the same TBU. An analysis of this data assuming the syllable to be the TBU would require at least two rules, since restricting Fall Simplification to only light syllables would not account for the fact that it applies to LHL contours, which occur on heavy syllables. Positing the mora as the TBU in Kenyang allows for a simpler analysis of LHL contours than positing the syllable as the TBU.\textsuperscript{117}

Because they refer directly to TBUs, tone association and spreading rules provide the strongest evidence regarding the nature of the TBU in a given language. An example of this type of evidence is found in Kikuria (Odden 1995a). In this language, according to Odden, a H tone occurs in different places on the verb stem depending on the “tense-aspect” of the form. In the form he refers to as subjunctive, for example, the H tone is attached to the third mora, and then apparently spreads one mora to the right. Attachment can occur on the final mora, but spreading to the final mora does not occur. The data (from Odden 1995a) is in (14). The subject pronoun is not considered to be part of the verb stem, as indicated by [ , but the object pronoun is:

\( (14) \)

\begin{align*}
\text{a. } & n-[\text{terɛk}-\text{ɛ}] & \text{‘I should cook’} \\
\text{b. } & n-[\text{ɡa}-\text{terɛk}-\text{ɛ}] & \text{‘I should cook them’} \\
\text{c. } & n-[\text{karaāŋ}-\text{ɛ}] & \text{‘I should fry’} \\
\text{d. } & n-[\text{ɡa}-\text{karaāŋ}-\text{ɛ}] & \text{‘I should fry them’} \\
\text{e. } & m-[\text{beebɛt}-\text{ɛ}] & \text{‘I should sieve’}
\end{align*}

The important point here is that the syllable containing the H tone surfaces with a level H tone in (14a-b) and (d-e), but with a rising tone in (14c). If the H tone links to syllables, \textsuperscript{117} There are other facts of Kenyang involving the behavior of coda consonants which may raise questions about the correct analysis of the language, but which are orthogonal to the question of the nature of the TBU. For example, consonant-final syllables generally behave as if they are light (for example, LHL contours are not possible on final VC syllables, though they are possible on final VV syllables, suggesting that the final Cs are not moraic). However, word-final VC syllables can bear underlying rising tone, as is demonstrated in Odden (1988) with data related to the resyllabification of final consonants (and the tones they bear) when they are followed by a vowel-initial word. This data suggests that the analysis of the moraicity of final consonants is not straightforward. This is an interesting phonological phenomenon, but not relevant to the issue being discussed here. The issue of final consonant moraicity in general is discussed below in section 5.2.3.
then there is no plausible explanation for why it occurs sometimes on an entire syllable, and sometimes only on part of the syllable. An attempt to analyze this data assuming syllables to be TBUs in Kikuria would thus be impossible, but the analysis is fairly simple if the mora is the TBU in this language.

A similar spreading rule occurs in Kikerewe, according to Odden (1995b), whereby every H tone in that language spreads once to the right (but not to final syllables). Where the Kikuria spreading rule discussed above provides evidence that the mora is the TBU in Kikuria, the Kikerewe spreading rule discussed here provides evidence for the syllable as the TBU in that language, as shown in (15), from Odden (1995b: 97), where the H tone of the subject prefix spreads rightward one syllable:

(15) a. a-bá-kú-luunduma “they who are growling”
    b. a-bá-lúúnduma “they who growl”

If the mora were the TBU in this case, the tone would have to be argued to spread only once onto a short vowel, but twice onto a long vowel—that is, there would have to be an additional spreading rule for long vowels. If the syllable is the TBU, then the same spreading rule could account for forms like (15a) and forms like (15b), so in this case, it would be simpler to assume that the TBU is the syllable.

In general, in any language where CVV (and possibly CVC) syllables can be demonstrated to have different tonal behavior from CV syllables, it has often been assumed that the mora, rather than the syllable, is the TBU. In fact, since not all tonal rules refer only to tone-bearing units, this assumption is not warranted. What data like that discussed above does demonstrate, however, is that in languages where CVV (and maybe CVC) syllables behave differently from CV syllables with reference to tone association rules, it can be assumed that the mora is the TBU. This is because these rules are the only rules that unquestionably refer to TBUs, given the definition of the TBU (as the entity to which tones associate). Additionally, as with the Kikuria and Kikerewe examples above, non-iterative spreading rules can often shed light on the nature of the TBU because spreading, like association, is the creation of association lines between
tones and TBUs. In Chapter 6, I will use tone association data to argue that the mora is the TBU in Anii.

Anticipating this argument, then, the place-holder circles used in the representations above as anchors for tone are now assumed to represent moras in all Anii data. The question of the anchoring of segmental features is a different one, since even non-moraic segments have segmental features. A full discussion of segmental features is beyond the scope of this dissertation, so this issue will not be discussed further here. The important point is that representations of Anii data given from this point on will reflect the assumption that tones anchor to moras, which will be justified in Chapter 6.

5.2.2 Diphthongs and Syllable Structure in Moraic Theory

As mentioned above, it is common to assume in moraic analyses that every vowel is linked to its own mora (a linkage generally assumed to be underlyingly present). Given this assumption, a common analysis of diphthongs is that since they are VV sequences, they are underlyingly bimoraic. Interestingly, while likely true for many languages, this assumption does not hold for Anii. As mentioned in Chapter 1, Anii diphthongs, at least in verb stems, behave differently from long monophthongs with respect to tone association. Also, both monophthongal and diphthongal CVV stems behave differently from CVC stems. Some data that exemplifies this fact (repeated from Chapter 1 and expanded) is in (16). The facts of interest here involve tone on the verb stems, which are bolded:

(16) a. ń bọŋà bɔɔ́ ‘I prepared food long ago.’
    b. ń bọŋà lɛɛ́ ‘I laughed long ago.’
    c. ń bọŋà tʃɛɛ́ ‘I skimmed long ago.’
    d. ń bọŋà jɛɛ́ ‘I returned long ago.’

The forms given here have no lexical tone, but the same type of grammatical tone. Tellingly, the surface tone pattern of the diphthongal forms in (16b) and (16c) are exactly what would be expected if those diphthongs were monomoraic. Compare those data to
the monomoraic CV stem given in (17), which also has no lexical tone and the same type of grammatical tone as the examples in (16):

(17) ń bọŋà ló  ‘I wove long ago.’

Additionally, an example is given in (18) to illustrate that (16d) behaves like clearly consonant-final forms, suggesting that the contrast between (16b-c) and (16d) is related to the fact that the final [w] in (16d) is a consonant (as transcribed), but the final high vocoid in (16b-c) is a vowel:

(18) ń bọŋà fěm  ‘I spit long ago.’

A comparison of (16b) and (17) shows that diphthongs in Anii behave tonally like short monophthongs, and thus are likely monomoraic, and a comparison between (16d) and (18) illustrates that forms with final glides behave like other consonant-final forms. The claim here is that diphthongs in Anii are monomoraic on the surface, and that final glides behave like other consonants (i.e., as will be illustrated below, VC sequences are monomoraic underlingly but bimoraic on the surface). The data and analysis presented below and in the following chapters will support this claim.

In Section 5.2.2.1, I discuss the theoretical significance of the data given in (16), (17), and (18), with a focus on cross-linguistic issues of diphthong structure. Section 5.2.2.2, then, briefly outlines important assumptions about prosodification in Anii that need to be made explicit before the tonology of the Anii verb complex can be presented.

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118 It could be argued that these monomoraic diphthongs are ‘short’ in comparison with the bimoraic diphthongs that exist in other languages (cf. Morén 2001). It is important to note, however, that no claims are being made here about phonetic duration, which has not yet been investigated. On a transcriptional note, there is a standard transcription for ‘short’ diphthongs using breve marks (e.g. ĺu). Since there is no short/long contrast in Anii diphthongs, however, and since the presence of a breve mark would make tone transcriptions harder to read, I have chosen a broader transcription for diphthongs that does not include the breve mark, though all Anii diphthongs could be (perhaps more accurately) transcribed with such a mark.
5.2.2.1 The Prosody of Diphthongs

Data such as that in (16), (17), and (18) bring up two theoretically-significant points about Anii. First, as illustrated in (16b-d), there is a behavioral contrast between [w] and [u]/[ʊ]\(^{119}\) even when neither is the peak of a syllable.\(^{120}\) This type of contrast is not unheard of (cf. Hume 1994, Chitoran 2002, Levi 2004, 2008, and Padgett 2008), but is unusual crosslinguistically. It is important to note that there may or may not be a phonetic duration contrast between e.g. <eu> and <ew> in Anii (phonetic data is not currently available), but whether or not there is such a phonetic difference is irrelevant to the argument being made here. The important point is that phonologically, the contrast lies in differing tone association patterns, reflecting differences in moraicity. This issue is discussed further in Section 5.2.4 below.

Relatedly, and even more unusually, this data (specifically the similarity between (16b-c) and (17)), and much other data that will be presented in the following chapters, shows that diphthongs in Anii are all monomoraic, despite the fact that there is a length contrast in monophthongs. For a diphthong to be monomoraic, presumably either one of the two vowels would be moraic and the other would not, or the two vowels would share a single mora. Either structure is unexpected given the assumption commonly made by authors working in moraic theory that all vowels are moraic at some stage.

In fact, even before moraic theory was in use in phonological analyses, most authors assumed that long monophthongs and diphthongs pattern together—and indeed, in many languages, this is the case (cf. Seidel 1900, Sapir and Swadesh 1960, Tyler 1969, Newman 1972, Haas 1977, Hyman 1977, Jeanne 1978, Hayes 1980, 1994, Levin 1985, Rosenthal and van der Hulst 1999). There are also languages in which authors argue that “diphthongs” ending in high vowels are underlyingly vowel-glide sequences (cf. Barker 1959, Hyman 1985, Levin 1985, Clynes 1997, Rosenthal 1997, Levi 2008, Lesho 2013). What is particularly interesting about the Anii facts is that Anii appears to have a 3-way contrast (with reference to syllable weight) between long vowels, vowel-glide sequences, and short diphthongs. Vowel-glide sequences will be discussed in more detail

\(^{119}\) [u] and [ʊ] do not contrast in these situations—the difference is one of predictable [ATR] harmony.

\(^{120}\) There may be a similar contrast in Anii between [j] and [i]/[ɪ], but no data has yet been found that exemplifies this—all known diphthongs end in high back vowels, not front ones.

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below after the discussion of coda consonants, but the rest of this section will focus on the analysis of short diphthongs.

There are some languages in which diphthongs have been argued to be short, but only in certain circumstances. For example, Clements and Keyser (1983) argue that in Chicano Spanish ‘allegretto’ speech, diphthongs are short (consisting of only one ‘timing unit’) across word boundaries (in the same environment in which they claim that long monophthongs are shortened). The evidence they cite for this fact comes partially from acoustic measurements done by Hutchinson (1974) which apparently reveal that such diphthongs have the same duration as single stressed vowels elsewhere. The specific facts are that underlying \( i + i \) sequences (where ‘+’ indicates a word boundary) surface as \( i \), underlying \( o + o \) becomes \( a \), \( a + a \) becomes \( a \), and so on. In the same environment in which long monophthongs shorten, diphthongs surface as short in some cases, and as (short) monophthongs in others, as shown in (19) (from Clements and Keyser 1983: 86):

\[
\begin{align*}
\text{(19) a. } i + u & \rightarrow \quad \ddot{i}u \\
i + e & \rightarrow \quad \ddot{i}e \\
i + o & \rightarrow \quad \ddot{i}o \\
i + a & \rightarrow \quad \ddot{i}a \\
b. \quad u + i & \rightarrow \quad \dddot{u}i \\
u + e & \rightarrow \quad \dddot{u}e \\
u + o & \rightarrow \quad \dddot{u}o \\
u + a & \rightarrow \quad \dddot{u}a \\
c. \quad e + i & \rightarrow \quad \dddot{e}i \\
e + u & \rightarrow \quad \dddot{e}u \\
e + o & \rightarrow \quad \dddot{e}o \\
e + a & \rightarrow \quad \dddot{e}a \\
d. \quad o + i & \rightarrow \quad \dddot{o}i \\
o + u & \rightarrow \quad o \\
o + e & \rightarrow \quad \dddot{e}o \\
o + a & \rightarrow \quad \dddot{o}a \\
e. \quad a + i & \rightarrow \quad \dddot{a}i \\
a + u & \rightarrow \quad a \\
a + e & \rightarrow \quad e \\
a + o & \rightarrow \quad o
\end{align*}
\]
As can be seen, in each case here, it appears that the first element of the diphthong either deletes or is shortened, and that mid vowels raise to high vowels when they are the first element of a diphthong.

As Clements and Keyser (1983) point out, the analysis of this data must involve several rules, and they suggest some possibilities—a rule whereby a vowel shortens before another vowel, a rule that causes a shortened, non-low vowel to raise, a rule that deletes a shortened low vowel, and a rule that shortens monophthongal VV sequences. This type of analysis, however, fails to account for the data for several reasons. One is that the ‘shortened’ diphthongs apparently have the same phonetic duration as a single stressed vowel. Secondly, the rules listed above result in an ordering paradox. Specifically, recall that /oo/ surfaces as [o] (and /ee/ as [e]). For this to occur, the rule that shortens monophonogal VV sequences must precede the raising rule. If the raising rule came first, /oo/ would become *[uo], which is not the correct output. However, the opposite ordering is needed to account for the fact that /ou/ becomes [u]. In this case, if the shortening rule preceded the raising rule, then the shortening rule would have no effect, and /ou/ would incorrectly surface as *[uu]. Thus, the analysis of this data leads to an ordering paradox, where one set of data requires a certain rule order, but other data requires a different order.

The solution to this problem, according to Clements and Keyser (1983) is a rule for Chicano Spanish allegretto speech that delinks the second vowel of any V + V sequence and relinks it to the preceding vowel. The mid-vowel raising rule and the low vowel deletion rule are then presumed to apply to the first vowel in this doubly-linked sequence. The ordering paradox discussed above is avoided by what Clements and Keyser (1983) called the Twin Sister Convention, which they assume is a general principle by which two identical entities linked to the same timing unit become only one entity (likely by delinking one of the elements, but this is not actually specified). This analysis depends on the assumption that the Twin Sister Convention is a part of universal grammar, and applies whenever its triggering condition is met. In a theoretical view where such conventions do not exist, a rule would have to be assumed that applied at least twice within the derivation to achieve the same effect. Either way, assuming that V
+ V sequences are multiply linked to a single ‘timing unit’ allows for a straightforward analysis of an otherwise unanalyzable set of data. This fact suggests that the diphthongs in this position in this dialect are, in fact, short—or in moraic terms, monomoraic (though Clements and Keyser’s analysis was not carried out in moraic theory).

The important point here is that Clements and Keyser (1983) assume in their analysis that the acoustic shortness of the Chicano Spanish diphthongs found in acoustic measurements is not just a phonetic fact, but in fact is the phonetic realization of a phonological fact, namely that these diphthongs only have one ‘timing unit’, unlike other diphthongs in Chicano Spanish, which presumably have two ‘timing units’. Thus, in Chicano Spanish, it seems that diphthongs across word boundaries are phonologically monomoraic, while within words, diphthongs are bimoraic. A similar situation, i.e. where diphthongs are claimed to be generally long, but are short in certain circumstances, has been claimed to obtain in Finnish (cf. Keyser and Kiparsky 1984).

Another example of a language with both short and long diphthongs is Tohono O’odham, as described by Miyashita (2002). According to Miyashita, there are two types of diphthongs in Tohono O’odham, one type where [i] is one of the elements of the diphthong (the first or the second), and a second type of diphthong that does not contain [i]. Apparently, the diphthongs containing [i] can occur in either stressed or unstressed syllables, but those which do not contain [i] can only occur in stressed syllables. Interestingly, Miyashita claims that this language has a similar contrast between long and short monophthongs, in that short monophthongs can occur in both stressed and unstressed position, but long monophthongs only occur in stressed position. Based on this, Miyashita terms diphthongs that contain [i] ‘short’ diphthongs, and those that do not contain [i] ‘long’ diphthongs.

The difference in distribution between stressed and unstressed syllables is illustrated in Miyashita (2002) using a reduplication process which is used in plural or distributive forms. The reduplicant in this case is the first CV of the base. Data illustrating this reduplication process, taken from Miyashita (2002), are given in (20). Forms with ‘short’ diphthongs are in (20a) and forms with ‘long’ diphthongs are in (20b).
The example in (20c) are monophthongal examples provided for comparison. Note that in these transcriptions, the symbol ’ refers to stress on the marked syllable, not to H tone:

<table>
<thead>
<tr>
<th>Base Form</th>
<th>Reduplicated Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. háiwañ</td>
<td>háhaiwañ</td>
<td>‘cow’</td>
</tr>
<tr>
<td>píon</td>
<td>pípion</td>
<td>‘employee’</td>
</tr>
<tr>
<td>b. háupal</td>
<td>háhupal</td>
<td>‘red-tailed hawk’</td>
</tr>
<tr>
<td>kóa</td>
<td>kóka</td>
<td>‘forehead’</td>
</tr>
<tr>
<td>c. máagina</td>
<td>mámagina</td>
<td>‘car’</td>
</tr>
<tr>
<td>tóobï</td>
<td>tótobï</td>
<td>‘rabbit’</td>
</tr>
</tbody>
</table>

Miyashita’s analysis of the difference between (20a) and (20b) is that the ‘heavy’ diphthongs in (20b) cannot occur in unstressed position, where they would be after reduplication occurs, so they simplify to monophthongs. A similar process appears to be happening with the long monopthongs, which shorten in the same position, as shown in (20c).

Tohono O’odham also seems to have a word minimality condition (in that no word has less than two moras). There are apparently no words that consist only of a CV syllable. There are, however, words that consist only of ‘light’ diphthongs, such as [kúi], ‘tree’, [piu], ‘the sound an arrow makes’, and [mía], ‘near’. Miyashita argues that the ‘light’ diphthongs must become heavy in this case. She also points out that analyzing e.g. [kúi] as a CVC syllable (claiming the [i] is actually a glide) might work if the coda consonant were to become moraic (a fairly common cross-linguistic phenomenon, which is discussed further in the next section). The existence of words like [mía] are not so easily explained. According to Miyashita, if this word were actually [myá], it would not satisfy word minimality, since there is no lengthening of the vowel. Additionally, Tohono O’odham has no other complex onsets, so the onset [my] would be unexpected in the language.

According to Miyashita (2002), then, some diphthongs in Tohono O’odham behave like monomoraic monophthongs, and some behave like bimoraic monophthongs. She concludes, therefore, that ‘light’ diphthongs in Tohono O’odham are monomoraic.

121 Miyashita (2002) seems to use ŋ to represent a voiceless nasal.
(unless they become bimoraic because of their position in a monosyllabic word, where minimality requires bimoraicity), and that ‘heavy’ diphthongs are bimoraic.

Another language in which it has been claimed that some diphthongs are heavy (i.e. bimoraic) and others are light (i.e. monomoraic) is North Saami (Baal, Odden and Rice 2012). According to this analysis, diphthongs in North Saami are usually long (heavy), but diphthongs may be short (monomoraic) under certain phonological conditions. The argument is that high-vowel diphthongs ([ie] and [uo]) are short before certain ‘over-long’ consonants (e.g. [gūosssi], ‘guest, nominative singular (n.s.)’, [mīehhki], ‘sword, n.s.’, and [bīemʔmat], ‘to feed’), and before consonant clusters when the vowel of the following syllable is not [ɑ] (e.g. [gūowwlu], ‘area, n.s.’, [giełldu], ‘prohibition, n.s.’). Additionally, mid-vowel diphthongs ([ea] and [oa]) are short before the overlong consonant [hh] that is derived from certain pre-aspirated consonant forms (e.g. [sèahhka], ‘sack’, and [ōahhpə], ‘teaching’).

The details of why and how certain diphthongs are short in North Saami are far too complex to go into here in detail, since they involve the interaction of several different types of long and short consonants as well as long and short vowels and diphthongs. The analysis provided in Baal, Odden and Rice (2012) may be relevant, however, to the analysis of Anii short diphthongs because of the detail of their prosodification analysis. For example, they propose rules for syllabification and moraification which include mechanisms for creating short diphthongs in certain contexts. With the removal of the contextual restrictions, this type of rule can be used to account for the Anii data. A key element of Baal, Odden and Rice’s analysis is that they assume very little underlying moraic structure, allowing them to account for typologically unusual syllable structures with appropriate rules. A similar approach will be taken for Anii in the following section.

Because diphthongs appear to pattern with long vowels in so many languages, researchers have not often needed to account for short diphthongs in their claims about moraification and syllabification (if indeed they have made such claims explicit at all). Because of the unusual contrast found in Anii, it is important that any assumptions made here about prosodic structure can account for the difference between long monophthongs,
short diphthongs, and CVC stems. In the next section, I briefly outline my assumptions about prosodification in Anii, since the syllable structures derived here are the basis for the analyses presented in the following chapters.

5.2.2.2 Prosodification in Anii

The account of prosodification given in this section is mostly based on concepts from Kahn (1976) as developed under moraic theory by e.g. Dell and Tangi (1992). The precise implementation proposed here is closely related to Baal, Odden and Rice’s (2012) analysis of North Saami, with some modifications to account for the particularities of Anii. The basic steps are moraification, syllable projection, onset creation, and coda creation. Additionally, in order to account for the lexical contrast between long and short monophthongs, I will assume that some moras are lexically assigned.

The first rule needed to account for prosodic structure in Anii is Vowel Moraification. This rule, as given in (21), states that every vowel that follows a consonant projects a mora. The symbol μ represents a mora:

(21) **Vowel Moraification**

\[
\mu \leftarrow \emptyset \quad \text{(21)}
\]

C V

The condition that vowels only project a mora if they follow a consonant is an Anii-specific one, which may be linked to a historical preference for monomoraic syllables, but is now just a feature of the synchronic grammar.

Three more rules are needed to account for basic syllable structure. These are general prosodification rules which presumably apply in most (if not all) languages. The first of these rules is Syllable Projection, given in (22) below, by which vocalic syllable heads (i.e. vowels that serve as the peak of a syllable) project syllables. In some languages, it may be possible to simply say that every mora projects a syllable, but this is

---

122 The symbol ‘Ø’, meaning ‘nothing’ is used to indicate that an entity was inserted (i.e. from nothing to something). In this case, μ ← Ø means that a mora is inserted.
not the case in Anii, given the existence of long vowels, i.e. a vowel linked to two moras (as will be shown below), within the same syllable. Of course, a vowel cannot be defined as a syllable head before the projection of a syllable. I therefore assume that syllable projection only applies to the first vowel in a vowel sequence. Formally, this fact is accounted for by assuming that syllable projection is generally triggered by unsyllabified vowels (i.e. vowels which are not part of a syllable). Unsyllabified vowels are assumed to trigger the moras to which they are attached to project a syllable. This process, however, occurs only once in a vowel sequence, since once a syllable has been projected, the vowel in question is no longer unsyllabified. Therefore, if there is more than one mora attached to that vowel, the rule only applies to the first one. This rule is given below, where the symbol $\sigma$ indicates a syllable, and $V_{\text{unsyll}}$ indicates an unsyllabified vowel:

\begin{equation}
\sigma \leftarrow \emptyset
\end{equation}

The second prosodification rule is Onset Creation, given in (23), by which unsyllabified consonants attach to the syllable to which the vowel to their right belongs.

Finally, Coda Creation (in (24)) syllabifies syllable-final consonants.\textsuperscript{125}

\textsuperscript{123}There is no strong evidence to preclude the analysis of long monophthongs as bisyllabic in Anii. It is notable, however, that all of the long vowels in Anii are monophthongs—to my knowledge, there are no long diphthongs. If these long vowel sequences were in fact bisyllabic, there is no straightforward explanation for why there are no forms such as e.g. /be.a/. It is significant that in the approximately 350 verb stems I have elicited in various contexts, there are no bimoraic VV sequences. This gap does not appear to be accidental, and so it seems unwarranted to analyze long monophthongs as being bisyllabic. It may also be relevant that the only uncontroversially onsetless syllables in Anii are in word-initial noun-class prefixes/agreement markers, subject markers, or vowel-initial names (largely borrowed from Arabic). The analysis of syllabification proposed here actually precludes bisyllabic VV sequences, which is consistent with the facts of Anii.

\textsuperscript{124}I use the symbol ' ' in this dissertation to indicate floating entities only. This symbol could be used to also indicate lack of syllabification, as in the rule in (22), but such a use expands the meaning of the symbol so that it lacks precision. Thus, H' indicates a floating tone, but V' does not stand for an unsyllabified vowel, which is not necessarily floating.

\textsuperscript{125}Coda Creation accounts for the prosodification of non-moraic coda consonants. As will be discussed in
(23) **Onset Creation**

\[
\begin{array}{c}
\sigma \\
\mu \\
C_{\text{unsyll}} \\
V \\
\end{array}
\]

(24) **Coda Creation**\(^{126}\)

\[
\begin{array}{c}
\sigma \\
\mu \\
C' \\
\end{array}
\]

The rules in (22)-(24) are all that is needed to account for the basic prosodification of CV and CVC syllables, as is illustrated by the derivations in (25) (for CV syllables) and (26) (for CVC syllables):

(25) a. \( C \ V \)  
    Underlying Form

b. \[
\begin{array}{c}
\mu \\
C \\
V \\
\end{array}
\]  
    Vowel Moraification

c. \[
\begin{array}{c}
\sigma \\
\mu \\
C \\
V \\
\end{array}
\]  
    Syllable Projection

the next section (and the following chapters), word-final coda consonants can (and do, in Anii) become moraic through a Weight by Position (WBP) rule. For those final consonants, it would possibly be simpler to not syllabify coda consonants until after the application of the WBP rule. However, since the WBP rule does not apply to all coda consonants in Anii, instead of potentially positing two separate syllabification rules (WBP and a separate rule for non-moraic codas) that apply later in the derivation, I assume that Coda Creation applies as a ‘normal’ prosodification process along with all the other prosodification rules, and that WBP as a separate rule (or set of rules) applies later, as will be discussed in the following chapters.

126 An alternative to this rule is to say that the coda attaches directly to the syllable, rather than the mora, as discussed with reference to example (9) above. In practice, there do not appear to be any strong theoretical effects of one of these structures over the other. I have simply chosen one possible alternative in this case.
Three more language-specific rules must be posited to account for the differing behavior of diphthongs and long monophthongs. To account for the monomoraicity of
diphthongs, I propose a rule that is a modification of the Diphthong Formation rules proposed for North Saami by Baal, Odden and Rice (2012). The modification here is to make the rule more general, since all Anii diphthongs are short, whereas North Saami diphthongs are only short in certain contexts. The Diphthong Formation rule needed for Anii is given in (27):

(27) **Diphthong Formation**

```
[\( \mu \)]
```

\[ V \rightarrow V_{\text{unsyll}} \]

This rule states that any unsyllabified vowel that follows an associated vowel will syllabify by linking to the mora of the vowel to its left. This is the only ‘extra’ rule needed to account for Anii diphthongs. Thus, diphthongal CVV syllables are syllabified as shown in (28):

(28) a. C \ V \ V \quad \text{Underlying Form}

b. \[ \mu \]

\[ C \ V \ V \quad \text{Vowel Moraification} \]

c. \[ \sigma \]

\[ C \ V \ V \quad \text{Syllable Projection} \]

d. \[ \sigma \]

\[ C \ V \ V \quad \text{Onset Creation} \]

e. \[ \sigma \]

\[ C \ V \ V \quad \text{Diphthong Formation} \]
To account for long (bimoraic) monophthongs in this system, I assume that certain morphemes have an underlying form that includes a pre-linked mora. When such a form projects another mora, there will be two moras attached to one vowel. One of these moras will project a syllable by Syllable Projection. There must then be a rule that syllabifies the second mora. Such a rule is given in (29):

(29) **Mora Syllabification**

Given the assumptions discussed above, the syllabification of monophthongal CVV forms would occur as illustrated in (30):

(30) a. Underlying Form

\[
\begin{align*}
C & \quad V \\
\end{align*}
\]

b. Vowel Moraification

\[
\begin{align*}
C & \quad V \\
\end{align*}
\]

c. Syllable Projection

\[
\begin{align*}
C & \quad V \\
\end{align*}
\]

d. Onset Creation

\[
\begin{align*}
C & \quad V \\
\end{align*}
\]
An interesting aspect of this view of syllabification is that the assumption being made here is that all underlyingly moraic vowels are long. While this is not a commonly-made assumption about vowels, it is quite parallel to a standard view of consonant length in moraic theory (cf. Hayes 1989, Baal, Odden and Rice 2012), i.e. the view that geminate consonants are underlyingly moraic, while singleton consonants are underlyingly non-moraic. That is, the Anii data seems to support a theory of prosodification in which length should always be represented as underlying moraicity. In such a case, the difference that has been observed between vowels and consonants with regard to syllable weight is due to the fact that underlyingly moraic vowels are crosslinguistically more common than underlyingly moraic consonants—not that they have inherently different structures. It is not clear, however, how the difference (if one needs to be made) between geminate and syllabic consonants fits in to such a theory, but it seems likely that the difference would relate to syllable projection. Syllabic consonants and syllable projection in Anii will be discussed shortly.

The rules given above can account for the moraic structure of most Anii syllable types, assuming that Vowel Moraification applies before the syllable-creation rules (Syllable Projection and Onset Creation), since moras cannot project syllables until the moras themselves have been projected. Also, the syllable-creation rules must precede Mora Syllabification and Vowel Lengthening unless these long vowels are to be considered bisyllabic, not just bimoraic.
There is one final type of syllable in Anii that has not been addressed in the analysis proposed so far. Anii does have some syllables whose peak is a consonant. A common example is the word /ń/, ‘I’, which is a syllable consisting only of a consonant. Such syllables can have an onset, as well, as in the third syllable of the word /ùsòmpìə/, ‘woman’. Because these consonants project a syllable, they must be attached to a mora before Syllable Projection. I assume that syllabic consonants are pre-linked to moras in the lexicon, and that there is a special syllabification rule that applies before any of the other rules that affect consonants (i.e. at the very beginning of the derivation, before everything except possibly Vowel Moraification and Syllable Projection (there is no way to tell the relative order for those rules). This specific syllable projection rule says that a mora that is attached to a consonant at the stage at which the rule applies will project a syllable. Other rules such as Onset Creation will then apply as expected. The proposed rule for syllabic consonants is in (31):

(31) **Consonantal Syllable Projection**

\[
\sigma \leftarrow \emptyset
\]

\[
\mu
\]

\[
C
\]

This section has provided an ordered set of prosodification rules that can account for the syllable structures that exist in Anii. This set of rules is assumed to apply before tone association, as will be discussed further in the following chapters. One issue that has not been dealt with in this section is why there is a tonal difference between stems containing diphthongs and those containing CVC stems, though the two types of forms have essentially the same underlying moraic structure, as was shown in (26) and (28). The following sections address this issue by discussing the cross-linguistic behavior of coda consonants with respect to syllable weight, and specific analysis of glides in Anii.

127 Another option here would be to assume that there is a special moraification rule that applies to syllabic consonants. There is no evidence in this case to know which option is better, so I have simply chosen one. Assuming that some consonants are underlyingly linked to moras in the lexicon is parallel to the assumption already made for long vowels, so I have gone in that direction here.
5.2.3 Coda Consonants in Moraic Theory

As was mentioned at the beginning of Section 5.2, CVC syllables can be either heavy or light, depending on the language. This cross-linguistic variability has been well documented and is not a controversial claim (cf. Hyman 1985, Hayes 1989, Morén 2001). The question of whether or not coda consonants can be weighted variably within a single language, however, has generated considerable debate.

Hyman (1985) makes the strong proposal that whether or not coda consonants can bear tone (i.e. have weight) is a language-specific parameter, and that if a language has moraic coda consonants, it will have them with respect to all phonological phenomena that are affected by syllable weight. Hayes (1989) also makes this strong claim in his initial formulation of the Weight by Position (WBP) rule, a language-specific rule by which consonants not syllabified as syllable onsets are automatically linked to a mora. Languages where CVC syllables are light are assumed by Hayes not to have such a rule. This parametric view of WBP has been assumed by other scholars as well (cf. Zec 1988).

This strong proposal was, however, found to be too strict by data such as that from the Uto-Aztecan language Cahuilla, as analyzed in Hayes (1994). In Cahuilla, according to Hayes, quantity-sensitive stress assignment rules normally treat CVV(C) syllables as heavy and CVC syllables as light. However, there is a morphological process of ‘Intensification’ that adds a mora in certain positions. This added mora can attach to coda consonants, and the resulting CVC syllables are treated as heavy by the stress assignment rules of the language, unlike all other CVC syllables in Cahuilla. Additionally, Hayes (1994) discusses various Yupik languages where CVC syllables in certain prosodic positions (e.g. word-initially in Norton Sound Yupik) are heavy, but in other positions they are light, again for the purpose of stress assignment. Rosenthal and van der Hulst (1999) discuss similar instances—for example, they argue that word-final CVC syllables in Goroa are heavy, but non-final ones are light. This situation is similar in some respects to that found in Anii, as will be discussed in the following chapters.

It seems, then, that final consonant weight (syllable-final and/or word-final) can vary within a language, though all of the examples given above are related to prosodic position and stress assignment. Evidence for variable consonant moraicity within a
language can be provided by other phonological phenomena as well. For example, Hyman (1992) provides data suggesting that in Cibemba, coda nasals are moraic with regard to compensatory lengthening. That is, when coda nasals become one segment with a following consonant, the preceding vowel lengthens, suggesting that the nasal has a mora which delinks when the nasal becomes part of a prenasalized stop segment, and relinks to an adjacent vowel. This is illustrated in (32):

(32)  | **Underlying** | **Surface** | **Gloss** |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>/tu-ka-samb-a/</td>
<td>[tu-ka-saamb-a]</td>
<td>‘we will wash’</td>
</tr>
<tr>
<td>b.</td>
<td>/tu-ka-lind-a/</td>
<td>[tu-ka-liind-a]</td>
<td>‘we will protect’</td>
</tr>
<tr>
<td>c.</td>
<td>/tu-ka-fung-a/</td>
<td>[tu-ka-fuunga]</td>
<td>‘we will lock’</td>
</tr>
</tbody>
</table>

According to Hyman, however, those same nasals are not TBUs. The argument for this analysis consists of the fact that if there is a H tone in such forms, it spreads only one mora to the right, as illustrated in (33a-d), but that the nasal is not treated as a mora for the purposes of tone assignment, as shown in (33e-f):

(33)  | **Underlying** | **Surface** | **Gloss** |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>tu-ka-súm-a</td>
<td>[tu-ka-súm-ã]</td>
<td>‘we will bite’</td>
</tr>
<tr>
<td>b.</td>
<td>tu-ka-pútul-a</td>
<td>[tu-ka-pútul-a]</td>
<td>‘we will cut’</td>
</tr>
<tr>
<td>c.</td>
<td>tu-ka-léet-a</td>
<td>[tu-ka-léet-a]</td>
<td>‘we will bring’</td>
</tr>
<tr>
<td>d.</td>
<td>tu-ka-béelesh-a</td>
<td>[tu-ka-béelesh-a]</td>
<td>‘we will be familiar with’</td>
</tr>
<tr>
<td>e.</td>
<td>tu-ka-lúng-a</td>
<td>[tu-ka-lúng-ã]128</td>
<td>‘we will hunt’</td>
</tr>
<tr>
<td>f.</td>
<td>tu-ka-kúngub-a</td>
<td>[tu-ka-túngub-a]</td>
<td>‘we will gather’</td>
</tr>
</tbody>
</table>

Hyman (1992) also argues that in Runyambo-Haya, syllable-final nasals are not TBUs, but they are moraic with respect to reduplication. For example, he posited that there is a rule in some past tenses that a H tone is linked to the second mora of the verb stem. (34a) below illustrates the fact that long vowels have two moras when this H tone attachment rule applies, but coda nasals do not have a mora (i.e. VC sequences are monomoraic with respect to tone attachment in this case). Note that the final vowel of

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128 This is the surface form after compensatory vowel lengthening has also applied. The lengthened vowel appears to have the same tone as the unlengthened version.
the reduplicant is lengthened as part of the reduplication process if there is no preceding heavy syllable in the stem. (34b) shows that these vowels remain short if there is a preceding long vowel or a coda nasal within the stem, implying that said nasal becomes moraic in this setting. Note that the first ‘a’ of the reduplicated forms does not lengthen when there are two moras preceding it—there is some kind of minimality constraint at work here. All data given here is from Haya, taken from Hyman (1992):

(34) a. tu-[lim-il-e] ‘we cultivated’  
    tu-[siig-ir-e] ‘we smeared’  
    tu-[genz-ir-e] ‘we went’  

b. (ku-) lim-a → (ku-) lim-aa.lim-a ‘to cultivate’  
   (ku-) siig-a → (ku-) siig-a.siig-a ‘to smear’  
   (ku-) gend-a → (ku-) gend-a.gend.a ‘to go’

The data in (34a) illustrates an instance in which CVC syllables behave like CV syllables, whereas for the process in (34b) (in the same language), CVC syllables behave like CVV syllables.

Hyman (1992) initially attempts to explain these so-called ‘moraic mismatches’ using a derivational approach, positing that there are different numbers of moras available at different stages in the derivation. The specific proposal is that tone attachment occurs before some sort of mora insertion rule, and the other phenomena discussed above occur after that rule. A similar approach will be taken here with the Anii data in the following chapters, though Hyman does not ultimately take this approach himself, due to theoretical restrictions he assumed that are not being assumed here. Instead of the derivational approach, then, Hyman (1992) ended up claiming that “all moras contribute to weight, but only some count as TBUs” (Hyman 1992, 261). The proposal that syllable weight is measured differently for different phenomena was also made by Gordon (2006), who claimed that weight is specific to phonological processes rather than language-specific, based on survey evidence.

Morén (2001) provides yet another view of variable-weight phenomena. He proposes that there is a difference between ‘coerced weight’ and ‘distinctive weight’.
‘Coerced weight’ is weight imposed on segments by the environment they are in, and examples of this type of weight include the prosody-driven WBP phenomena discussed in Hayes (1994). In contrast, ‘distinctive weight’ is an underlying property of segments, i.e. is lexically-specified. The distinction between coerced weight and distinctive weight in Anii (which manifests in a difference in tone association behavior between moras inserted by a WBP rule and those that are there through other mechanisms) is accounted for in the analysis in this dissertation through rule ordering. It may be that making an analytical difference between these two categories of weight is only important in a formal framework in which ordering is not possible. This question is orthogonal to the goals of this dissertation, however, so the issue will not be discussed further here. What is important is that there are behavioral differences between these two types of weight that must be accounted for, whether by rule ordering or another mechanism.

An important point to emphasize here with regard to the analysis that will be proposed in this dissertation is that these types of variable-weight phenomena all apply to coda consonants, and that if coda consonants have acquired weight, whether from a WBP rule, or from some phenomenon-specific rule, then that consonant is moraic throughout the rest of the derivation (in that once a segment is associated with a mora, there can be no following rules referring to the fact that that mora was inserted later than other moras). I assume (contra the final analysis given in Hyman 1992) that any rule that makes reference to moras treats all moras equally on the weight tier no matter how the moras came to be there (though of course, rules can refer to other tiers as well, and therefore moras may be treated differently because of e.g. the segments they are attached to).

One final note that should be made in this section is that even (perhaps especially) if a consonant (especially a sonorant consonant) is not a TBU, the tone of the surrounding TBUs can affect the phonetic pronunciation of that consonant. For example, a sonorant consonant that follows a H toned vowel will also have high pitch (and any other phonetic correlates of H tone), while a consonant following a L toned vowel will have low pitch (and other correlates of L tone). These phonetic tones on consonants could of course be transcribed as tones. For example, if there were a monomoraic word ‘om’ with a H tone on the vowel mora, there are two possible transcriptions, [óm] and [ôm]. The problem
with the second transcription in this case is that it does not leave room to transcribe the fact that in some languages (like Anii, as will be shown below), some consonants bear tone phonologically and others do not. That is, both phonetic and phonological tone are transcribed in the same way in such a system. Therefore, in this dissertation, I will generally mark tone only on phonologically tone-bearing consonants (which are assumed to bear tone because they are moraic due to a WBP rule, as discussed in the following chapters). With regard to VV sequences, however, I mark both vowels with tone, even if the VV sequence is a diphthong, to make the difference between level tones and contour tones as clear as possible.

Now that possible analyses of diphthongs and final consonants have been thoroughly discussed, the final piece of the puzzle needed to analyze the unusual syllable structure contrasts in Anii is the analysis of glides. The next section therefore discusses the repercussions of the claims made above about diphthongs and final consonants for the analysis of glides in Anii.

5.2.4 The Representation of Glides in Anii

Recall that there is a distinction in Anii between e.g. [eu], a monomoraic diphthong, and [ew], a VC sequence that is underlyingly monomoraic, but bimoraic on the surface due to a WBP rule. That is, the [w] in this case behaves exactly like all other consonants in Anii, and not like the [u]. This fact is possibly surprising given certain assumptions that are often made about glides, most notably the assumption made by many researchers that glides such as [j] and [w] are featurally identical variants of [i] and [u] that occur in certain syllable structure positions.

A classic argument for this structural variant analysis comes from Levin (1985), who argues, based on several languages, most notably Klamath, that all glides are underlyingly vowels, and that they surface as consonants only when they are in specific positions in the syllable (i.e. non-peak positions). Specifically, the argument is that when these phonemes occur as the peak of a syllable, they surface as vowels (e.g. [u] and [i]), but when they occur in non-peak position, they surface as consonants (e.g. [w] and [j]). In this type of analysis, glides and high vowels have the same feature specifications, and
the difference between them is due entirely to syllable structure. The distinction here is thus comparable to that between any other consonant and its syllabic counterpart. Many other authors have made similar claims, under a wide variety of theories of syllable structure and syllable weight (cf. Clements and Keyser 1983, Kaye and Lowenstamm 1984, Steriade 1984, Rosenthal 1997).

A slightly different type of analysis is one that assumes that the difference between vowels and glides is a featural distinction (cf. Jakobson, Fant and Halle 1952, Chomsky and Halle 1968). For example, Chomsky and Halle (1968) proposed that vowels and glides were distinguished by the feature [syllabic], which was assumed to differentiate segments that constitute syllable peaks from other segments. This feature was only necessary, however, under the assumption that syllable structure itself did not play an important role in phonological theory. In the initial formulation of moraic theory, Hyman (1985) proposes the existence of very little syllabic structure (perhaps none in some languages). He can not, therefore, depend on underlying syllable structure to differentiate vowels from glides, so his proposal is that the difference between vowels and glides is a featural one. The specific proposal is that the feature in question is [consonantal]—vowels are considered to be [-cons], consonants are generally [+cons], and glides are (on the surface, though not necessarily underlyingly) also [+cons]. Like other analyses, Hyman assumes that in many cases, surface glides are underlyingly vowels (and thus underlyingly [-cons], in his analysis), but unlike many other authors, he also acknowledges the possibility that in some cases, surface glides are [+cons] both underlyingly and on the surface.

A key point about Hyman’s (1985) proposal, then, is that he considers the contrast between high vowels and high glides to be independent of syllable weight considerations. That is, he allows for the possibility that an underlyingly monomoraic sequence, e.g. /kia/ could surface either as [k’a], if the underlying [i] becomes [+cons], or as [kīa] with a short diphthong (if [i] remains [-cons]). Additionally, of course, he assumes that both VV

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129 The way that Hyman (1985) uses [consonantal] is not the way the feature was initially defined (for example in Chomsky and Halle 1968, vowels, glides and laryngeals are all [-consonantal]), and seems similar to other authors’ use of the feature [syllabic]. See Hume and Odden (1996) for further discussion of this issue.
and VG sequences can be potentially bimoraic. Hyman’s proposal thus allows for the possibility of a weight contrast between e.g. short and long diphthongs, and for a featural contrast between e.g. short diphthongs and VC sequences. In contrast, Hayes (1989) assumes that in general, vowels are underlyingly moraic, and glides are not. Hayes does follow Hyman, however, in saying that the difference between glides and vowels is most basically a feature contrast, not a weight contrast.\(^{130}\)

All of these analyses can account for languages where glides and high vowels are in complementary distribution (and in fact, such analyses were often developed to account for such data). Many of these analyses, however (with Hyman 1985 as an exception), do not allow for the possibility that some glides may not be derived from underlying vowels. As Levi (2004, 2008) points out, not all glides can in fact be analyzed as being underlyingly vowels. For example, Karuk (Herman 1994, Hume 1994, Levi 2004, 2008) is a language in which there is a contrast between surface [w] derived from a vowel (what Levi calls a ‘derived’ glide), and [w] that is underlyingly a consonant (what Levi calls a ‘phonemic’ glide).

These two types of glides differ in (among other things) their behavior across word boundaries. For example, Karuk has an alternation whereby supralaryngeal non-nasal sonorants surface as nasal before consonant-initial suffixes. This is illustrated in (36a) with the sonorant /r/. Glides that are underlyingly consonants also undergo this nasalization, as would be expected for sonorant consonants. This is illustrated in (36b). Finally, (36c) illustrates that glides derived from vowels are not subject to this nasalization pattern. The relevant segments are bolded in these examples:

\[
\text{(36) \quad Underlying Form} \quad \text{Surface Form} \quad \text{Gloss} \\
\begin{align*}
a. \quad /\text{kù:}\text{r-taku} / & \quad [\text{kù:}\text{n-taku}] \quad (*[\text{kù:}\text{r-taku}]) \quad \text{‘to sit on’} \\
& /\text{sìr-kara} / \quad [\text{sì:n-kara}] \quad (*[\text{sì:}\text{r-kara}]) \quad \text{‘to swallow} \\
b. \quad /\text{apiw-tih} / & \quad [\hat{\text{a}}\text{piw-tih}] \quad (*[\hat{\text{a}}\text{piw-tih}]) \quad \text{‘to be seeking’} \\
& /\text{asiw-ʃak} / \quad [\hat{\text{a}}\text{siw-ʃak}] \quad (*[\hat{\text{a}}\text{siw-ʃak}]) \quad \text{‘to close one’s eyes’}
\end{align*}
\]

---

\(^{130}\) Hayes’ (1989) reason for claiming this is that a syllable structure-based contrast would mean that syllables like [wu] and [yi] would violate a supposed universal constraint known as the Obligatory Contour Principle. This is not a very strong argument, but arguing against this point is not immediately relevant to the discussion at hand.
c. /asu-u-tih/ [ʔásu-w-tih] (*[ʔásu-m-tih]) ‘to be grumbling’
/ikri-u-ʧak/ [ikrí-w-ʧak] (*[ikrí-m-ʧak]) ‘to sit in the way’

Based on data of this type, Levi (2004, 2008) proposes that the difference between derived and phonemic glides is a featural one\[131\], with derived glides being featurally identical to vowels, and phonemic glides having a different feature matrix.

Hume (1994) comes to similar conclusions (also based on data from a variety of languages, including Karuk) regarding the fact that cross-linguistically, there are two types of glides, i.e. those that pattern with vowels and those that pattern with consonants. She provides an analysis based on the feature geometry of Clements and Hume (1995), whereby the difference between glides that are underlyingly consonants and those that are underlyingly vowels is based on whether the segments in question are assigned V-place or C-place features. This type of analysis is purely structural, and does not rely on a specific feature difference, but does take into account the crucial fact that the difference between vowels and glides (at least in some languages) is not due completely to syllable structure. Since questions of feature geometry are orthogonal to the questions addressed in this dissertation, I will leave a comparison between Hume’s (1994) and Levi’s (2004, 2008) proposals for future research. The important point to be made here is that there are two types of glides (vocalic and consonantal) known in the world’s languages, one type that behaves like a vowel, and another that behaves like a consonant.

It is clear that glides in Anii must be underlyingly consonants, since CVG syllables have different tonal patterns from both long vowels and diphthongs, and behave (tonally) exactly like other CVC syllables. The important issue for the tone analysis to be presented here is that long monophthongs are bimoraic after prosodification, diphthongs are monomoraic throughout the derivation, and VC syllables (including those with final glides) are monomoraic after prosodification, but become bimoraic during the derivation due to a WBP rule. These facts suggest that, as in e.g. Karuk (Hume 1994, Levi 2004, 2008), glides and high vowels in Anii are separate phonemes. It thus seems likely that

\[131\] Specifically, Levi’s analysis is couched in Revised Articulator Theory (RAT), but the specifics of the features involved are not relevant here, since a detailed discussion of alternate feature geometries is beyond the scope of this dissertation.
there is some feature-related difference between vowels and glides, since such a difference is needed to explain why the Anii WBP rule affects final glides, but not the final high vowels of diphthongs.

For the purposes of this dissertation, I will follow Hyman (1985) in assuming that the featural difference between vowels and glides is the feature [consonantal] in the way that Hyman used it (i.e. that vowels are [-consonantal] and glides are [+consonantal]—similar to the older feature [syllabic]). Thus, I assume that in Anii, all consonants (including glides) are underlyingly [+consonantal], and that all vowels (including high vowels) are [-consonantal]. I will make no claims regarding feature geometry here, though a more detailed featural analysis of Anii glides would be an interesting subject for future research.

All of the syllabification issues that affect the tonology of the Anii verb complex have now been discussed. The remainder of this chapter addresses some remaining foundational issues with regard to the analysis of tone.

5.3 Underspecification of Tone

There is an on-going discussion in the tonological literature about the role of underspecification in tonology (cf. Clements 1984, Pulleyblank 1986, Cassimjee 1998, Cahill 2007, Hyman 2011). Specifically, the question that needs to be addressed in any tonological analysis is whether all the surface pitch patterns in a given language reflect actual tonological entities, or whether some pitches are in fact the phonetic realizations of phonologically toneless syllables. Additionally, for pitches that reflect phonological entities, the question is whether such tones are underlyingly present or are supplied by rule during the derivation. This section discusses the types of evidence that can speak to these questions in a given language.

A common type of argument for the existence of phonologically toneless TBUs centers around the phonological inertness of certain tones. By phonological inertness, I mean the lack of evidence that a given tone interacts with other tones (for example, forms contours or conditions phonological processes). A classic example of an inertness
argument comes from Yoruba, as described by Pulleyblank (1986). According to Pulleyblank, syllables with surface M tones in Yoruba are underlingly toneless, while both H and L tones are underlingly specified. For example, the forms in (37) illustrate a lack of tonal interaction between M tones and other tones in the case of vowel elision. Note that the ‘ˌ’ under the vowels is a Yoruba-specific marking that indicates that the vowel is \([-\text{ATR}]\). Vowels without such marking are \([+\text{ATR}]\). The symbol ‘ş’ represents the sound [ʃ]:

(37)  | Un-elided form | Elided form | Gloss  |
-----|----------------|-------------|--------|
  ri ġbá | rígá | ‘see a calabash’ |
  ri āsō | rāsō | ‘see cloth’ |
  ri ôbê | rôbê | ‘see soup’ |

According to Pulleyblank, if the M tones on the initial vowels of the nouns (the second word in each un-elided form) were specified, one would expect those tones to remain after the deletion of the vowel and have some effect on the surrounding tones (as, he claims, L tones do). Pulleyblank does not specifically discuss what type of interaction might be expected if M tones were specified, but one option would be a MH rising tone on the initial vowels of the elided forms. Another would be some kind of change in the surrounding tones (perhaps assimilation or dissimilation) due to the presence of M tones. Since there seems to be no effect of the M tone on surrounding tones, Pulleyblank then assumes that the M tone is not there when the vowel elision process in (37) occurs (and that the surface pronunciation is derived from a surface-level M fill-in rule).

There are, however, other ways that this data could be analyzed. For example, if Yoruba has specified M tones, the data in (37) could be explained by saying that there are specified M tones when this rule applies, but that they do not re-link to the following vowel after the vowel they were originally associated with is deleted (and the floating M

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132 In modern Yoruba orthography, the small vertical line has been replaced by a dot under the given symbols. I have kept the older orthography here because it was easier for me to type, since I do not have a Yoruba keyboard.

133 Note that according to Pulleyblank, a falling tone is apparently the result of a general rule of Yoruba by which L tones immediately preceded by H tones are realized as falling on the surface, a phenomenon which Pulleyblank explains with a H-spreading rule.
tones do not affect surrounding tones). Alternatively, if such tones did re-link, a
decontouring rule (e.g. a rule that causes M tones to delink when they share a TBU with a
following tone) could account for the lack of contours in this case. Which type of
analysis is ultimately simpler depends on the other facts of the language. For example, if
there were no rules in Yoruba that relied on the existence of a specified M tone (i.e. if no
M fill-in rule were ever needed), but there would be one or more rules needed to delink a
M tone if it were specified, then an underspecification analysis would account for the
facts more efficiently than the assumption that M is specified when the vowel elision
process in (37) occurs. On the contrary, if there are other phenomena in the language that
necessarily make reference to a specified M tone, that might not be the case.\(^\text{134}\)

Similar arguments referencing phonological inertness have been used by many
authors (cf. Kisseberth 1984, Hyman and Byarushengo 1984, Myers 1998, and many
others) to claim that in certain languages with a two-way tone contrast, L-toned TBUs are
(at least underlingly, and in some cases on the surface as well (cf. Myers 1998))
phonologically toneless. This type of argument from absence is not, however, fully
conclusive since it is possible that specified L tones could be present and still have no
effect on surrounding tones because they delink and/or delete, as discussed above.

A related issue is the question of whether positing an active entity rather than
tonelessness (i.e. the absence of an entity) in certain cases would complicate the analysis
required to account for linguistic phenomena (cf. Odden 2009). For example, in Digo
(Kisseberth 1984), it seems that the H of an underlingly H-toned object prefix surfaces
on a following verb stem (specifically on the penultimate syllable of the word). This is
illustrated in (38), where all the morphemes in these examples are L-toned except the
plural object pronouns /ú/, ‘us’ and /á/, ‘you (pl)/them’. The important contrasts are
bolded:

(38) a. kù-ràñţÌţ-à          ‘to insult’
    b. kù-mì-ràñţÌţ-à       ‘to insult me’

\(^{134}\) In fact, there does seem to be a contrast in Yoruba between M and MH contours on a single TBU due to
sentence-level phenomena (Laniran 1992), so it seems that Yoruba does have a specified M tone at
some point in the derivation.
c. kù-kù-râβiz-à  ‘to insult you (sg)’
d. kù-mù-râβiz-à  ‘to insult him/her’
e. kù-ù-râβiz-à  ‘to insult us’
f. kù-à-râβiz-à  ‘to insult you (pl)/them’

According to Kisseberth (1984), this pattern is due to a general rule in Digo whereby H tones from a variety of sources shift rightwards to surface on the penultimate vowel of the word.\textsuperscript{135}

For this type of long-distance shift to be analyzed with fully specified L tones (i.e. in a scenario where there are no toneless moras),\textsuperscript{136} the challenge would be to explain why a H tone can skip over a series of L tones without violating the No-Crossing Constraint (NCC). For example, the underlying form of (38e), assuming the presence of underlingly specified L tones, would be as shown in (39a). If the H tone were simply to move across a series of L tones, as shown in (39b), the NCC would be violated. Note that I illustrate the tones linking straight to the vowels here because I have no evidence regarding whether the mora or the syllable is the TBU in Digo (Kisseberth, who was working before moraic theory, assumed the TBU to be the vowel):

\begin{align*}
(39) & \text{a. } \begin{array}{c}
kù-
\end{array}
\begin{array}{c}
  \begin{array}{c}
    \text{ù-r a β i z a}
  \end{array}
\end{array}
\begin{array}{c}
  \begin{array}{c}
   \text{L H}
  \end{array}
\end{array}
\begin{array}{c}
  \begin{array}{c}
   \text{L L L L}
  \end{array}
\end{array}
\text{b. } \begin{array}{c}
kù-
\end{array}
\begin{array}{c}
  \begin{array}{c}
    \text{ù-r a β i z a}
  \end{array}
\end{array}
\begin{array}{c}
  \begin{array}{c}
   \text{L H}
  \end{array}
\end{array}
\begin{array}{c}
  \begin{array}{c}
   \text{L L L L}
  \end{array}
\end{array}
\begin{array}{c}
   \ldots
\end{array}
\end{align*}

As (39) illustrates, assuming the presence of specified L tones in this case would require an analysis that delinks the L in between the H and the penult, to prevent violation of the NCC.

\textsuperscript{135} The exact details of how Kisseberth (1984) proposes these forms are derived are quite complex and mostly not relevant here. In particular, I am glossing over the effects of certain types of consonants on the tone shift. What is important is that the ultimate results of the shift are that the H tone surfaces on the penult in the relevant forms.

\textsuperscript{136} The possibility that Hs and Ls are both specified for some TBUs, but that there are also toneless TBUs (a plausible analysis in many cases) is discussed towards the end of this section.
Even more tellingly, there is not always only one L between the underlying position of the H tone and the surface position of that H tone in cases of tone shift in Digo. Observe the data in (40), illustrating present tense forms. The only H tone in any of these forms is lexically part of the third-person singular pronoun /á/. The first-person singular pronoun is /ni/, /nà/ is the present tense marker, the verb stem is the part of the form that changes, and the final /à/ is a morpheme referred to as the ‘final vowel’, a common phenomenon in Bantu languages. The relevant tonal contrasts are bolded, as above:

(40) a. ni-nà-ráβíz-à  ‘I am insulting’
    à-nà-ráβíz-à  ‘He is insulting’

b. ni-nà-gándámíz-à  ‘I am pressing’
    à-nà-gándámíz-à  ‘He is pressing’

c. ni-nà-ônjèrèz-à  ‘I am adding to’
    à-nà-ônjèrèz-à  ‘He is adding to’

The important point here is that in (40a), there are two surface L tones between the underlying location of the H tone and its surface location. In (40b-c), there are three. If L tones are not specified at the time of the shift, this data is easily accounted for. The rule would simply need to say that the H tone delinks from its original location and links to the penultimate TBU in the word. If L tones are assumed to be specified when the shift occurs, however, all of the intervening L tones would have to delink before the H movement could occur. That is, in (40a), the two L tones between the underlying position of the H and its surface position would be required to delink before the shift could occur (to avoid violating the NCC). In (40b-c), three L tones would have to delink, since there are three L tones between the pronoun and the penult.\(^{137}\)

Because the number of L tones between the original location of the H and its surface location varies, it is actually impossible to formulate an autosegmental rule to account for this data if L tones are fully specified when the shift occurs. That is, there is

\(^{137}\) Of course, the L tone of the penult would also ultimately have to delink in all of the examples in (39) and (40), since there are no contour tones there, but that is not relevant to the current argument, and does not occur in all cases (recall that I am not addressing the very interesting data regarding the consonantal effects on tone in Digo—see Kisseberth 1984 for a fuller discussion of this issue).
no way to formalize fact that every L tone between the underlying location of the H tone and the penult deletes, since the number of those L tones is variable. Evidence such as this, i.e. evidence that positing a specified L tone would actually complicate (or make impossible) a proposed analysis, supports the claim that a given language does not have underlying L tones, at least not in those specific positions (though it does not preclude the possibility that L tones become specified at some point in the derivation after such rules have applied, or that there are other TBUs in the language that are toneless, as discussed below).

In other cases of two-way tone contrast (cf. Clements 1984, Hyman 2010a, Beavon-Ham 2012), claims have been made that both H and L tone are underlying phonological entities. This claim is generally made because both tones are active in the phonology in some way. For example, Clements (1984) describes phonologically active L tones in Kikuyu (Gĩkũyũ), and suggests that L tones must be actual phonological entities. According to Clements, there are six different tonal patterns (which he calls ‘tone classes’) found on Kikuyu nouns, all of which point to the existence of a phonological L tone. The facts are complicated, but the most straightforward examples are words which contain a final rising tone on a single TBU.138 These patterns are exemplified in (41), from Clements (1984: 284), where sentence-final forms are given. Note that the first syllable of each form is the noun-class marker, which is always L-toned, and not part of the pattern of the tone class. Lack of tone marking indicates L tone here:

(41)  

<table>
<thead>
<tr>
<th>Tone Class</th>
<th>Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>moyatẽ</td>
<td>‘bread’</td>
</tr>
<tr>
<td>LHL</td>
<td>kañamõ</td>
<td>‘small animal’</td>
</tr>
</tbody>
</table>

A key feature of Kikuyu tonology, according to the analyses presented in Clements and Ford (1979) and Clements (1984) (among other works) is so-called ‘tone shift’. In this particular example, the result of tone shift is that the tone pattern associates to the second syllable of the noun stem. The important point here is that when LH-initial patterns link

138 Clements (1984) argues that the syllable is the TBU in Kikuyu.
to the final syllable of a word, a rising tone is possible. Without specified L tones, rising
tone on a single TBU would be impossible. Since these contours are the result of
association rules, this data suggests that L tones are underlyingly specified.

Another type of evidence for a specified L tone comes from Saxwe (Beavon-Ham
2012), a Kwa language spoken in southern Benin. According to Beavon-Ham, Saxwe
exhibits both falling and rising tones on single moras due to processes of H and L
spreading. Observe the sentences in (43), where the underlying form is on the left and
the surface form on the right:

<table>
<thead>
<tr>
<th>Underlying Form</th>
<th>Surface Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>/òtú sè/</td>
<td>[òtú sê]</td>
<td>‘A gun heard’</td>
</tr>
<tr>
<td>/òkã sè/</td>
<td>[òkã sê]</td>
<td>‘A cord heard’</td>
</tr>
</tbody>
</table>

Note that with the H-toned subject in (42a), there is rightward spreading onto the L-toned
verb stem, which results in a falling tone on the verb stem. If the TBU of the stem were
toneless when spreading occurred, the spreading could not result in a contour tone on that
TBU. If a H tone spreads to a toneless TBU, that TBU becomes H toned.

It seems clear, then, given the presence of contour tones on single TBUs, that
Saxwe does have a specified L tone, at least at the stage in the derivation when the
spreading occurs. However, according to Beavon-Ham (p.c.), it is possible that while
both H and L tone are underlyingly specified in Saxwe, some TBUs are unspecified for
either H or L tone. That is, there may be a H/L/toneless contrast. More research is
needed to confirm this for Saxwe, but such claims have been made for other languages
(cf. Mutaka 1994, McPherson 2012). A classic example of this type of contrast comes
from Margi (Pulleyblank 1986). According to Pulleyblank, in Margi, both stems and
suffixes have either H or L tone on the surface. Additionally, some stems and suffixes
have fixed tones, either H or L (as shown in (43a)), and for others, their tone is variable,
being determined by the stem or suffix to which they are attached (as shown in (43b)).
(43c) illustrates that when toneless stems and suffixes are put together, they both surface

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as L, indicating that some L tones in Margi are specified, and some are the phonetic pronunciation of toneless syllables:

(43) Underlying Surface Gloss

a. ná + dă mbù + ŋgáří
   nádă mbùŋgáří *give me’ ‘to sew on to’
   H stem, L suffix H stem, H suffix

b. tsá + ri nà + ri
   tsáří nàří ‘to knock at’ ‘to tell a person’
   H stem, toneless suffix L stem, toneless suffix

c. fa + ri
   fàří *take many!’
   toneless stem, suffix

As has been demonstrated here, in a language with two surface tones (like Anii), there are several possibilities as to how those surface tones should be analyzed phonologically. First, both H and L tones could be underlyingly specified, as in Kikuyu (Clements 1984). Second, only H could be specified throughout the derivation, as has been argued for Chichewa (Myers 1998). Additionally, there could be a phonological H/L/toneless contrast, as in Margi (Pulleyblank 1986). Of course, even if toneless TBUs are posited to exist underlyingly, it is possible that a specified L tone could be introduced on these syllables at some point in the derivation, in cases where some tonal processes are better analyzed with a H/toneless contrast, and others with a H/L or H/L/toneless contrast. This type of analysis was proposed, for example, for Luganda by Hyman, Katamba and Walusimbi (1987).

As will be seen in the following chapters, the tonology of the Anii verb complex can be best described and analyzed without assuming underlyingly specified L tones. For example, as will be shown in Chapter 6, the proposed rules of tone association and spreading are much more straightforward without assuming the presence of specified L tones, and Anii has no contour tones on a single TBU. I also know of no tonal phenomena outside the verb complex that require positing the existence of underlying L tones in Anii, though it is possible that future research will discover such phenomena. I assume, then, that there are no underlying specified L tones in Anii. Additionally, all the

139 A possibility that has not been mentioned here is that of a toneless/L system, in which only L tone is specified, as has been argued for languages such as Ruwund (Nash 1992-94). Since Anii very clearly does not have such a system, I do not discuss this option in detail here.
data presented in the following chapters can be accounted for most simply without positing the existence of specified L tones at any point in the derivation. I therefore assume that the surface H/L contrast in Anii is phonologically a H/toneless contrast, and that the lower pitch of the toneless TBU's is the result of phonetic implementation. Evidence in support of this analysis is found in the following chapters.

5.4 Downstep

As has been briefly mentioned above, and will be discussed more extensively in the Chapters 6 and 7, downstep is an important feature of Anii tonology. Downstep is a phenomenon that most often affects sequences of H tones, though there have also been claims that some languages have downstepped mid or L tones (cf. Hyman and Tadeju 1976, Beavon-Ham 2012). Since there is no evidence that Anii has downstepped L tones, or any mid tones at all, I will focus only on H tones here. Downstepped H tones are H tones which are pronounced at a distinctly lower pitch than the immediately preceding H tone(s). Additionally, downstep has the effect of lowering the entire pitch register, so that not only is a downstepped H tone lower than its pre-downstep counterpart, but all following H tones remain at the lowered pitch level, and L tones following a downstep are also lowered relative to pre-downstep L tones.

There are two common theoretical accounts for downstep that should be considered here. One is that downstep is caused by a floating L tone, i.e. that the sequence H'H is actually H L' H, i.e. a floating L between two H tones (cf. Connell 2011). This view is based on analogy with another tonal phenomenon known as ‘downdrift’, or ‘automatic downstep’. In languages with downdrift, L tones consistently lower the entire pitch register, so that H (and L) tones after a L are always pronounced lower than H tones before that L tone. Downdrift is also referred to as automatic downstep because this lowering process occurs with every L tone in a given utterance. Analyzing downstep as being a floating L tone makes sense in languages that have downdrift, since in that case, downstep is simply a special case of an already-attested process. In languages without downdrift (and perhaps even without specified L tones), however, assuming that
downstep is due to the presence of a floating L tone is not necessarily the simplest solution.

The floating L analysis for downstep is questionable, for example, in languages such as Kishambaa (Odden 1986, 1995). In Kishambaa, according to Odden, downstep occurs between two adjacent H tones at a morpheme boundary, for example with the concatenation of H-toned words. An example (from Odden 1982, 1995) is given here:

(44) a. ηgó'tó ‘sheep’
    b. dú ‘only’
    c. ízáfá ‘they died’
    d. ηgó’tó dú ízáfá ‘only sheep died’

There is no compelling reason why there would be floating L tones between all of the words in the sentence in (44d), so assuming that downstep is caused by a floating L tone here is stipulative at best.

Additionally, according to Odden (1982, 1986, 1995), Kishambaa has a contrast between words that have a level H tone pattern, and those with a H’H pattern. Representationally, this difference can be interpreted as the difference between a word containing a single multiply-linked H tone (where there is no downstep), and a word containing two separate H tones (where downstep occurs between the two Hs). This is illustrated in (45), taken from Odden (1995). The analysis here was not originally carried out in moraic theory, but it could easily be re-cast with the tones associating to moras instead of vowels:

(45) H H     H
    η w a n a n g o t o
    ‘child’ ‘sheep’

In this case, it seems that downstep is in some sense a dissimulation process, occurring when two identical tones are adjacent.
The major complication with the claim that downstep occurs (in a given language) in cases of H tone concatenation (rather than being caused by a floating L) is every time there is a sequence of adjacent H tones without downstep, some special provision must be made in the analysis. Generally, this means that a series of fusion rules are needed, by which adjacent H tones merge into one multiply-linked H in all the situations where downstep does not occur between H-toned moras.

Odden (1995) suggests that different accounts of downstep are relevant for different languages, with the analysis of downstep being partially dependent on the behavior of L tone in a given language, and other possible complexities of the analysis. Specifically, if the number of fusion rules required to uphold a H concatenation analysis is reasonably low in a given language, and there are other facts of that language that point away from a floating L analysis (for example if there is no other reason to assume that L tones are specified in that language), then the H concatenation analysis for downstep would be preferred. Because Anii does not have specified L tones and, as will be shown in Chapter 7, only two fusion rules are needed to account for the Anii data presented here, I posit that downstep in Anii is due to H concatenation rather than floating L tones. This issue will be discussed in more detail in the following chapters.

5.5 Conclusions

All the necessary theoretical background for the analysis of tone in the Anii verb complex has now been presented, along with empirical data about prosodification in Anii. This chapter has introduced autosegmental phonology and moraic theory, and discussed theoretical issues that are commonly raised in tonal analyses.

This chapter has also argued that all Anii diphthongs are monomoraic (but there is a contrast between monomoraic and bimoraic monophthongs), and that Anii has a Weight by Position rule. These claims will be further supported in the analyses to be provided in the following chapters. Additionally, it has been posited that Anii does not have specified L tones, and that downstep in Anii is the result of H tone concatenation, rather than floating L tones. Evidence supporting these claims is also presented below.
Chapter 6  
Lexical Tone in the Anii Verb Complex

This chapter will present data and analysis on lexical tone in Anii. Recall that lexical tone is a tone (or series of tones) that is part of a given content morpheme’s lexical entry. Lexical tone can be exemplified by minimal pairs, i.e. two words which are phonologically the same except for a difference in tone, but have different lexical meanings. This is illustrated with the Anii examples in (1), where stand-alone surface forms are given:

(1) a. ùʃilè ‘sun’  
ùʃilé ‘day’  
b. sɨɩlà ‘jump’ or ‘pay’  
sɪá ‘approach’  
c. dòodò ‘far away (in space or time)’  
dòódóó ‘be cold’ (used for animals or inanimate objects, not people)

Note that a given lexical tone may or may not be associated with a specific segment in the underlying representation. That is, the segment on which a tone is realized on the surface may be determined in the lexicon, or it may be the result of phonological processes or restrictions. Such phenomena are the focus of this chapter.

Section 6.1 introduces the basics of Anii tone, and Section 6.2 presents lexical tone on verb stems. Section 6.3 summarizes and discusses the analysis of lexical tone in the Anii verb stem, while section 6.4 addresses some aspects of tone on subject markers and TAM markers. Finally, Section 6.5 concludes.

140 A ‘content morpheme’ (as opposed to a functional morpheme) in this case is considered to be a morpheme that supplies the root meaning of a word, rather than modifying that meaning.
6.1 The Basics of Anii Tone

As discussed in Chapter 1, the earliest scholarship on Anii noted that tone plays an important role in the grammar, but no in-depth analyses of tone in Anii had been carried out before the work documented here. This section presents the basic claims about tone in Anii that provide the basis of the following analysis, as well as some tone data that support those claims. The data presented here is intended to provide the necessary background for the presentation of tone in the verb complex that will be the focus of this work. The claims that are made in this section are: 1) Anii has a two-way tone contrast on the surface, and that L tones are underlingly unspecified,\(^{141}\) 2) the mora is the TBU in Anii, and 3) coda consonants in Anii are not underlingly moraic (unless lexically specified to be), but word-final consonants are moraic on the surface due to a WBP rule.

Recall that Heine (1968b) mentioned that there seemed to be between two and four phonemic tone levels in his initial phonology sketch of the language, while Elwert (1977) asserted more decisively that Anii has two phonemic tone levels (a claim also made in this dissertation), but did not provide extensive data in support of this hypothesis. Evidence supporting Elwert’s claim that there are two phonemic tone levels in Anii can be provided by illustrating the possible tone patterns on two-syllable noun roots. Recall from Chapter 1 that Anii nouns consist of a noun-class marker (which in some cases is phonologically null) and a noun root. Roots generally have either one or two syllables, though they can be longer. A thorough analysis of nominal tone is beyond the scope of this work, but since tonal patterns on two-syllable noun roots are ideal for illustrating the extent of tonal contrasts in Anii, they are briefly discussed here.

There are four surface tonal patterns that occur on two-syllable noun roots (recall that noun-class markers are generally L-toned\(^{142}\)). These patterns are HH, HL, LH and LL, all the patterns that are logically possible with two phonological tone levels and one

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141 I will not come to a conclusion in this section as to whether there are specified L tones on the surface in Anii. Thus, when I talk about e.g. HL or LH patterns in this section, I am being purely descriptive, not making a claim about the phonological status of the lower pitch level.

142 There are a few cases where the noun-class prefix surfaces as H, e.g. [á-tó], ‘baboon’. There is reason to believe (from the behavior of possessive pronouns, for example) that these forms are underlingly vowel-initial stems (i.e. the underling form of ‘baboon’ is /á-átó/), and that the tone of an elided stem vowel is the reason the prefix surfaces as H-toned. Since this dissertation focuses on verbs, rather than nouns, however, further investigation of this issue will be left for future research.
tone per TBU on a bimoraic stem. These patterns are exemplified in (2), with HH nouns in (2a), HL nouns in (2b), LH nouns in (2c) and LL nouns in (2d):

(2) a. à-ŋórû CL.T-hair ‘hair(s)’
    gà-pîlì CL.C-old.person ‘old person’ (most often ‘old woman’)
    gi-pîlá CL.D-old.age ‘old age’
    gi-tântì CL.D-money ‘money’
    gi-ŋórô CL.D-wealth ‘wealth/power’
    gi-sîkpa CL.D-bamboo.peel ‘bamboo peel’
    gû-fîlû CL.Ɛ-bamboo ‘bamboo’
    gö-fåñá CL.Ɛ-idea ‘idea’

b. à-fålà CL.T-merchandise ‘goods to sell’
    i-tókò CL.U-shirt ‘shirts’
    ì-mâŋgò CL.W-mango ‘mangos’
    ñ-sûkò CL.Ɛ-horse ‘horse’
    gà-jâli CL.C-antelope ‘species of small antelope’
    ɲ-kântà CL.F-mathematics ‘math/calculation’
    ɲ-fînà CL.F-regret ‘regret’
    ɲ-kûrò CL.F-cloth ‘piece of cloth’

c. à-bàrì CL.Ɛ-animal ‘four-footed domestic animal’
    gà-tôlì CL.C-bracelet ‘bracelet/handcuff’
    gi-sànà CL.D-hospitality ‘hospitality’
    ò-làndà CL.Ɛ-cheek ‘cheek’
    gö-pîrá CL.Ɛ-arm ‘arm’
    gö-ŋànù CL.Ɛ-bowl ‘bowl/dish’
    ɲ-kômò CL.F-darkness ‘darkness’
    ɲ-tîmà CL.F-work ‘work’

d. ù-fålò CL.A-mouse ‘mouse’
    à-ràmà CL.Ɛ-ewe ‘female sheep or goat’
    à-fòmì CL.Ɛ-farmer ‘farmer’
    à-tôŋà CL.Ɛ-guinea.fowl ‘guinea fowl’
    gà-wàrà CL.C-field ‘field’
    gà-fålà CL.C-household ‘household’
    gi-ɲînê CL.D-eye ‘eye’
    ɲ-kîwà CL.F-bone ‘bone’

There is no pattern in meaning, or noun class, or anything else of that nature that could predict the tonal differences in (2), so the tones here are presumably lexical. The best explanation for this data is that there are four lexical patterns for two-syllable noun roots.

143 Arguments for why the mora is the TBU in Anii are given below.
The fact that these are the only attested patterns suggests that there are not more than two contrasting level tones in Anii.

Additionally, there are no contour tones in any of these examples. In fact, there are no contour tones in my data on noun stems that are longer than one syllable. There are also no contours on monomoraic stems. Compare the four possible tone patterns found on two-syllable bimoraic noun roots in (2) to the two possible patterns on monomoraic (CV) noun roots given in (3). (3a) illustrates stems that do not have a lexical H tone, and (3b) stems that do have a lexical H tone:

(3) a. à-rɛ CL.Ǝ-person ‘person’
    gă-ŋò CL.C-mirror ‘mirror’
    gi-dʒè CL.D-yam ‘yam’
    ū-fo CL.E-partridge ‘partridge’
    û-dò CL.E-neck ‘neck’
    gù-fè CL.E-shea.tree ‘shea tree (Vitellaria paradoxa)’
    gù-dò CL.E-forest ‘forest’
    bù-fì CL.G-oil ‘oil’

    b. à-ná CL.Ǝ-cow ‘cow’
    gā-nó CL.C-mouth ‘mouth’
    gò-tó CL.C-water ‘stream’
    gi-ʧā CL.D-bean ‘bean’
    û-fā CL.E-pocket.knife ‘pocket knife’
    gù-jó CL.E-tree ‘tree’
    ñ-fū CL.F-hat ‘hat’
    ŋ-kọ CL.F-liver ‘liver’

If multiple tones could link to one TBU, one would expect at minimum rising and falling tones on monomoraic noun roots, since HL and LH are attested noun root patterns. In actual fact, however, there only two possible tone patterns in CV noun roots, as (3) shows, or on any unequivocably monomoraic forms in Anii.

Contour tones are possible, however, on long vowels, where all four tone patterns can be found, just as for the bisyllabic examples given above. This is illustrated in (4):

144 These are the only examples of bimoraic nouns containing long vowels for which I have tone transcription. There are a good number of other examples of nouns containing long vowels, however, for which I do not yet have tonal data, so there are likely more examples.
It should be noted that Anii also has no tritonal (or longer) contours (e.g. LHL, HLH, LRL, HFH, etc.).

This distribution of tones is exactly what would be expected if the mora is the TBU in Anii, and there is some kind of restriction such that more than one tone per TBU is not permitted, or there are some number of decontouring rules that apply to tones that share a TBU. This distribution would also be expected, however, regardless of the nature of the TBU, if there are no specified L tones at the stage of tone attachment. I will actually argue here both that the mora is the TBU in Anii, and that there are no underlyingly specified L tones, but the data given thus far only shows that at least one (but maybe both) of these claims must be true.

In support of both of these claims, I will briefly discuss a grammatical tone pattern that will be fully analyzed in Chapter 7, but which is crucial to the question at hand. What is important about this pattern is how it surfaces on different types of verb stems. The examples in (5), illustrate this pattern. The first form in each letter is an unmarked clause, a form with no grammatical tone, which illustrates that these stems do not have lexical tone. The second form in each letter is marked with the TAM marker [bʊŋà] and a grammatical H tone on the verb stem that accompanies this marker. The verb stems are bolded in each case:

(5) a. ń.tsikilà  ‘I mixed.’
    ń bʊŋà tsikilà  ‘I mixed long ago.’
b. ń kàrà  ‘I got dressed.’
    ń bọŋà kàrà  ‘I got dressed long ago.’
c. ń bọ̀  ‘I prepared food.’
    ń bọŋà bọ̀  ‘I prepared food long ago.’
d. ń tọọtọò  ‘I stirred.’
    ń bọŋà tọọtọò  ‘I stirred long ago.’

What all the [bọŋà]-marked examples in (5) have in common is that they have an initial LH tone pattern. The simplest analysis of this fact is to say that there are no specified L tones when the grammatical H tone links—all that is required for such an analysis is a rule specifying where the H tone associates. In contrast, if the L tones were underlingly specified, the analysis of this pattern becomes extremely complicated.

The issue here is that tones are linearly ordered on the tonal tier. Thus, when the grammatical tone is added, if the melody is only a H tone, the only way it can associate after a pre-linked L tone without violating the No-Crossing Constraint (NCC) is if the initial L tone were first delinked and deleted. Similarly, if the grammatical tone pattern is LH (or LHL, LHLL, etc.), it could only associate once the underlyingly present L tones were delinked. The example in (6) illustrates the structure in question. (6a) gives the underlying tonal structure of the stem, assuming that all TBUs are underlingly specified for tone. (6b) shows the structure with the grammatical tone (if the grammatical tone pattern is simply a H tone).148 The tones are shown linked to vowels because the nature of the TBU is essentially irrelevant to this argument (though it will be argued shortly that the mora is the TBU in Anii):

(6) a. t o o t o o
    \_\_\_\_\_\_
    L L L L

b. t o o t o o
    \_\_\_\_\_\_
    H L L L L

148 I assume here that the grammatical tone is a prefix, though in principle it could also be a suffix. As the longer forms in (5a) and (5d) illustrate, however, assuming the grammatical tone to be a suffix would be problematic in the same way that assuming it to be a prefix is—assuming underlingly specified Ls, there are L tones intervening between the grammatical tone and its attachment location either way.
It is obvious from the structure in (6b) that the H tone cannot associate after the first L tone without violating the NCC. This fact is true no matter what the grammatical tone pattern is assumed to be. Thus, to derive the correct structure, one must assume that underlyingly specified L tones delink, and likely delete. It is a much simpler analysis to assume that those tones were never there in the first place, since such an assumption precludes the necessity of positing delinking rules. Similar arguments can be made with regard to the association of lexical H tones, as data given in the following section will illustrate.

Data like that in (5) (and that on lexical tone presented below), thus provides evidence that Anii does not have specified L tones at the point at which lexical and grammatical tone patterns link. In order to assume the presence of fully specified underlying L tones, it would also be necessary to assume that all the underlyingly specified L tones are deleted before the grammatical and lexical tone patterns come into play. Since there is not any evidence supporting the existence of such L tones, the type of data in (5) provides evidence that verb stem morphemes are almost certainly underlyingly toneless. This does not preclude the possibility that there are some underlyingly specified L tones in Anii (i.e. the possibility of a H/L/toneless underlying contrast), but since I have found no evidence of any underlying L tones thus far, I assume that Anii does not have them, at least not within the verb complex.

The next basic question to be addressed in this section is whether the TBU in Anii is the syllable or the mora. The data in (5) also speak to this question. Note especially that in [bôŋa]-marked examples in (5), the grammatical tone links to the second mora, whether that mora is in the first or second syllable. An important point is that in (5c) ([ń bôŋa tô tôôô], ‘I stirred long ago.’), this second-mora association results in a rising tone. Since there are no underlying L tones, if we assume that the mora is the TBU in Anii, this data is easily explained—the only association rule needed is a rule that says that the H tone links to the second mora.

If the syllable were the TBU in Anii, there would have to be several attachment rules. To explain the difference between (5a-b) (where the grammatical H tone is on the first mora of the second syllable) and (5c-d) (where the H tone is on the second mora of
the first syllable), it would have to be said that the grammatical H tone associates to the first syllable if it is heavy, and to the second syllable if the first syllable is light. Most crucially, there would have to be some kind of extra rule to account for the fact that the stem syllable with the grammatical H tone in (5c) (i.e. bɔ́ɔ) has a rising tone rather than a level H. This is because, as discussed in Chapter 5, if the syllable is the TBU, it is meaningless to say that a tone links only to half of a syllable—if a tone links to a syllable, it must link to the whole syllable. Thus, given the data in (5), the mora must be the TBU in Anii. Based on the evidence presented thus far, then, I will assume for the rest of this analysis that the mora is the TBU in Anii, as well as that (at least within the verb complex) L tones are not underlingly specified.

The last question to be addressed in this section is the question of whether or not coda consonants are moraic in Anii. The data in (7) illustrate the possible tone patterns on word-final CVC syllables. Interestingly, such syllables can bear HH, HL or LL surface tone patterns, but there is no evidence thus far that a LH pattern exists in this environment:

(7) a. ù-wóř CL.A-acquaintance ‘acquaintance’
dón ‘one’
ôróŋ ‘today’
b. bṍ CL.B.ball ‘ball’
lám ‘on/along’
gôŋ ‘like that/similarly’
gâtsôm ‘tomorrow’
c. ŋkiŋ ‘behind’

The fact that HH, HL and LL tone patterns, but not LH, can be found on final CVC syllables would be expected if 1) Anii does not have underlying L tones (as was argued above), 2) final consonants are not moraic at the stage of tone association, and 3) final consonants become moraic at a later stage due to a WBP rule. This is because if final consonants are not moraic when H tones link, they cannot receive a H tone at that stage (making rising tones unlikely), but if they become moraic later on, they can bear a H tone
that spreads onto them, accounting for the attested HH pattern.\footnote{149} Falling tones (as in (7b)) would be possible in this scenario if either there is a L tone fill-in rule that applies to all toneless TBUs after H attachment has occurred, or toneless TBUs are simply pronounced with a low pitch on the surface. Either way, the falling tones in (7b) can be accounted for in the scenario discussed above. The data in (7), then, provides preliminary evidence that Anii has a WBP rule.

More evidence that word-final consonants are in fact moraic on the surface comes from the grammatical tone form discussed earlier. Observe the forms in (8):

\begin{align*}
\text{(8)} & \quad \text{ń pàtìr} & \quad \text{‘I was stuck (to a flat surface).’} \\
& \quad \text{ń bọnjà pàtìr} & \quad \text{‘I was stuck (to a flat surface) long ago.’}
\end{align*}

Note that the LHL surface pattern of the stem in (8) is the same as the LHL surface pattern of the trimoraic stem in (5a) (i.e. tsikilà), but different from the LH pattern of the bimoraic stems in (5b-c) (i.e. kàrá and bòò). This suggests that this stem is trimoraic, rather than bimoraic, which means that the final consonant in this case must be moraic on the surface, confirming that Anii does indeed have a WBP rule.

Additionally, it should be noted that Anii also has some consonants that are likely underlyingly moraic, or at least are moraic before tone association. Syllabic consonants (which are likely underlyingly moraic, as was noted in Chapter 5) are in fact quite common in Anii. For example, as has been illustrated throughout the previous chapters, the first-person singular realis subject marker is /ń/, an entire word that consists only of a nasal consonant. Another example of a syllabic nasal is the Class F noun-class marker, as illustrated by several examples in (2). Liquids can also be syllabic in Anii. For example, the verb stem /plì/, ‘pursue’, has one syllable but no vowel,\footnote{150} as does /kì/, ‘to harvest straw’.

\footnotesize
\begin{itemize}
    \item \textbf{149} There could of course be other ways for a H tone to associate to a final consonant (e.g. the attachment of floating tone after the consonant becomes moraic), but there is no evidence of such processes in Anii.
    \item \textbf{150} As further evidence that there is no vowel in this word, I point out that it contrasts with stems containing both mid-central vowels of Anii, i.e. /pɔl/, ‘get/go around’, and /pil/, ‘be cooked’, so if there were a vowel here, it would be a vowel found nowhere else in the phonology of the language.
\end{itemize}

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As mentioned in Chapter 5, I assume that syllabic consonants are underlyingly moraic (or at least moraic at tone attachment, unlike the variably moraic consonants discussed above). Evidence in support of this assumption comes from data like that in (9a) below, where the second consonant is clearly moraic at the stage of tone association, in comparison with that in (9b) and (9c) where the second consonant is apparently not available for tone to link to. The relevant example is the second one for each stem, i.e. the examples with the grammatical tones. Recall that the grammatical H tone associates to the second mora in this construction:

(9)  a. ń pɛ̇mpɛŋe  ‘I cleaned.’
    ń bɔŋa pɛ̇mpɛŋe  ‘I cleaned long ago.’

  b. ń tsɔŋkɔrɔ  ‘I leaned.’
    ń bɔŋa tsɔŋkɔrɔ  ‘I leaned long ago.’

  c. ń sɔŋkɔr  ‘I separated.’
    ń bɔŋa sɔŋkɔr  ‘I separated long ago.’

The stem in (9a) has the same tone pattern as the quadrimoraic form in (5d) (i.e. [ń bɔŋa tɔotɔɔ]), and the grammatical H tone is on the [m], meaning that the consonant in this case must be moraic when that tone associates. The examples in (9b) and (9c), however, behave like trimoraic stems, and the grammatical H links not to the coda consonant of the first syllable, but on the following vowel, suggesting that the syllable-final consonants in the first syllables in these examples are not moraic. The difference in tone association illustrated in (9) is not predictable, and thus must be due to a lexical contrast, i.e. the contrast between consonants with underlying moras (or at least consonants that have moras at the stage of grammatical tone attachment) and those without.

It is possibly debatable (at least from a diachronic perspective) whether the [m] of [pɛ̇mpɛŋe] is in fact underlyingly moraic, because [pɛ̇mpɛŋe] is a lexically-reduplicated verb stem (see Section 6.2.3 below for more discussion), but it is clearly moraic before tone association (and thus before the WBP rule has applied). Additionally, the final consonants in non-reduplicated stems without vowels such as [pɪ], ‘pursue’ and [kɪ], ‘harvest straw’ are unquestionably moraic at tone association because they can bear
grammatical tone. For example, [ń bōŋə plí] means ‘I pursued long ago’ and [ń bōŋə kř] means ‘I harvested straw long ago’, whereas neither of those stems has a H tone in unmarked clauses (i.e. [ń plí], ‘I pursued’, and [ń kř], I harvested straw’).

Other than the word [pèmpèŋə] discussed above, there is no evidence that any word-internal coda consonants in Anii are moraic either underlyingly or on the surface. For example, in [imáŋgɔ], ‘mangos’ and [jíkóntå], ‘math’ from (2b) above, and [ólândå], ‘cheek’, from (2c), the tonal pattern is realized only on the vowels and the syllabic consonant of the noun class marker in one case. If the word-internal coda consonants in these words did bear tone, one would expect to find examples where such consonants bear H tones. I know of no such examples. In general, except for the example in (9a) above, there are no contour tones on word-internal CVC syllables in my data. There are many other examples of nouns with such word-internal CVC syllables (e.g. [ibéŋfï], ‘cash desks (class W)’, [gïrõŋfå], ‘type of bean (class D)’, [goŋjïkå], ‘younger sister (class E)’, and [gïŋjïfå], ‘path (class E)’, etc.). While much more work needs to be done on eliciting nominal tone patterns, out of my longest list of noun forms (229 nouns), 13 (or about 6%) have word-internal coda consonants, and none of those consonants have a H tone. This pattern is suggestive, but further research on nominal tone is needed to confirm that this lack of H tones on non-syllabic word-internal coda consonants in nouns is in fact representative of a significant gap in the language. The verbal data that is presented later in this chapter will show that the same pattern holds for word-internal coda consonants in verb stems.

The evidence given so far (and more to be presented below), then, suggests that in general, word-internal coda consonants in Anii are never moraic, but word-final consonants are moraic on the surface. The exceptions here are those consonants that are lexically specified as moraic before tone association. I assume that syllabic consonants fall under this latter category. In fact, since syllabic consonants, as discussed in Chapter 5, must project a syllable (since there are no vowels present in syllables containing syllabic consonants), they are presumably moraic at some stage in the prosodification process, which might suggest they are underlyingly moraic.\footnote{The question of how this analysis fits with the traditional assumption that geminate consonants are...}
This section has presented the basic facts of tone in Anii, along with some data that supports the claims being made. The specific claims made thus far are: that Anii has a two-way surface tone contrast, but L tone is not underlingly specified, that the mora is the TBU, and that coda consonant moraicity is variable for non-syllabic word-final consonants (i.e. Anii has a WBP rule that applies only to word-final coda consonants). The following section will begin the presentation and analysis of tone in the verb complex, building on these basic facts.

6.2 Lexical Tone in the Anii Verb Stem

The first step in analyzing tone in the Anii verb complex is to look at lexical tone on the verb stems themselves. Lexically speaking, there are two tonal classes of verb stems in Anii. One class consists of stems that have a lexical H tone, which will be referred to as H-toned stems. The second class of verb stems do not have a lexical H tone, and will be referred to as toneless stems. For the remainder of this dissertation, H-toned stems will be underlined, and toneless stems will be left in plain text to facilitate quick comprehension of the data in cases where phonological processes may obscure the underlying tone patterns.

Before further discussion of verb stem lexical tone in Anii, an important foundational point to make is that verb stems in Anii can range from one to three syllables in length, and from one to four moras. As is often the case in tonal analyses, the shorter stems are the most complex to analyze, so the basics of tone in longer stems will be presented first. Section 6.2.1 presents lexical tone on multisyllabic verb stems, while Section 6.2.2 discusses monosyllabic verb stems. Finally, Section 6.2.3 addresses the phenomenon of tone in lexically-reduplicated verb stems.

6.2.1 Lexical Tone in Multisyllabic Stems

Since there is no grammatical tone in unmarked clauses, these forms will be used to illustrate the lexical tone classes. The translations given throughout the tonology

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underlyingly moraic is worthy of continued investigation. Since Anii does not (to my knowledge) have geminate consonants, that question is not, however, immediately relevant here.

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section of this dissertation do not reflect all the possible meanings of each form, as those meanings were already discussed in previous chapters. For simplicity, just one possible meaning is given for each example below.

Example (10) provides a list of disyllabic toneless verb stems in unmarked clauses. Note that the subject markers also exhibit tonal differences, in that the first- and second-person realis subject markers have H tones, and third-person realis subject markers do not. All the possible subject marker types are briefly presented here, but tone on subject markers will largely be discussed in Section 6.4 below. The focus here is on tone in the verb stem:

(10) a. ń bidà  ‘I threw (it) away.’
    ó bidà  ‘You (sg) threw (it) away.’
    à bidà  ‘S/he threw (it) away.’
    gi bidà  ‘We threw (it) away.’
    í bidà  ‘You (pl) threw (it) away.’
    bà bidà  ‘They threw (it) away.’

b. ń bọŋà  ‘I turned my head.’
    ó bọŋà  ‘You (sg) turned your head.’
    à bọŋà  ‘S/he turned her/his head.’
    gi bọŋà  ‘We turned our heads.’
    í bọŋà  ‘You (pl) turned your heads.’
    bà bọŋà  ‘They turned their heads.’

c. ń dọŋò  ‘I made a field by burning.’
    ú dọŋò  ‘You (sg) made a field by burning.’
    ǝ dọŋò  ‘S/he made a field by burning.’
    gi dọŋò  ‘We made a field by burning.’
    í dọŋò  ‘You (pl) made a field by burning.’
    bà dọŋò  ‘They made a field by burning.’

d. ń jidè  ‘I stopped.’
    ú jidè  ‘You (sg) stopped.’
    ǝ jidè  ‘S/he stopped.’
    gi jidè  ‘We stopped.’
    í jidè  ‘You (pl) stopped.’
    bà jidè  ‘They stopped.’

152 In most of the forms with transitive verbs given in this chapter (and in Chapter 7), the object is implied, which I indicate by including objects in parentheses in the translations. These types of phrases would be used when the object is something that has been previously referred to in a conversation, or is well known to all parties in the conversation and does not need to be specified for understanding. Without explicit objects, these sentences are vague, but grammatical.
e. ñ kàrà  ‘I got dressed.’
ó kàrà  ‘You (sg) got dressed.’
à kàrà  ‘S/he got dressed.’
ğí kàrà  ‘We got dressed.’
i kàrà  ‘You (pl) got dressed.’
bà kàrà  ‘They got dressed.’
f. ñ kòlò  ‘I coughed.’
ó kòlò  ‘You (sg) coughed.’
à kòlò  ‘S/he coughed.’
ğí kòlò  ‘We coughed.’
i kòlò  ‘You (pl) coughed.’
bà kòlò  ‘They coughed.’
g. ñ ñòrà  ‘I am being quiet.’
ó ñòrà  ‘You (sg) are being quiet.’
à ñòrà  ‘S/he is being quiet.’
ğí ñòrà  ‘We are being quiet.’
i ñòrà  ‘You (pl) are being quiet.’
bà ñòrà  ‘They are being quiet.’
h. ñ ràŋò  ‘I heard.’
ú ràŋò  ‘You (sg) heard.’
à ràŋò  ‘S/he heard.’
ğí ràŋò  ‘We heard.’
i ràŋò  ‘You (pl) heard.’
bà ràŋò  ‘They heard.’

The reader will have noticed that all of the subject markers given in (10) refer to human beings. There are other third-person subject markers in Anii as well, specifically those which would be translated into English as ‘it’ or ‘they’, referring to objects or animals. These subject markers have the same form as the noun-class agreement markers, and could be analyzed as pronouns that agree in noun class with their antecedents. They are all toneless. Examples of these markers are in (11), with both [+ATR] and [-ATR] verb stems. All of these sentences would be uttered if there was a salient referent of the given class to which the pronoun could refer:

(11) a. ñ jìdè  ‘He/she/it (classes A, Ǝ, B) stopped’
à ñòrà  ‘He/she/it (classes A, Ǝ, B) is quiet’
b. gà jìdè  ‘It (class C) stopped’
gà ñòrà  ‘It (class C) is quiet’
c. gi jîdè  ‘It (class D) stopped’
    gi ṃrâ  ‘It (class D) is quiet’

d. ū jîdè  ‘It (class E) stopped’
    ṃ ṃrâ  ‘It (class E) is quiet’

e. ň jîdè  ‘It (class F) stopped’
    ň ṃrâ  ‘It (class F) is quiet’

f. bû jîdè  ‘It (class G) stopped’
    bû ṃrâ  ‘It (class G) is quiet’

g. bà jîdè  ‘They (classes Y, W) stopped’
    bà ṃrâ  ‘They (classes Y, W) are quiet’

h. bû jîdè  ‘They (class Ŭ) stopped’
    bû ṃrâ  ‘They (class Ŭ) are quiet’

i. i jîdè   ‘They (classes U, T) stopped’
    i ṃrâ   ‘They (classes U, T) are quiet’

The data given in this dissertation is largely limited to forms with personal subject markers, but the data in (11) illustrates that all third-person subject markers behave similarly.

With lexically H-toned stems, the lexical H tone surfaces on the second mora of the stem. This is illustrated in (12) with bisyllabic stems:

(12) a. ń bîlå  ‘I refused.’
    ú bîlå  ‘You (sg) refused.’
    à bîlå  ‘S/he refused.’
    gi bîlå  ‘We refused.’
    ì bîlå  ‘You (pl) refused.’
    bà bîlå  ‘They refused.’

b. ń bôdô  ‘I climbed.’
    ú bôdô  ‘You (sg) climbed.’
    à bôdô  ‘S/he climbed.’
    gi bôdô  ‘We climbed.’
    ì bôdô  ‘You (pl) climbed.’
    bà bôdô  ‘They climbed.’

c. ń bônó  ‘I finished.’
    ú bônó  ‘You (sg) finished.’
    à bônó  ‘S/he finished.’
    gi bônó  ‘We finished.’

153 With bimoraic stems, it would be possible to also claim that the H tone is attached to the final mora of the stem. This alternate analysis is ultimately not tenable, however, as will be shown below.
As can be seen from (10), (11) and (12), all the sentences containing first- and second-
person subject markers have a H tone on the subject marker, and all those with third-
person subject markers have no H tone on the subject marker. From now on, I will only
give data for first- and third-person singular sentences, and it can be assumed that
sentences with other subject markers predictably follow the patterns that have been
established here. Example (12) also illustrated that the lexical H tone of H-toned stems
surfaces on the second mora. This generalization will be shown to hold for other stem types, as well.

For example, Anii also has disyllabic stems that end in a consonant (recall from Chapter 1 that the only possible syllable-final—and therefore word-final—consonants in Anii are nasals and liquids), which are trimoraic on the surface, as argued in Section 6.1.1 above. Toneless examples are given in (13), and H-toned examples in (14). While this is an exhaustive list of stems of this type in my corpus, there are many other such stems in Anii whose tone transcription has not yet been established:\footnote{There is a long list of verb stems with final nasals (both bisyllabic and monosyllabic), which have been collected by a working group of Anii speakers in order to decide on the spelling of the final nasals. I have this list, but the group did not provide tone transcriptions, and I have not yet been able to elicit the transcriptions.}

\[(13)\]
\[
a. \text{ń kāŋkī}' \text{I am strong.'} \\
\text{à kāŋkī}' \text{S/he is strong.'} \\
b. \text{ń pāṭīr}' \text{I am stuck (to a flat surface).'} \\
\text{à pāṭīr}' \text{S/he is stuck (to a flat surface).'} \\
c. \text{ń sāŋkər}' \text{I separated'} \\
\text{à sāŋkər}' \text{S/he separated'} \\
d. \text{ń kōkīr}' \text{I scooped out/emptied (it).'} \\
\text{à kōkīr}' \text{S/he scooped out/emptied (it).'}
\]

\[(14)\]
\[
a. \text{ń dzāmpōl}' \text{I licked.'} \\
\text{à dzāmpōl}' \text{S/he licked.'} \\
b. \text{ń fātōr}' \text{I felt.'} \\
\text{à fātōr}' \text{S/he felt.'} \\
c. \text{ń kāwīr}' \text{I harvested by digging.'} \\
\text{à kāwīr}' \text{S/he harvested by digging.'} \\
d. \text{i pāťīr}\text{155}' \text{It lost leaves.'} \\
e. \text{ń sākīl}' \text{I rinsed.'} \\
\text{à sākīl}' \text{S/he rinsed.'} \\
f. \text{ń pākāl}' \text{I pushed.'} \\
\text{à pākāl}' \text{S/he pushed.'} \\
g. \text{ń tūtūr}' \text{I pushed.}'\footnote{This stem cannot be used with non-third-person subject markers, and is generally used to refer to inanimate objects. The subject marker \text{i} is always toneless, and is used to refer to general non-human (possibly non-animate) subjects. There are several other stems where \text{i} must be used throughout this dissertation.} \\
\text{à tūtūr}' \text{S/he pushed.'}
\]

\footnote{154 There is a long list of verb stems with final nasals (both bisyllabic and monosyllabic), which have been collected by a working group of Anii speakers in order to decide on the spelling of the final nasals. I have this list, but the group did not provide tone transcriptions, and I have not yet been able to elicit the transcriptions.}

\footnote{155 This stem cannot be used with non-third-person subject markers, and is generally used to refer to inanimate objects. The subject marker \text{i} is always toneless, and is used to refer to general non-human (possibly non-animate) subjects. There are several other stems where \text{i} must be used throughout this dissertation.}

\footnote{156 I am not certain what the difference in meaning is between [pākāl] and [tūtūr]. This is a matter for future research, as the meanings appear to be very similar.}
The fact that the final consonants in the examples in (14) all have a H tone is significant. Recall from the previous section that word-final consonants are moraic on the surface, but not moraic when tone linking occurs. The fact that they bear H tone here, then, suggests that the lexical H tone spreads rightward from the second to the final mora.

Data from other trimoraic stems would be helpful in confirming the existence of such a spreading rule. Unfortunately, no lexically H-toned trisyllabic (or non-consonant-final trimoraic) stems have yet been found. Toneless trisyllabic (and trimoraic) examples are given in (15) to illustrate the unmarked forms of such stems:

(15) a. ñ tsipirà  ‘I turned.’
à tsipirà  ‘S/he turned.’
b. ñ tsøŋkàrò  ‘I leaned.’
à tsøŋkàrò  ‘S/he leaned.’
c. ñ pøŋkàrò  ‘I subsided.’
à pøŋkàrò  ‘S/he subsided.’
d. ñ døŋkpàtÀ  ‘I am annoyed.’
à døŋkpàtÀ  ‘S/he is annoyed.’
e. ñ sìŋkìlà  ‘I am fat.’
à sìŋkìlà  ‘S/he is fat.’
f. ñ tsìkìlà  ‘I mixed.’
à tsìkìlà  ‘S/he mixed.’

There is one disyllabic but quadrimoraic form which does provide further support for the existence of a H tone spreading rule. This form is given in (16):

(16) ñ fjåríì  ‘I bothered (someone).’
à fjåríì  ‘S/he bothered (someone).’

The examples in (16) provide further evidence that the lexical H tone associated with the second mora of the stem spreads unboundedly until the end of the stem. Unfortunately, no other quadrimoraic forms have been found thus far other than the lexically reduplicated stems that behave slightly differently, and are discussed in Section 6.2.4.

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157 This means to turn one’s whole body/turn around

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I have now presented enough data to begin an analysis. With lexically H-toned stems, the generalization that needs to be accounted for is that the lexical H tone always surfaces on the second mora of the relevant stem. I assume here that all the prosodification rules pertaining to moraification and syllabification that were given in Chapter 5 (Section 5.2.2.2) precede tone association (tones cannot associate if there are no moras for them to link to), and that a lexical H tone is part of each H-toned stem morpheme, but must be associated by rule. The regularity of the location of tone linkage in this case suggests that the tones are not underlyingly associated. To account for the data, then, a rule of H tone association must be posited. Such a rule is given in (17):

(17) **Second Mora H Docking**

\[
\begin{array}{c}
\text{word} \\
\mu \\
\vdots \\
H' \\
\end{array}
\]

This rule causes an unassociated H tone to link to the second mora of a word, in this case the verb stem. The rule in (17) must apply after the prosodification rules given in Chapter 5 (since it makes reference to moras), but before the other tonal rules that will be discussed below.

In addition to Second Mora H Docking, a second rule is required to account for the H spreading that occurs on stems longer than two moras. As was shown above, the lexical H tone spreads rightward until the end of the verb stem, but not beyond. The rule in (18), therefore, is an iterative rule that spreads H tone rightward to an adjacent mora within the same word (\(\mu_{\text{word}}\) means a mora within the same word). The reasoning behind the fact that this rule is formulated to apply within a word in general, rather than just within a verb stem, will become clear as the analysis progresses:

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158 Specifically, these rules are Vowel Moraification, Syllable Projection, Onset Creation, Coda Creation, Diphthong Formation, Mora Syllabification, and Consonantal Syllable Projection.
This rule must be ordered after Second Mora H Docking, since it cannot apply if there are no linked H tones.

The rules in (17) and (18), when properly ordered (Second Mora H Docking, then H Spreading) account for the stem tone patterns presented so far. For example, (19) provides the derivation of the lexically-H stem [bìlå], ‘refuse’. For all the derivations in this chapter and in Chapter 7, I will leave out the syllable level, since it has no effect on tone patterns. H Spreading does not apply here because its structural description is not met (there are no moras for the H to spread to). Note that rules that do not apply (because their structural description is not met at the stage when they would normally apply) are not included in the derivations given here:

There is a question mark in (19c) because this form raises the question of how the first mora comes to be pronounced with a lower pitch. As will be seen throughout this chapter and the following one, all the tonal phenomena in the Anii verb complex can be analyzed most simply without assuming the presence of phonological L tones. I assume, therefore,
that the lower pitch level is simply the phonetic realization of tonelessness, in which case (19c) is the correct surface form. The structure in (19c) is pronounced as [bilá], where the transcription ‘’ is now known to refer to the phonetic pronunciation of that mora, not to a phonological L tone.

The derivation for H-toned bisyllabic stems containing long vowels would be as shown in (20), for the stem [ʧàárî], ‘bother’. Because this form is quadrimoraic, the H-Spreading rule does have an effect in this case:

(20) a. /ʧə r ɩ t/ 
   Output of Syllabification
   \[ H \]

b. /ʧə r ɩ t/ 
   Second Mora H Docking
   \[ H \]

c. /ʧə r ɩ t/ 
   H Spreading
   \[ H \]

d. [ʧə r ɩ t] 
   Surface Form
   \[ H \]

This set of ordered rules can also account for bisyllabic consonant-final stems, with one addition. Recall that it was hypothesized above that Anii has a WBP rule which renders final consonants moraic. This rule must apply before H-spreading, because the final consonants in the lexically H-toned stems in (14) above are H-toned, indicating that the lexical H spreads onto them. This would only be possible if they were moraic at the time of spreading—the spreading rule can only apply if there is an available mora for the
tone to spread to. The WBP rule, which I will call Mora Insertion, applies to word-final consonants,\(^{159}\) as expressed in (21):

(21) **Mora Insertion\(^{160}\)**

\[
\begin{array}{c}
C \quad \text{word} \\
\mu & \text{Ο}
\end{array}
\]

The derivation in (22) illustrates the application of Mora Insertion using the H-toned stem \([\text{ʤǝmpl}]\), ‘jump’:

(22) a. /ʤ ǝ m p ǝ l/

\[
\begin{array}{c}
\mu \quad \mu \\
\text{H}
\end{array}
\]

Output of Syllabification

b. /ʤ ǝ m p ǝ l/

\[
\begin{array}{c}
\mu \quad \mu \\
\text{H}
\end{array}
\]

\[\text{Second Mora H Docking} \]

c. /ʤ ǝ m p ǝ l/

\[
\begin{array}{c}
\mu \quad \mu \mu \\
\text{H}
\end{array}
\]

\[\text{Mora Insertion} \]

d. /ʤ ǝ m p ǝ l/

\[
\begin{array}{c}
\mu \quad \mu \mu \\
\text{H}
\end{array}
\]

\[\text{H Spreading} \]

\(^{159}\) The one environment where this rule seems not to apply is in relation to word-final syllabic consonants such as \([\text{pl}]\), ‘pursue’ and \([\text{kr}]\), ‘harvest straw’. I do not have enough data on these types of stems to make a strong claim, but it appears from the limited data I do have that Mora Insertion does not apply to them. This may be due to a restriction against bimoraic consonants (there is no length distinction in consonants in Anii). Pending further research, however, I cannot make strong claims on this issue.

\(^{160}\) When the Mora Insertion rule applies, it is possible that either the consonant delinks from the mora of the preceding vowel (to which it was linked by the Coda Creation rule given in Chapter 5), or that it remains doubly-linked. Since there is no evidence either way, I make the simplest assumption and assume that the double linkage remains.
As the derivations given above have shown, the three rules of Second Mora H Docking, Mora Insertion, and H Spreading (in that order) can account for all the lexical tonal patterns found in multisyllabic verb stems. There are, however, a large number of monosyllabic verb stems in Anii whose lexical tone patterns cannot be fully accounted for by these rules. The following section describes lexical tone on monosyllabic verb stems.

### 6.2.2 Lexical Tone in Monosyllabic Stems

The simplest (with reference to syllable structure) type of monosyllabic verb stems in Anii are those that consist of a consonant followed by a single vowel. Examples of these forms are given here, with the toneless stems in (23) and the H-toned stems in (24). Note that there are not very many of this type of stem that are lexically H (the whole list that I have been able to elicit thus far is in (24)):

(23) a. ñ dà  ‘I am there.’
   à dà  ‘S/he is there.’

b. ñ dù  ‘I sowed (as in planted the seeds directly in the ground).’
   ǝ dù  ‘S/he sowed (as in planted the seeds directly in the ground).’

c. ñ dʒi  ‘I ate.’
   à dʒi  ‘S/he ate.’

d. ñ fɔ  ‘I cut a throat.’
   à fɔ  ‘S/he cut a throat.’

e. ñ jù  ‘I cried/wailed.’
   ǝ jù  ‘S/he cried/wailed.’

f. ñ jɔ  ‘I know.’
   à jɔ  ‘S/he knows.’

g. ñ lɔ  ‘I said.’
   ǝ lɔ  ‘S/he said.’

h. ñ lì  ‘I drew water.’
   ǝ lì  ‘S/he drew water.’
i. ń lò  ‘I wove.’
    à lò  ‘S/he wove.’
j. ń fì  ‘I washed myself.’
    à fì  ‘S/he washed him/herself.’

(24) a. ń kpá  ‘I arrived.’
    à kpá  ‘S/he arrived.’
b. ń tò  ‘I lasted/endured.’
    à tò  ‘S/he lasted/endured.’
c. ń tsì  ‘I went.’
    à tsì  ‘S/he went.’
d. ń wá ní  ‘I met with her/him.’
    à wá ní  ‘S/he met with her/him.’
e. ń wí  ‘I cooked meat.’
    à wí  ‘S/he cooked meat.’

One noticeable aspect of the forms in (24) is that many of them contain downstep (where H tones are adjacent across morpheme boundaries, as expected from the claims made in Chapter 5). This section focuses only on verb stem tone, however, so downstep will not be discussed further here. It will be analyzed in Section 6.4 below.

As can be seen, in the forms in (24), the lexical H tone associates to the first mora. The Second Mora H Docking rule in (17) above would leave the H tone floating in this case, because there is no second mora for it to link to. The data in (24) suggests that a second association rule should be posited, ordered after Second Mora H Docking, to account for the fact that a H tone left floating by Second Mora H Docking will link to the first mora in the verb stem which does not have a H already linked to it. This rule is stated formally in (25):

(25)  **First Mora H Docking**

\[
\begin{array}{c}
\text{word} \quad \uparrow H \\
\quad \uparrow H' \\
\end{array}
\]

To account for the multisyllabic data in the previous section, the ordering of the two association rules is crucial. Second Mora H Docking must apply first, and then First
Another type of monosyllabic stem in Anii has CVV structure. Toneless examples are in (26) and H-toned examples are in (27). This is the entire list of these types of stems that exist in Anii:

(26) a. ń bɔɔ  ‘I prepared food.’
   à bɔɔ  ‘S/he prepared food.’
 b. ń fàà  ‘I diminished.’
   à fàà  ‘S/he diminished.’
d. ń kɔɔ  ‘I returned.’
   à kɔɔ  ‘S/he returned.’
e. ń làà  ‘I took away.’
   à làà  ‘S/he took away.’
f. ń lèè  ‘I was.’
   ò lèè  ‘S/he was.’
g. ń pɔɔ  ‘I sewed.’
   à pɔɔ  ‘S/he sewed.’
h. ń sàà  ‘I reserved.’
   à sàà  ‘S/he reserved.’
i. ń jëë  ‘I gave (it).’
   ò jëë  ‘S/he gave (it).’
j. ń tàà  ‘I lifted (it).’
   à tàà  ‘S/he lifted (it).’
k. ń tòò  ‘I took (it).’
   à tòò  ‘S/he took (it).’
l. ń dëë  ‘I faked a cut.’
   à dëë  ‘S/he faked a cut.’

(27) a. ń dòò  ‘I went out.’
   ò dòò  ‘S/he went out.’
b. ń sàà  ‘I waited.’
   à sàà  ‘S/he waited.’

---

161 I systematically asked several consultants about every logically possible (with Anii phonemes) monophthongal CVV form, and the words in (28) and (29) are all of the verb stems that they accepted.
162 [lèè] means ‘do’, but can also act as a copula in some cases.
163 This form sounds old-fashioned to many young people who instead use the verb [tò] to mean ‘give’.
164 The stem [dòò] has a two-syllable variant used by some older speakers, i.e. [dùwò]
Note that, as with the bisyllabic bimoraic forms discussed in the previous section, the lexical H in the examples in (27) is always linked to the second mora.

Recall from Chapter 5 that, unlike long monophthongs, diphthongs in Anii are monomoraic. Toneless examples of stems containing diphthongs are given in (28), and the one H-toned example that I know of is in (29):

(28) a. ń dàù ‘I raised (livestock).’
    ǝ dàù ‘S/he raised (livestock).’
b. ń kòù ‘I threw (it).’
    ǝ kòù ‘S/he threw (it).’
c. ń lêò ‘I laughed.’
    ǝ lêò ‘S/he laughed.’
d. ń pàò ‘I dammed.’
    ǝ pàò ‘S/he dammed.’
e. ń ràò ‘I washed (something).’
    ǝ ràò ‘S/he washed (something).’
f. ń sàò ‘I peeled (something).’
    ǝ sàò ‘S/he peeled (something).’
g. ń ŋèù ‘I skimmed.’
    ǝ ŋèù ‘S/he skimmed.’
h. ń ŋèù ‘I surprised (someone).’
    ǝ ŋèù ‘S/he surprised (someone).’

(29) ń ŋèú ‘I recited.’
    ǝ ŋèú ‘S/he recited.’

The example in (29) provides evidence in support of the claim made above and in Chapter 5 that diphthongs are monomoraic in Anii. If each vowel in (29) had its own mora, the H tone should link to the second vowel mora, as with the monophthongal CVV forms above, but that does not happen.

Another type of verb stem consists of stems that are monosyllabic and consonant-final. The data is given in (30) for toneless stems and (31) for H-toned stems:

(30) a. ń bòr ‘I fought.’
    ǝ bòr ‘S/he fought.’
b. ń ʤìm ‘I jumped.’
    ǝ ʤìm ‘S/he jumped.’
c. ń fə̀r  ‘I styled hair.’
   à fə̀r  ‘S/he styled hair.’
d. ń fə̀l  ‘I slept.’
   à fə̀l  ‘S/he slept.’
e. ń fə̀m  ‘I farmed.’
   à fə̀m  ‘S/he farmed.’
f. ń fə̀r  ‘I poured.’
   à fə̀r  ‘S/he poured.’
g. ń nèm  ‘I drank.’
   à nèm  ‘S/he drank.’
h. ń jèw 165 ‘I returned (home).’
   à jèw  ‘S/he returned (home).’

(31) a. ń ’ bṑn  ‘I am good.’
   à bṑn  ‘S/he is good.’
b. ń ’ kpə̀r  ‘I grew.’
   à kpə̀r  ‘S/he grew.’
c. ń ’ pə̀m  ‘I got stuck.’
   à pə̀m  ‘S/he got stuck.’
d. i sə̀n  ‘It is sweet.’
e. ń ’ tsə̀m  ‘I am good/beautiful.’
   à tsə̀m  ‘S/he is good/beautiful.’
f. ń ’ fə̀r  ‘I am not able/am exhausted’
   à fə̀r  ‘S/he is not able/is exhausted.’

At the stage of H tone association, the stems given in (31) must have only one mora, since the H tone associates to the first mora, as would be expected if Second Mora H Docking could not apply due to the lack of a second mora in the stem, and then First Mora H Docking applied, linking the tone to the first mora. Given the H tone on the final consonants in the surface form, then, it seems that H Spreading does apply here, meaning that the final consonants must be moraic when H Spreading occurs, as with the longer consonant-final forms in (14) above.

The rules proposed in Section 6.1.1, with the addition of First Mora H Docking, can account for all the data presented in this section. No tonal rules are required to account for the surface forms of toneless stems, though Mora-Insertion is assumed to

165 The evidence that this form is actually consonant-final, and not a diphthong was briefly discussed in Chapter 5, and will be presented in more detail in Chapter 7.
apply in those cases where its structural description is met, regardless of the lexical tone of the stem in question (evidence in support of this assumption will be presented in Chapter 7). The derivation of H-toned stems is more complicated, as is presented below.

The derivation of H-toned CV forms is exemplified in (32) with the stem [kpá], ‘arrive’:

(32) a. /kp a/  
   μ   
   H  
   Output of Syllabification  

b. /kp a/  
   μ   
   H  
   First Mora H Docking  

c. [kp a]  
   μ   
   H  
   Surface Form

The derivation for stems containing a H diphthong would be similar, since diphthongs, like short monophthongs, are monomoraic. The derivation is in (33):

(33) a. /ʧ e u/  
   μ   
   H  
   Output of Syllabification  

b. /ʧ e u/  
   μ   
   H  
   First Mora H Docking  

c. [ʧ e u]  
   μ   
   H  
   Surface Form
In contrast to the monomoraic forms above, the bimoraic long vowel stems would have a derivation as in (34):

(34) a. /d o /
   μ μ
   H
   Output of Syllabification

b. /d o /
   μ μ
   H
   Second Mora H Docking

c. [d o ]
   μ μ
   H
   Surface Form

A sample derivation for a CVC stem is in (35), using the word [bôń], ‘be good’. Mora Insertion and H Spreading come into play here. While there is no evidence as to the relative order of First Mora H Docking and Mora Insertion, I have chosen to group all the tone association rules together:

(35) a. /b o n/
   μ
   H
   Output of Syllabification

b. /b o n/
   μ
   H
   First Mora H Docking

c. /b o n/
   μ
   H
   Mora Insertion

d. /b o n/
   μ
   H
   H Spreading

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The preceding subsections have provided an ordered set of rules that can account for all of the data presented thus far. There are some verb stems, however, that do not completely fit the patterns given above. The next section discusses and analyzes these more unusual forms.

6.2.3 Glide-Final Stems with High Vowels

A type of stem that is slightly different from those presented above is that of monosyllabic stems that contain high vowels and end in glides. These stems vary between CV and CVC surface forms. In contexts without grammatical tone, these forms appear to be simple CV forms, as is shown in (36) and (37):

(36) a. ńʧù 'I ran.'
    珺ʧù 'S/he ran.'
    b. ńʧù 'I inflated.'
    珺ʧù 'S/he inflated.'

(37) a. i bú 'It is rotten.'
    b. ń li 'I got lost.'
    珺 li 'S/he got lost.'
    c. i mú 'It is dented.'
    d. ńʧí 'I died.'
    珺ʧí 'S/he died.'

Since this chapter focuses on lexical tone, I will not provide a full grammatical tone paradigm here. However, examples of this type of stem with a grammatical tone (the same type as was discussed in Section 6.1) is given in (38) to illustrate that these stems are not typical CV stems (which are exemplified with grammatical tone in (40) below):
The tone pattern in (38) is the same as that found on clearly CVC verb stems in that type of grammatical tone construction, as was briefly in Chapter 5 and Section 6.1, and will be shown in more detail in Chapter 7. Some examples of such CVC stems with grammatical tone (some repeated from above) are in (39):

(38) a. ŋ bòŋà ŋúw  ‘I ran long ago.’
   à bòŋà ŋúw  ‘S/he ran long ago.’
b. ŋ bòŋà fúw  ‘I inflated long ago.’
   à bòŋà fúw  ‘S/he inflated long ago.’
c. i bòŋà búw  ‘It was rotten long ago.’
d. ŋ bòŋà lii  ‘I got lost long ago.’
   à bòŋà lii  ‘S/he got lost long ago.’
e. i bòŋà mów  ‘It was dented long ago.’
f. ŋ bòŋà říi  ‘I died long ago.’
   à bòŋà říi  ‘S/he died long ago.’

An analysis of this grammatical tone pattern can be found in Chapter 7, but what is important here is to note that the tone pattern is the same in (38) and (39).

It seems likely, then, that the stems in (36)-(38) are underlyingly glide-final. A possible alternative analysis is that the CV form is underlying in these cases and the glide is inserted when a grammatical tone is present. This analysis is not tenable, however,
because there are many CV stems with high vowels that do not show this pattern of glide alternation, as illustrated in (40):

(40)  **Lexical Tone Only**                      **Grammatical and Lexical Tone**

a. ń dů  ‘I sowed.’                ń bọnà dů  ‘I sowed long ago.’
    ò dů  ‘S/he sowed.’              à bọnà dů  ‘S/he sowed long ago
b. ń dzì  ‘I ate.’                ń bọnà dzì  ‘I ate long ago.’
    à dzì  ‘S/he ate.’              à bọnà dzì  ‘S/he ate long ago.’
c. ń fò  ‘I cut a throat.’        ń bọnà fò  ‘I cut a throat long ago.’
    à fò  ‘S/he cut a throat.’      à bọnà fò  ‘S/he cut a throat long ago.’
d. ń jù  ‘I cried/wailed.’        ń bọnà jù  ‘I cried/wailed long ago.’
    à jù  ‘S/he cried/wailed.’      à bọnà jù  ‘S/he cried/wailed long ago.’
e. ń lì  ‘I drew water.’          ń bọnà lì  ‘I drew water long ago.’
    à lì  ‘S/he drew water.’        à bọnà lì  ‘S/he drew water long ago.’
f. ń lò  ‘I woke.’                 ń bọnà lò  ‘I woke long ago.’
    à lò  ‘S/he woke.’              à bọnà lò  ‘S/he woke long ago.’
g. ń ʃì  ‘I washed myself.’       ń bọnà ʃì  ‘I washed myself long ago.’
    à ʃì  ‘S/he washed him/herself.’ à bọnà ʃì  ‘S/he washed him/herself long ago.’
h. ń ʃ tsi  ‘I went.’             ń bọnà tsi  ‘I went long ago.’
    ò tsi  ‘S/he went.’             à bọnà tsi  ‘S/he went long ago.’
i. ń ʃ wi  ‘I cooked meat.’        ń bọnà wi  ‘I cooked meat long ago.’
    ò wi  ‘S/he cooked meat.’        à bọnà wi  ‘S/he cooked meat long ago.’

To account for the surface forms in (38) and (39), I posit a rule by which /w/ deletes after high back vowels, \(^{167}\) and /j/ deletes after high front vowels, but only in certain circumstances. Those circumstances are that the glides in these forms only delete when they have the same tone as the preceding vowel.\(^{168}\) Note that the triggering environment for the glide deletion rule must involve sameness of tone, but not any particular autosegmental structure. This is because while the HH pattern is the result of

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\(^{166}\) I know of no forms where glides follow the central high vowel [i], but the examples in (40h-i) are included as examples of the tone patterns of lexically H CV stems.

\(^{167}\) Note that [ATR] does not affect this rule, so [t] and [i] behave similarly, and so do [u] and [u].

\(^{168}\) The fact that glide deletion fails to apply when there is a tone change is not surprising, given that deletion is blocked in just the cases where deleting the glide would either result in a monomoraic tone contour (which are not allowed in Anii) or in the deletion of one of the tones in the contour. Tone preservation could thus be behind the failure of glide deletion to apply in such cases. A plausible alternative analysis of this data is to say that glides delete only when there is no grammatical tone. I prefer the ‘same tone’ analysis because it seems more explanatory (in that it provides a plausible phonetically-grounded explanation for how this alternation could have come about historically), but in principle either analysis can account for the data presented here.
spreading, and thus involves a single multiply-linked H tone, the surface LL pattern is the
pronunciation of adjacent toneless moras—there is no linkage structure there at all.

There has been discussion in the literature as to how to formalize rules that refer
to the sameness of a given property. Odden (2013) argues in detail that the concept of
sameness, or identity, is a fundamental linguistic notion, regardless of the type of entity in
question. That is, if two entities share any given property, formal reference to their
identity with regard to that property is possible in linguistic theory, whether or not that
property is easily defined. To illustrate this, he addresses the long-standing question of
whether distinctive features are privative or binary, and argues that the concept of identity
is not dependent on that question. For example, the statement that segment A and
segment B are the same with reference to a feature F is true if both segments are [+F],
both are [-F], both have [F], or both lack [F]. That is, as long as the value of a given
feature is the same for A and B, whether F is privative or binary does not affect the
interpretation of identity.

Following Odden’s (2013) proposal, I will use the symbol = to indicate
phonological identity of this type. Formally, this symbol is defined in this way by Odden
(2013: 268), where F is a variable over features, and indices are used in the standard
manner: “the condition [=F^i]...[=F^n] is satisfied iff F_k exists in both S_i, S_n, or is lacking in
both S_i, S_n, when F_k is a privative feature; and the condition is satisfied for binary-valued
F_k iff F_k has the value “−” in both S_i, S_n, or the value “+” in both S_i, S_n.”. Note that this
definition allows for either binary or privative features, and the meaning of the = symbol
is not affected by the nature of the features in question (see Odden 2013 for more
discussion of this issue).

With regard to Anii tone, then, given that there is no evidence of specified L tones,
I assume that a privative tone feature is at work. Crucially, however, the analysis here
would not substantially change if future work were to establish that there were some
reason to argue for the use of binary tone features in Anii. A discussion of tonal features
(and especially the question of privativity in tones) is beyond the scope of this
dissertation, but see Yip 1980, Pulleyblank 1986, Clements, Michaud and Patin 2010,
Hyman 2010b, Odden 2010, among others, for discussion of this issue. The essential
point to be made here is that the $=$ symbol refers to ‘sameness’, and whatever features or lack of features are at work here, there is no question that all H toned moras have the same tone specification, and all toneless moras have a different one.

The rule needed to account for the alternations in (36)-(38) is given in (41). I use the symbol $T$ to indicate a tone value (either H or toneless). There is no autosegmental representation in the rule in (41) because, as mentioned above, the rule is apparently not sensitive to linkage structure, so it is simpler not to be specific about how the tones are linked—the rule applies regardless. With regard to how vowel height is represented in (41), I follow Parkinson (1996), whose discussion of feature representations focuses on vowel height. In principle, any feature theory that distinguishes between velar consonants and high glides\(^{169}\) (since final velars do not delete after high vowels), could be used here without substantially changing the rule. In this case, I assume that high vowels and glides are [closed] and velars are not:

\[
\begin{align*}
\text{(41) & \quad \textbf{Glide Deletion}} \\
\text{[closed]} & \quad \rightarrow \quad \emptyset & \quad \text{[closed]} \\
\text{[+consonantal]} & \quad / \quad \emptyset & \quad / \quad \text{[-consonantal]} \\
\text{[=T]} & \quad / \quad \text{[=T]}
\end{align*}
\]

This rule states that a glide will delete if it follows a high vowel if the glide and the high vowel have the same tone value. Note that the rule in (41) does not specify that the glide being deleted must share a backness feature with the relevant vowel. Thus, the rule theoretically allows for glide deletion to occur with /uj/ and /iw/ sequences. There are no such sequences in my data, so for the sake of simplicity, I assume that the Glide Deletion rule does not refer to backness, pending further data that would show such a reference to be necessary.

With the addition of this rule, then, the stem types exemplified in (38)-(40) can be easily accounted for. A sample derivation, taking Glide Deletion into account, of the tone pattern on the H-toned stem /tʃi]/, ‘die’, is in (42). This example shows that Glide

\(^{169}\) As well as making many other distinctions, of course, but I assume that all viable feature theories distinguish between e.g. glides and retroflex stops or high glides and low vowels. Not all theories, on the other hand, distinguish clearly between glides and velar nasals.
Deletion must apply after H Spreading, or it would not apply, since the two moras are both H-toned only after spreading occurs:

(42) a. /ʧ i j/ 
   \[ \mu \]
   H

b. /ʧ i j/ 
   \[ \mu \]
   H

d. /ʧ i j/ 
   \[ \mu \]
   H

e. /ʧ i j/ 
   \[ \mu \]
   H

f. /ʧ i / 
   \[ \mu \]
   H

g. [ʧ i ] 
   \[ \mu \]
   H

I assume that the mora that was formerly attached to the glide remains, but is not pronounced due to lack of segmental material attached to it. It is equally possibly that the mora deletes because it is not linked to any segmental material, but there is no evidence for or against that assumption, so I make the simpler assumption that the mora remains, and is not pronounced simply because pronunciation of a mora without segmental material is impossible.
With toneless stems, the derivation is much simpler—Mora Insertion and Glide Deletion are the only rules that apply. This is illustrated in (43) with the toneless stem /ʧuw/, ‘run’:

(43) a. /ʧ u w/  
    \[ \mu \]  
    Output of Syllabification  

b. /ʧ u w/  
    \[ \mu \mu \]  
    Mora Insertion  

c. /ʧ u /  
    \[ \mu \mu \]  
    Glide Deletion  

d. [ʧ u ]  
    \[ \mu \mu \]  
    Surface Form  

Thus far, I have presented most of the types of verb stems that exist in Anii. The final type that will be discussed in this chapter is verbs with lexically-reduplicated stems, which are the focus of the following section.

6.2.4 Lexically-Reduplicated Verb Stems

There are two types of verb stem reduplication in Anii, one lexical and one grammatical. Grammatical reduplication expresses contrastive verb focus, and has a grammatical tone pattern. That type of reduplication (which can in fact apply to lexically-reduplicated forms) will be presented in Chapter 7. Lexical reduplication, which is the focus of this section, results in a lexical meaning difference between the reduplicated stem and the non-reduplicated form. This difference is often that the reduplicated form has a meaning related to the repetition of the eventuality denoted by the non-reduplicated stem, but the semantic relationship is not always clear-cut. Lexical reduplication is not a fully productive process—it cannot be applied to all verb stems, and in some cases, the non-reduplicated form of the stem does not appear to exist in the modern language. In other cases, however, speakers are aware of the relationship between the reduplicated and non-reduplicated forms.
With regard to tone, lexically-reduplicated forms do not have any grammatical tone. This is exemplified with the toneless stems in (44), and with H-toned stems in (45) below. Where I am aware that the non-reduplicated versions of certain stems exist synchronically, a corresponding non-reduplicated stem is listed in the right-hand column:

<table>
<thead>
<tr>
<th>(44) Form</th>
<th>Gloss</th>
<th>Single Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ń bòdòbòdò</td>
<td>‘I widened/spread’</td>
<td>à bòdòbòdò</td>
<td>‘S/he widened/spread’</td>
</tr>
<tr>
<td>b. ń bòròbòrò</td>
<td>‘I struggled’</td>
<td>à bòròbòrò</td>
<td>‘S/he struggled’</td>
</tr>
<tr>
<td>c. ń dʒ màdʒ màm</td>
<td>‘I jumped repeatedly’</td>
<td>à dʒ màm</td>
<td>‘S/he jumped repeatedly’</td>
</tr>
<tr>
<td>d. ń jànàjànà</td>
<td>‘I unstuck (something)’</td>
<td>à jànàjànà</td>
<td>‘S/he unstuck (something)’</td>
</tr>
<tr>
<td>e. ń pël pël</td>
<td>‘I wound’</td>
<td>à pël</td>
<td>‘S/he wound’</td>
</tr>
<tr>
<td>f. ń ràm ràmàmà</td>
<td>‘I spread out’</td>
<td>à ràm ràmàmà</td>
<td>‘S/he spread out’</td>
</tr>
<tr>
<td>g. ń jërëjërë</td>
<td>‘I caressed (something)’</td>
<td>à jërëjërë</td>
<td>‘S/he caressed (something)’</td>
</tr>
<tr>
<td>h. ń wàdàwàdà</td>
<td>‘I searched around’</td>
<td>à wàdàwàdà</td>
<td>‘S/he searched around’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(45) Form</th>
<th>Gloss</th>
<th>Single Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ń fàdàfàdà</td>
<td>‘I scratched repeatedly’</td>
<td>à fàdàfàdà</td>
<td>‘S/he scratched repeatedly’</td>
</tr>
<tr>
<td>b. ń fànàfànà</td>
<td>‘It is level (spatially)’</td>
<td>à fànà</td>
<td>‘be equal’</td>
</tr>
<tr>
<td>c. ń kàdàkàdà</td>
<td>‘I searched a pile’</td>
<td>à kàdàkàdà</td>
<td>‘S/he searched a pile’</td>
</tr>
<tr>
<td>d. ń kàmàkàmà</td>
<td>‘I amused myself’</td>
<td>à kàmàkàmà</td>
<td>‘S/he amused herself’</td>
</tr>
<tr>
<td>e. ń nòlònòlò</td>
<td>‘I tickled (her)’</td>
<td>à nòlònòlò</td>
<td>‘S/he tickled (her)’</td>
</tr>
<tr>
<td>f. ń pàdàpàdà</td>
<td>‘I chopped (it) in pieces’</td>
<td>à pàdàpàdà</td>
<td>‘S/he chopped (it) in pieces’</td>
</tr>
<tr>
<td>g. ń pàràpàrà</td>
<td>‘I packed’</td>
<td>à pàràpàrà</td>
<td>‘S/he packed’</td>
</tr>
<tr>
<td>h. ń jàfàjàfàr</td>
<td>‘I wrapped (it) up.’</td>
<td>à jàfàjàfàr</td>
<td>‘S/he wrapped (it) up.’</td>
</tr>
</tbody>
</table>

170 As in the past tense of the verb 'wind'.
171 Specifically, this verb means to take stuff off the top of a pile to get to something below.
There are two aspects of these forms that warrant further discussion, i.e. tone and syllable weight.

The point to be made about tone here is that if the lexical tones in the examples in (45) were simply reproduced as part of the reduplication process (after the application of the association rules), one would expect a surface tone pronunciation of LHLH on these lexically H-toned stems. The actually occurring LHHH pattern could be explained by the application of H Spreading in these cases, but only if the H association (and spreading) rules do not apply until after the reduplication has occurred, when linking and spreading occur as expected for quadrimoraic forms. That is, if only the segmental material (not the tone) is reduplicated, the rules proposed in the previous sections can account for these forms.

Another aspect of the forms in (44) and (45) that should be discussed further involves syllable weight. Most interestingly, these reduplicated forms appear to always be quadrisyllabic (or at least quadrimoraic—see the examples in (47) and (48) below). Even in most cases where the reduplicants are CVC stems, the reduplicated forms still have CVCVCVCV syllable structure, as with e.g. [dʒɔm], ‘jump’ and [dʒɔmɔdʒɔm], ‘jump repeatedly’ from (44c). There is one exception to this structure that I know of, namely the example in (46):

(46) ń pɛmɛnɛ  ‘I cleaned’  
      à pɛmɛnɛ  ‘S/he cleaned’

It is not clear why there is no ‘epenthetic’ vowel in this case (the original reduplicant is unknown thus far), but it is significant that this form is still quadrimoraic—the [m] is definitely moraic here, and can bear tone, as discussed in Section 6.1 above).

One possible explanation for the syllable structure of the reduplicated forms is diachronic. It could be that the historical roots for these forms had CVCV syllable
structure. This would not be unexpected, since scholars posit that Proto-Niger-Congo verb stems had more than one syllable (cf. Hyman 2004, Nurse 2007). It could be that at the time when this lexical reduplication process was a fully productive one, these stems had not yet lost their second syllable. Even if such a diachronic explanation is accurate with regard to the historical facts, however, there still must be some kind of synchronic account for this lexically-reduplicated data, since the process may still be partially productive. If the modern CVC stems are considered to be the base in these cases, however, the argument would have to be made that the reduplication process modifies the base as well as the reduplicant, since both the base and the reduplicant surface with CVCV structure in the reduplicated forms.

An additional complication here is the fact that there are reduplicated forms that are bisyllabic but still quadrimoraic. Toneless examples are in (47) and H-toned examples in (48). Unfortunately, the original reduplicants for these forms are unknown:

(47) a. i ɩɛɛ ɩɛɛ 'It spoiled.'
   b. ñ ˈtɔɔtɔɔ 'I stirred.'
      ɔ tɔɔtɔɔ 'S/he stirred.'
   c. ñ jɛɛjɛɛ 'I strolled.'
      ɔ jɛɛjɛɛ 'S/he strolled.'
   d. ñ ˈfɔɔfɔɔ 'I made a tincture (with leaves and water).'
      ɔ fɔɔfɔɔ 'S/he made a tincture (with leaves and water).'

(48) a. i ɗɗɗɗɗ 'It (inanimate) is cold.'
   b. ñ ˈpɑɑpɑɑ 'I tricked/joked.'
      ɔ pɑɑpɑɑ 'S/he tricked/joked.'
   c. ñ jɛɛjɛɛ 'I hurried.'
      ɔ jɛɛjɛɛ 'S/he hurried.'

Without knowledge of more original reduplicants, the exact rule for lexical reduplication cannot be established. It is not clear if the reduplication process itself adds moras, or if the reduplicated forms reflect historical forms that have been shortened as non-reduplicated stems in the modern language. Future research may shed further light on these questions. Since the focus here is on tone, however, the important facts regarding these lexically-reduplicated stems is that the reduplication appears to apply before tone.
attachment and spreading, and only segmental material reduplicates. As illustrated above, these forms then behave just like other quadrimoraic stems with regard to lexical tone (though, as Chapter 7 will illustrate, that is not fully the case with grammatical tone).

6.3 Summary of the Analysis of Verb Stem Tone

This chapter has thus far presented lexical tone on Anii verb stems, providing data on all the types of verb stems that exist in Anii, and proposing a set of ordered rules to account for that data. These rules, which (as mentioned above) are assumed to apply after the prosodification rules discussed in Chapter 5, are listed here in the order in which they apply:

(49)  Second Mora H Docking  
      First Mora H Docking  
      Mora Insertion  
      H Spreading  
      Glide Deletion

Many of these rules will be shown to also apply to non-stem tones (both lexical and grammatical) within the verb complex.

The rules proposed above provide a basis on which the analysis to be presented in the following section will be built. The focus of Section 6.4 is on pre-stem tones that surface on subject markers and TAM markers (which generally occur between subject markers and verb stems), and on downstep. These aspects of verb complex tonology bring up important points about the domains of application for the rules proposed above.

6.4 Pre-Stem Tone in the Verb Complex

The previous section concentrated only on the lexical tone of the verb stems themselves. There are also non-stem tones within the verb complex whose interaction with verb stem tones is worthy of comment. This section presents tone on realis (group
subject markers (irrealis markers will be discussed in Chapter 7) and TAM markers, and analyzes the interaction of those tones with each other and with verb stem tones, specifically focusing on the analysis of downstep. The argument will be made that the two H attachment rules already proposed can explain the tonal behavior of these pre-stem tones, given correct assumptions about word structure.

All the verb complex data given above has consisted of unmarked clauses (in the sense described in Chapter 3, i.e. clauses with no tense or aspect marker), or clauses marked with the far-past marker [bʊŋa]. In both of those types of clauses, an important fact that has not yet been looked at in detail is that each first- and second-person subject marker surfaces with a H tone, while third-person subject markers do not. The examples in (50) are repeated from above and expanded. The relevant subject markers are bolded. All the examples in the first part of this section are given with bisyllabic toneless stems, because stem tone has no effect on the behavior of the subject marker tones, so just one representative stem type was chosen:

(50) a. ń bidá ‘I threw away.’
ő bidá ‘You (sg) threw away.’
à bidá ‘S/he threw away.’
gi bidá ‘We threw away.’
i bidá ‘You (pl) threw away.’
bà bidá ‘They threw away.’
b. ń bʊŋa bidá ‘I threw away long ago.’
ő bʊŋa bidá ‘You (sg) threw away long ago.’
à bʊŋa bidá ‘S/he threw away long ago.’
gi bʊŋa bidá ‘We threw away long ago.’
i bʊŋa bidá ‘You (pl) threw away long ago.’
bà bʊŋa bidá ‘They threw away long ago.’

As can be seen in (50) and in all the data given in the previous sections, the subject marker tone is the same, regardless of the type of verb stem.

172 Recall from Chapter 1 that the two types of subject markers in Anii were originally termed ‘group 1’ (later referred to as the realis markers, after the discussion of the future in Chapter 3), and ‘group 2’ (also referred to as the irrealis markers).
The H tone that surfaces on the first- and second-person subject markers could be a lexical tone belonging to those particular subject markers, or it could be a grammatical marker of non-third-person. Either way, it should be noted that this type of tone is limited to realis clauses, since the irrealis subject markers have a different tone pattern, as will be shown in Chapter 7. There is no strong evidence as to whether the H tone that surfaces on the subject markers in (50) is lexical or grammatical, so I will refer to this type of tone as ‘subject marker tone’, acknowledging that it could be either lexical or grammatical. The analysis is not substantially affected either way.

Similar patterns to those illustrated in (50) are found in clauses marked with many TAM markers in addition to [bʊŋà]. Representative examples are given in (51), but these are not the only examples of this type of TAM marker. Note that these markers, like [bʊŋà], trigger the presence of a grammatical tone on the verb stems, which will be discussed in the following chapter. The focus here, however, is on the subject marker tones, which are bolded. Recall from the examples in Chapter 4 that [ʧèé] has a lexical H tone, but [jè] does not:

(51) a. nʧèé bidá ‘I have/had thrown (it) away.’
    ùʧèé bidá ‘You (sg) have/had thrown (it) away.’
    ðʧèé bidá ‘S/he has/had thrown (it) away.’
    giʧèé bidá ‘We have/had thrown (it) away.’
    íʧèé bidá ‘You (pl) have/had thrown (it) away.’
    bàʧèé bidá ‘They have/had thrown (it) away.’
    b. ñjè bidá ‘I actually threw (it) away.’
    ùjè bidá ‘You (sg) actually threw (it) away.’
    ðjè bidá ‘S/he actually threw (it) away.’
    gi jè bidá ‘We actually threw (it) away.’
    í jè bidá ‘You (pl) actually threw (it) away.’
    bà jè bidá ‘They actually threw (it) away.’

What is important here is that the subject marker tones surface on the subject markers when followed by these TAM markers, just as they do in unmarked clauses.

Given the type of data presented so far, it seems that the subject marker tone surfaces on the relevant subject markers, whether or not a TAM marker such as [bʊŋà],
[ʧèé] or [jè] is present. As will be shown below, however, there is a different set of TAM markers. When these markers are present in a sentence, the subject marker tones do not surface on the subject markers, as will be shown below. This changing tone association shows that these subject marker tones are not lexically associated with the subject markers, but must instead be associated by rule. A rule that can account for this subject marker tone pattern, then, is First Mora H Docking, originally proposed to account for tone on monomoraic stems. That rule is repeated here:

(27) **First Mora H Docking**

\[
\text{[\text{word}\ H]} \quad H'
\]

Note that this rule was formulated to apply within any word, not only within the verb stem, so it will apply if we assume that the subject markers are words, just as verb stems are, and that the rule applies within every word in the verb complex.

Recall from above that Second Mora H Docking applies before First Mora H Docking within the verb stem. Since the subject markers all have only one mora, it is impossible to tell from data like that in (50) and (51) whether this rule ordering also applies with reference to subject marker tone. There is evidence, however, that Second Mora H Docking does in fact apply to subject marker tones, as well, before First Mora H Docking. This evidence comes from the fact that in some cases, the subject marker tone surfaces on a following TAM marker, rather than on the subject marker itself. The imperfective marker [ti] is one TAM marker with which this type of pattern holds, as illustrated in (52). The full paradigm is given here to illustrate that all clauses with first- and second-person subject markers show one pattern, and those with third-person subject markers show another pattern, as would be expected if the tone that surfaces on the imperfective marker in these examples is in fact the subject marker tone:
(52) a. ñ tí bîdà  ‘I am throwing (it) away.’
õ tí bîdà  ‘You (sg) are throwing (it) away.’
à tí bîdà  ‘S/he is throwing (it) away.’
gí tí bîdà  ‘We are throwing (it) away.’
i tí bîdà  ‘You (pl) are throwing (it) away.’
bà tí bîdà  ‘They are throwing (it) away.’

b. ñ tí bôŋà  ‘I am turning my head.’
õ tí bôŋà  ‘You (sg) are turning your head.’
à tí bôŋà  ‘S/he is turning her/his head.’
gí tí bôŋà  ‘We are turning our heads.’
i tí bôŋà  ‘You (pl) are turning your heads.’
bà tí bôŋà  ‘They are turning their heads.’

c. ñ tí dôŋò  ‘I am making a field by burning.’
û tí dôŋò  ‘You (sg) are making a field by burning.’
à tí dôŋò  ‘S/he is making a field by burning.’
gí tí dôŋò  ‘We are making a field by burning.’
i tí dôŋò  ‘You (pl) are making a field by burning.’
bà tí dôŋò  ‘They are making a field by burning.’

d. ñ tí jîdè  ‘I am stopping.’
û tí jîdè  ‘You (sg) are stopping.’
à tí jîdè  ‘S/he is stopping.’
gí tí jîdè  ‘We are stopping.’
i tí jîdè  ‘You (pl) are stopping.’
bà tí jîdè  ‘They are stopping.’

e. ñ tí kàrâ  ‘I am getting dressed.’
õ tí kàrâ  ‘You (sg) are getting dressed.’
à tí kàrâ  ‘S/he is getting dressed.’
gí tí kàrâ  ‘We are getting dressed.’
i tí kàrâ  ‘You (pl) are getting dressed.’
bà tí kàrâ  ‘They are getting dressed.’

f. ñ tí kôlô  ‘I am coughing.’
õ tí kôlô  ‘You (sg) are coughing.’
à tí kôlô  ‘S/he is coughing.’
gí tí kôlô  ‘We are coughing.’
i tí kôlô  ‘You (pl) are coughing.’
bà tí kôlô  ‘They are coughing.’

g. ñ tí ɲèrâ  ‘I am normally quiet.’
õ tí ɲèrâ  ‘You (sg) are normally quiet.’
à tí ɲèrâ  ‘S/he is normally quiet.’
gí tí ɲèrâ  ‘We are normally quiet.’
i tí ɲèrâ  ‘You (pl) are normally quiet.’
bà tí ɲèrâ  ‘They are normally quiet.’
h. ñ tì rònò  ‘I am hearing.’
ù tì rònò  ‘You (sg) are hearing.’
ò tì rònò  ‘S/he is hearing.’
ɡì tì rònò  ‘We are hearing.’
i tì rònò  ‘You (pl) are hearing.’
bò tì rònò  ‘They are hearing.’

As can be seen from (52), when the subject marker is immediately followed by the imperfective marker [tì], the H tone of the H-toned subject markers surfaces on the lexically toneless imperfective marker, while in the examples in (50) and (51) above, that tone surfaces on the subject markers themselves.

The imperfective marker [nà] behaves similarly to [tì] with regard to subject marker tone. Since [nà] is usually used in irrealis clauses, there are not many realis examples in my data, but the examples in (53) show the relevant pattern. These examples are clauses with subject focus, and were elicited as responses to the question ‘Who is coughing?’:

(53) a. ñ nà kòlò  ‘I am coughing.’
ò nà kòlò  ‘You (sg) are coughing.’
à nà kòlò  ‘S/he is coughing.’
ɡì nà kòlò  ‘We are coughing.’
i nà kòlò  ‘You (pl) are coughing.’
bà nà kòlò  ‘They are coughing.’
b. ñ nò kôrò  ‘S/he shouted.’

The future marker [tì] also behaves in this way with regard to realis subject pronoun tone, but a discussion of the future construction is left for Chapter 7 because there are several other phonological processes that interact with subject marker tone in those constructions.

The data in (52) and (53) could be accounted for using the association rules proposed in previous sections, if it is assumed that the subject marker and the imperfective marker in these clauses form a single word, to which the association rule

173 The examples in (53) are the only full paradigm I have in my data with [nà] in a non-irrealis context. Most of the non-irrealis data I have involves third-person subjects only, as it was elicited for semantic research, not for tonological purposes. One third-person example is included in (53b) to illustrate the behavior of [ATR] harmony in these clauses.
Second Mora H Docking applies (before First Mora H Docking, the ordering also needed to account for lexical tone in the verb stem). This rule is repeated here from Section 6.2:

\[
\text{Second Mora H Docking} \quad \left[ \begin{array}{c}
\text{word} \\
\mu \\
\mu \\
\vdash \\
H'
\end{array} \right]
\]

Given the data above, then, I assume that the realis subject markers form words with a following imperfective marker (or with other similar TAM markers), and the subject marker tone attaches to that word by Second Mora H Docking. Since this type of word formation does not happen with many other TAM markers, as shown above, I assume that it is the imperfective markers (and other TAM markers like them) that trigger this process.

One plausible explanation for the data in (52)-(53) is that the imperfective markers and the ‘future’ marker (and at least one other marker, which will be discussed later in this section), are bound morphemes, perhaps clitics,\textsuperscript{174} that attach to whatever word is immediately to their left. Further research on the syntax of Anii would be needed to confirm this hypothesis, but for the purposes of this dissertation, I will make the provisional assumption that the TAM markers of this type cliticize to a preceding subject marker, and will refer to these types of markers as ‘cliticizing markers’ in the discussion that follows. I will refer to markers like \([bʊŋà]\), that do not form words with preceding subject markers, as ‘non-cliticizing markers’.

In addition to the difference in subject marker tone attachment, there are at least two other ways in which the two types of TAM markers discussed above seem to behave differently from each other. One way is that non-cliticizing markers trigger grammatical tone on a following verb stem, while cliticizing markers usually do not. There is, however, one marker, \([tà]\), meaning ‘if’ or ‘when’, that appears to be cliticizing (tone pattern-wise), and yet a verb stem that follows \([tà]\) surfaces with a grammatical tone.

\textsuperscript{174}The concept of ‘clitic’ is a controversial one (cf. Zwicky and Pullum 1983). In this work, I assume a broad and non-technical definition for the term (similar to that given in Zwicky 1990c), i.e. that clitics are unemphatic words treated phonologically as part of a preceding (or following) word.
This is likely because [tà] is only used in subordinate clauses, and the grammatical tone there is present as a mark of subordination, as will be discussed further in Chapter 7.

A clearer difference between the two types of TAM markers is the fact that non-cliticizing TAM markers (unlike cliticizing TAM markers) are not subject to vowel harmony from the verb stem, but rather trigger vowel harmony themselves, as was shown in Chapter 1.\(^{175}\) It may also be relevant that when both types of TAM markers occur in the same clause, the non-cliticizing marker must always be ordered first (e.g. [ń bōŋà tì fōbā], ‘I was changing long ago’ is a perfectly good sentence, but the reverse order *[ń tì bōŋà fōbā] is ungrammatical).

A possible explanation for the differences in TAM marker behavior is that diachronically, non-cliticizing TAM markers may once have been verb stems in their own right. The grammatical tone that accompanies these markers may be the same tone pattern as that which occurs in certain cases of verb phrase and clause concatenation or subordination, as will be discussed further in Chapter 7. Also, though not a conclusive argument, it is certainly suggestive that [bōŋà] is still a verb stem synchronically (meaning ‘turn one’s head’), and [ʧēé] was likely historically a verb stem, given the existence of the reduplicated form [ʧēéʧēé], ‘hurry’.

Given the facts presented thus far in this section, I assume that within the verb complex, the verb stem is a word on its own, and the combination of a group 1 subject marker and a following cliticizing TAM marker is a separate word. The other set of TAM markers (non-cliticizing markers such as [bōŋà], [ʧēé], etc.) appear to be words in their own right that do not cliticize to the subject markers. Furthermore, I assume that both of the H association rules proposed above apply within each word. It is possible that the other rules proposed above also apply within each word, but it is impossible to tell for

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\(^{175}\) [ATR] harmony is mentioned here as further evidence that the two types of TAM markers behave differently (and in support of the theory advanced at the end of this paragraph that the non-cliticizing markers were historically verb stems). The harmony data does not provide evidence for or against the hypothesis that TAM markers such as [tì] cliticize leftward to the subject markers. In fact, assuming that the tone attachment rules being discussed here apply within a word, the domain of application for vowel harmony must be larger than the word. Vowel harmony behavior, therefore, does not provide evidence regarding the constituents of any given word, but rather serves as an indicator of some larger domain of rule application. It is still significant, however, that the two types of TAM markers exhibit differing behavior with respect to vowel harmony.
sure with the available data. For example, there is no evidence either for or against the proposal that the domain of application of Mora Insertion and H Spreading would also be the word. Lacking evidence to the contrary, I assume that if there were non-stem words with final consonants, or with more than two moras (at least within the verb complex), these other rules would also apply within those words.

A derivation of a form with a toneless stem [ń tɨ bidà], ‘I am throwing (it) away’, is given in (54), assuming that the imperfective marker [tɨ] is a clitic. Recall that the subject marker is a syllabic nasal, so it receives a mora in the prosodification process that is assumed to happen before this derivation. Each word in the derivation is delineated by the square brackets, [ ]. The only H tone here is the subject marker tone:

(54) a. [ n t ţ ] [ b i d a ]
   \[ \mu \mu \mu \mu \] Output of Syllabification
   H
   b. [ n t ţ ] [ b i d a ]
   \[ \mu \mu \mu \mu \] Second Mora H Docking
   H
   c. [ n t ţ ] [ b i d a ]
   \[ \mu \mu \mu \mu \] Surface Form
   H

In a form without any TAM marker, First Mora H Docking comes into play for the association of the subject marker tone, as shown in (55) with the form [ń bidà], ‘I threw (it) away’:

(55) a. [ n ] [ b i d a ]
   \[ \mu \mu \mu \] Output of Syllabification
   H
As was shown in Chapter 4, it is also possible to have various combinations of markers within the same clause, as shown in (56):

(56) a. ń bʊŋ̂a ti bidà  ‘I was throwing (it) away long ago.’
    b. ń ʧèè ti bidà  ‘I have been throwing (it) away.’
    c. ń ʧèè bʊŋ̂a ti bidà  ‘I had been throwing (it) away long ago.’

As (56) shows, the grammatical tone that occurs on verb stems following a non-cliticizing TAM marker does not appear if the following element is a TAM marker (of either type) rather than a verb stem. This data supports the analysis that this particular type of grammatical tone arose from verb (or verb phrase) concatenation constructions, since it only occurs when the triggering TAM marker immediately precedes the verb stem (not when a non-cliticizing TAM marker is the closest to the stem). More on TAM marker ordering is found in Appendix A.

There is at least one marker that has not yet been discussed and is likely a cliticizing marker. This is the marker [tì], indicating the expected culmination of a series of eventualities. Some [tì]-marked sentences (with toneless stems) are given in (57). Only the first- and third-person plural are given for the sake of brevity, but they are representative of, respectively, clauses with subject marker tone, and those without:

(57) a. ń 'ti bidà  ‘I eventually threw away.’
    à ti bidà  ‘S/he eventually threw away.’
    b. ń 'tí bʊŋ̂à  ‘I eventually turned my head.’
    à tí bʊŋ̂à  ‘S/he eventually turned her/his head.’
There are actually two possible analyses of the examples in (57) that could account for the subject marker tones and the tone on the TAM marker. One option is that [tì] is not a cliticizing TAM marker, but that there are two separate words here before the stem, each with its own H tone. The second option is that [tì] does in fact cliticize, like the imperfective markers discussed above, and that the forms here illustrate two tones on the same word. In simply looking at the subject marker and the TAM marker in these cases, it is impossible to know which analysis is preferred. One important fact, however, is that all clearly non-cliticizing TAM markers cause a grammatical H tone on the following verb stem, as was shown above in (50b) and (51). There is no such tone in the forms in (57). Additionally, [tì] undergoes [ATR] harmony, as expected for cliticizing markers. I therefore assume that [tì] is in fact a cliticizing TAM marker.

Given this assumption, the question is whether or not the analysis proposed so far can account for the linking of two H tones (in this case, the subject marker tone and the lexical tone of the TAM marker) within a single word. In fact, the two association rules previously proposed, in the order proposed, can account for this data, as illustrated in the derivation in (58), for the clause [ń ɬ tì bɨdà], ‘I eventually threw (it) away’:

\[
\begin{array}{c}
\text{Output of Syllabification} \\
\mu & \mu & \mu & \mu \\
\text{H} & \text{H}
\end{array}
\]
From this data, there is no way to know which H tone attaches first. In Chapter 7, however, data will be presented that Second Mora H Docking applies from right to left, and First Mora H Docking from left to right. Thus, in the derivation in (58), the lexical H of the TAM marker must follow the subject-marker tone.

An important aspect of the data given above that has been ignored in the previous derivations is the presence of downstep, which obviously needs to be accounted for in the analysis. As was mentioned in Chapter 5, downstep in Anii occurs always and only between adjacent H tones at morpheme boundaries. That is, two H-toned morphemes can never be adjacent across a morpheme boundary without a downstep occurring.\(^{177}\) Note, however, that the two H tones must be immediately adjacent for downstep to occur. If there is a toneless mora in between, the register lowering does not happen, as is illustrated with the bimoraic H toned stems in (59):

\[
\begin{align*}
\text{(59) a. } & \text{'I eventually refused.'} \\
& \text{á tɨ bílà} \\
\text{b. } & \text{'S/he eventually refused.'} \\
& \text{à tɨ bílà}
\end{align*}
\]

\(^{176}\) This is the phonological surface form with no downstep transcription included. It will be argued shortly that downstep is a phonetic, not a phonological process, so this is technically the correct output of the phonology. Future derivations will, however, transcribe downstep in the surface form, once an analysis for downstep has been proposed.

\(^{177}\) There is at least one apparent exception to this claim, where there is no downstep between adjacent H-toned morphemes, but that exception can be explained (and is, in Chapter 7) by assuming that where there are two adjacent H-toned morphemes with no downstep in between them, they are actually linked to the same H tone.
The data in (59) illustrates that, as was mentioned briefly in Chapter 5, Anii does not have downdrift (i.e. automatic downstep). This is not surprising, since Anii does not have specified L tones, and the reader will recall that downdrift is generally analyzed as register lowering triggered by a L-toned TBU.

As discussed in Chapter 5, there are two options that should be considered regarding how downstep could be analyzed in Anii. One option is to assume that downstep is caused by floating L tones. There are, however, no other tonal phenomena within the Anii verb complex (and likely in Anii in general) that would require that any kind of specified L tones be present. Therefore, analyzing downstep in this manner would require positing both a number of floating L tones (the only L tones in the language, and for which there is no independent evidence), inserted at morpheme boundaries, and a L tone insertion rule that is not otherwise needed. Additionally, an ‘extra’ (i.e. not independently required) rule would be needed to account for the register lowering affect of downstep, i.e. a rule that states that floating L tones cause register lowering.

The other possible analysis of this phenomenon is that downstep is an automatic phonetic process in Anii that occurs between adjacent H tones. This type of analysis has the advantage of not positing entities (i.e. L tones) or rules (e.g. L-insertion) that are not

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178 On some long phrases in Anii, there does seem to be a gradual declination of pitch register, but this is a general downward trend, not a stepwise register lowering.
needed elsewhere in the phonology. Since downstep only occurs at morpheme boundaries in Anii, however, the question of whether this option is simpler than the floating L tone analysis depends on how many H tones are present within each morpheme, i.e. how many fusion rules would be needed in order to prevent downstep from occurring within morphemes. In all the data presented thus far, there are no examples where there is more than one H tone within a morpheme, meaning no fusion rules are needed. As Chapter 7 will show, two such rules are in fact necessary within the verb complex to account for verb stems with both lexical and grammatical tone, and for grammatically reduplicated forms, but no other fusion rules are needed to account for the data presented in this dissertation. It seems, then, that the H concatenation-based analysis of downstep is simpler than the floating L analysis for Anii.

I assume, then, that downstep in Anii does not involve any phonological processes at all, but is a matter of phonetic implementation. That is, when two H tones are attached to adjacent moras, the second H and all subsequent tones are automatically pronounced in a lower pitch register. Since it is not expected that a phonetic implementation process could be sensitive to deeper structural elements like morpheme boundaries, I assume that downstep occurs between any two H tones on adjacent moras, without reference to morpheme boundaries. This means that to account for the fact that downstep only occurs at morpheme boundaries, there must never be more than one H tone in a given morpheme by the time downstep occurs. In the data given thus far, this is not a problem since there is never more than one H tone within a morpheme in any of the examples presented above. The next chapter will address the question of what happens in the one situation in which there is more than one H tone in a single morpheme.

A derivation for the sentence [ń ' tí bòdó], ‘I even climbed’ is given in (60). Downstep is indicated in the surface form where it is applicable:

(60) a. [ n    t  i ] [ b  o d  o ]

Output of Syllabification

\[ \mu \mu \mu \mu \]

H H H
Further evidence that downstep does in fact occur in Anii every time there are two
H tones on adjacent moras across a morpheme boundary is given in the following
examples with H-initial verb stems. The examples in (61) are with the imperfective
marker [tí], and those in (62) are marked with the culmination marker [tí]:

(61) a. ǹ tì kpá ‘I am arriving.’
      à tì kpá ‘S/he is arriving.’
  b. ǹ tì tò ‘I am enduring.’
      à tì tò ‘S/he is enduring.’
  c. ǹ tìʧ éú ‘I am reciting.’
      õ tìʧ éú ‘S/he is reciting.’
  d. ǹ tì bór ‘I am good.’
      õ tì bór ‘S/he is good.’
  e. ǹ tì kpór ‘I am growing.’
      õ tì kpór ‘S/he is growing.’
  f. ǹ tì li ‘I am getting lost.’
      õ tì li ‘S/he is getting lost.’
  g. ǹ tìʧ í ‘I am dying.’
      õ tìʧ í ‘S/he is dying.’

(62) a. ǹ’ tì kpá ‘I eventually arrived’
      à tì kpá ‘S/he eventually arrived.’
  b. ǹ’ tì tò ‘I eventually endured.’
      à tì tò ‘S/he eventually endured.’
  c. ǹ’ tìʧ éú ‘I eventually recited.’
      õ tìʧ éú ‘S/he eventually recited.’
The data in (61) and (62) illustrate that downstep occurs not only between H-toned subject markers and H-toned TAM markers, but also between H-toned TAM markers and H-initial verb stems, as expected given the analysis proposed above.

This section has presented lexical tone on subject markers and TAM markers, and proposed that the domain of application for most (if not all) of the tonal rules discussed thus far (at least within the verb complex) is the word. It was also shown that there are two types of TAM markers in Anii, one type that cliticizes to a preceding subject marker, and one type that does not. Lexical tone within the verb complex has now been completely presented and analyzed, and the important features of pre-stem tone in the verb complex have been addressed.

6.5 Conclusions

This chapter has presented the basics of Anii tone, and provided an introduction to lexical tone in the Anii verb complex. This overview and analysis includes discussion of lexical tone on verb stems, and is a thorough presentation of all the known aspects of lexical tone in the verb complex. Tone on TAM markers and subject markers has also been addressed. This section provides a summary of these findings, and further discussion of some theoretical issues that have been raised.

The data presented in this chapter has illustrated that Anii has two surface tones, L and H, but that only H tones are phonological entities. The analysis given here argues that moras pronounced with a L tone on the surface are actually toneless, and that surface L pitch is the result of phonetic implementation. Additionally, processes of tone
association and spreading, mora insertion, and glide deletion have been exemplified and analyzed, leading to a proposed set of ordered rules to account for the placement of lexical H tones on all stem types, as well as tone attachment on subject markers and TAM markers. It has also been argued that downstep in Anii is a surface-level phonetic phenomenon whereby register lowering occurs between any two adjacent H tones across a morpheme boundary. This basic analysis will be expanded to account for grammatical tone in the following chapter.

There are two main theoretical issues that have been raised by the data presented in this chapter, and which will be pursued further in the following chapter. The first issue relates to the moraicity of coda consonants and the question of whether or not Anii has a WBP rule. In fact, it has been shown in this chapter that, while some consonants are underlingly moraic in Anii, the majority of consonants are non-moraic, both underlingly and on the surface. The exception to this generalization is that underlingly non-moraic consonants that occur word-finally receive a mora after tone attachment but before the application of other tonal rules, so that those consonants are moraic on the surface. Further support for this analysis of word-final coda consonants comes from the grammatical tone data given in the next chapter.

The data presented in this chapter has also shown that Anii has two types of TAM markers that behave differently with respect to tone association, likely due to differences in syntactic structure (i.e. whether or not they are clitics). Data on the interaction of lexical and grammatical tone to be presented in the next chapter will shed further light on the behavior of these two types of TAM markers, and provide further evidence supporting the argument that these two categories of markers exist.
Chapter 7
Grammatical Tone in the Anii Verb Complex

This chapter examines grammatical tone in Anii, building on the analysis begun in Chapter 6. There is one major\(^{179}\) type of grammatical tone in Anii, and at least one minor pattern. The major grammatical tone pattern occurs in a variety of different grammatical structures, including in clauses marked with certain TAM markers (i.e. those that may have historically been verb stems such as [ʧèé], [bòŋà] and [jè]), at least one other context involving clause concatenation, as well as in irrealis\(^{180}\) clauses. The minor grammatical tone pattern that is presented here occurs in clauses with grammatical reduplication.

Section 7.1 presents TAM-marked realis clauses that bear this type of grammatical tone, and illustrates how that tone interacts with lexical tone patterns. Section 7.2 discusses grammatical tone in irrealis clauses, with a focus on the future and negation. This section also covers the interaction between grammatical tone and the irrealis subject markers, and the additional complications introduced by negation and TAM markers in irrealis clauses. Section 7.3 discusses tonal patterns with a productive grammatical reduplication process (used to express contrastive verb focus). Finally, Section 7.4 concludes, providing a brief discussion of possible semantic and syntactic meanings contributed by these grammatical tones.

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\(^{179}\) I use ‘major’ and ‘minor’ here in the sense of frequency of occurrence. The ‘major’ pattern occurs in much more than half of the sentences in my text corpus, the ‘minor’ pattern is more rare.

\(^{180}\) Recall from Chapter 3 that the term ‘irrealis’ is used in this dissertation to refer to a specific construction used in future clauses, negative clauses, and several other environments, as discussed at the end of Chapter 3.
7.1 Grammatical Tone with TAM Markers and Concatenation Constructions

As was illustrated in the previous chapter, there are TAM markers in Anii (e.g. [tì], [nà] and [tì], among others) which do not generally trigger the presence of a grammatical tone on a following verb stem. These are the markers I refer to here as ‘cliticizing TAM markers’. There is also a second set of TAM markers (those which were hypothesized in the previous chapter to be non-cliticizing, and to be historically derived from verb stems). When one of these non-cliticizing markers is present in a clause, a grammatical H tone also appears on the following verb stem. This grammatical tone pattern is illustrated and analyzed with multisyllabic stems in 7.1.1, and with monosyllabic stems in 7.1.2. Lexically-reduplicated stems are addressed in Section 7.1.3, and Section 7.1.4 discusses clauses with multiple TAM markers. Section 7.1.5 concludes this section.

7.1.1 Grammatical Tone from TAM Markers with Multisyllabic Stems

In clauses containing a non-cliticizing TAM marker, a grammatical H tone is present on the verb stem that follows the TAM marker. This type of grammatical tone is illustrated in (1) with bisyllabic (and bimoraic) toneless verb stems in clauses marked with [bòŋà]:

(1) a. ń bòŋà bidá ‘I threw (it) away long ago.’
    ó bòŋà bidá ‘You (sg) threw (it) away long ago.’
    à bòŋà bidá ‘S/he threw (it) away long ago.’
    ɓí bòŋà bidá ‘We threw (it) away long ago.’
    ɗí bòŋà bidá ‘You (pl) threw (it) away long ago.’
    bà bòŋà bidá ‘They threw (it) away long ago.’

b. ń bòŋà bòŋá ‘I turned my head long ago.’
    ó bòŋà bòŋá ‘You (sg) turned your head long ago.’
    à bòŋà bòŋá ‘S/he turned her/his head long ago.’
    ɓí bòŋà bòŋá ‘We turned our heads long ago.’
    ɗí bòŋà bòŋá ‘You (pl) turned your heads long ago.’
    bà bòŋà bòŋá ‘They turned their heads long ago.’

c. ń bòŋà döŋó ‘I made a field by burning long ago.’
    ó bòŋà döŋó ‘You (sg) made a field by burning long ago.’
    à bòŋà döŋó ‘S/he made a field by burning long ago.’
    ɓí bòŋà döŋó ‘We made a field by burning long ago.’
You (pl) made a field by burning long ago.
They made a field by burning long ago.
I stopped long ago.
You (sg) stopped long ago.
S/he stopped long ago.
You (pl) stopped long ago.
They stopped long ago.
I got dressed long ago.
You (sg) got dressed long ago.
S/he got dressed long ago.
We got dressed long ago.
You (pl) got dressed long ago.
They got dressed long ago.
I coughed long ago.
You (sg) coughed long ago.
S/he coughed long ago.
We coughed long ago.
You (pl) coughed long ago.
They coughed long ago.
I was quiet long ago.
You (sg) were quiet long ago.
S/he was quiet long ago.
We were quiet long ago.
You (pl) were quiet long ago.
They were quiet long ago.
I heard long ago.
You (sg) heard long ago.
S/he heard long ago.
We heard long ago.
You (pl) heard long ago.
They heard long ago.

In the examples in (1), the grammatical H tone surfaces on the second mora of the stem. There is no lexical tone here. Compare (1) with (2), where unmarked forms (repeated from Chapter 6) are given. Note that the forms in (2) have no tone where those in (1) exhibit a grammatical tone on the second mora:

(2)  
(a)  ñ bidá  'I threw (it) away.'  
(b)  ñ bòńá  'I turned my head.'  
(c)  ñ dònjo  'I made a field by burning.'
d. ń jídè  ‘I stopped.’
e. ń kàrá  ‘I got dressed.’
f. ń kòlò  ‘I coughed.’
g. ń nòrà  ‘I am being quiet.’
h. ń ròŋò  ‘I heard.’

Similar grammatical tone patterns to those shown in (1) are found with other TAM markers. From here on, I will give only the first- and third-person singular forms, which are representative of the two possible subject marker patterns. The examples in (3) illustrate grammatical tone with the perfect marker [ʧèé], again with toneless verb stems:

(3) a. ń ʧèé bídá  ‘I have thrown (it) away.’
   ő ʧèé bídá  ‘S/he has thrown (it) away.’
b. ń ʧèé bùŋá  ‘I have turned my head.’
   ő ʧèé bùŋá  ‘S/he has turned her/his head.’
c. ń ʧèé dòŋo  ‘I have made a field by burning.’
   ő ʧèé dòŋo  ‘S/he has made a field by burning.’
d. ń ʧèé jídé  ‘I have stopped.’
   ő ʧèé jídé  ‘S/he has stopped.’
e. ń ʧèé kàrá  ‘I have gotten dressed.’
   ő ʧèé kàrá  ‘S/he has gotten dressed.’
f. ń ʧèé kòlò  ‘I have coughed.’
   ő ʧèé kòlò  ‘S/he has coughed.’
g. ń ʧèé nòrà  ‘I have been quiet.’
   ő ʧèé nòrà  ‘S/he has been quiet.’
h. ń ʧèé ròŋò  ‘I have heard.’
   ő ʧèé ròŋò  ‘S/he has heard.’

As in (1), the grammatical tone is on the second mora of the verb stem in these examples.

Similarly, grammatical tone with the marker [jè] is illustrated in (4), and the same tone pattern with another TAM marker, /ʧòŋ̥/ is illustrated in (5) for further comparison:

(4) a. ń jè bídá  ‘I even threw (it) away.’
    ő jè bídá  ‘S/he even threw (it) away.’
b. ń jè bùŋá  ‘I even turned my head.’
    ő jè bùŋá  ‘S/he even turned her/his head.’
c. ń jè dòŋo  ‘I even made a field by burning.’
    ő jè dòŋo  ‘S/he even made a field by burning.’
d. ñ jè jidé  ‘I even stopped.’
  ñ jè jidé  ‘S/he even stopped.’
e. ñ jè kárá  ‘I even got dressed.’
  ñ jè kárá  ‘S/he even got dressed.’
f. ñ jè kòló  ‘I even coughed.’
  ñ jè kòló  ‘S/he even coughed.’
g. ñ jè nòrá  ‘I was even quiet.’
  ñ jè nòrá  ‘S/he was even quiet.’
h. ñ jè røŋò  ‘I even heard.’
  ñ jè røŋò  ‘S/he even heard.’

(5) a. ñ ʧɔɔ bidá  ‘I really threw (it) away.’
  à ʧɔɔ bidá  ‘S/he really threw (it) away.’
b. ñ ʧɔɔ bøŋá  ‘I really turned my head.’
  à ʧɔɔ bøŋá  ‘S/he really turned her/his head.’
c. ñ ʧɔɔ døŋò  ‘I really made a field by burning.’
  à ʧɔɔ døŋò  ‘S/he really made a field by burning.’
d. ñ ʧɔɔ jidé  ‘I really stopped.’
  à ʧɔɔ jidé  ‘S/he really stopped.’
e. ñ ʧɔɔ kárá  ‘I really got dressed.’
  à ʧɔɔ kárá  ‘S/he really got dressed.’
f. ñ ʧɔɔ kòló  ‘I really coughed.’
  à ʧɔɔ kòló  ‘S/he really coughed.’
g. ñ ʧɔɔ nòrá  ‘I really was quiet.’
  à ʧɔɔ nòrá  ‘S/he really was quiet.’
h. ñ ʧɔɔ røŋò  ‘I really heard.’
  à ʧɔɔ røŋò  ‘S/he really heard.’

The data on /ʧɔɔ/ is included to show that there more TAM markers in this set than those presented in detail here. Other examples are the TAM /kɔɔ/, with a meaning similar to the English adverbial ‘again’, and the TAM /ʃɩ/, with a meaning similar to the adverbial ‘anyway’. Further data regarding the meaning of these TAM markers will be the subject of future research, but the important point here is that verb stems in clauses marked with all of these markers have the same grammatical tone pattern.

What can be seen from the data in (1)-(5) is that this type of grammatical tone associates to the second mora of a toneless verb stem. Recall from Chapter 6, however,

181 The meaning of [ʧɔɔ] has yet to be determined, but it has to do with a sense of ‘very much’, or insistence, or satisfaction. I have chosen the translation ‘really’ (in the sense of ‘really good’) for the moment, but a full investigation of this marker is unfortunately beyond the scope of this dissertation, and will be left for future research.
that in stems with lexical H tones and no grammatical tone, the lexical tone surfaces on
the second mora, as shown in (6) (repeated from the previous chapter):

(6) a. ń bîlā  ‘I refused.’
    b. ń bódó  ‘I climbed.’
    c. ń bônó  ‘I finished.’
    d. ń drèdè  ‘I visited (it).’
    e. ń fâná  ‘I taught (it).’
    f. ń fôdó  ‘I undressed.’
    g. ń kidé  ‘I watched.’
    h. ń sálá  ‘I greeted (them).’

Examples (7)-(9) below illustrate bisyllabic (and bimoraic) H-toned stems where
both lexical and grammatical tone are linked:

(7) a. ń bôŋa bîlā  ‘I refused long ago.’
    à bôŋa bîlā  ‘S/he refused long ago.’
    b. ń bôŋa bôdó  ‘I climbed long ago.’
    à bôŋa bôdó  ‘S/he climbed long ago.’
    c. ń bôŋa bônó  ‘I finished long ago.’
    à bôŋa bônó  ‘S/he finished long ago.’
    d. ń bôŋa drèdè  ‘I visited (it) long ago.’
    à bôŋa drèdè  ‘S/he visited (it) long ago.’
    e. ń bôŋa fâná  ‘I taught long ago.’
    à bôŋa fâná  ‘S/he taught long ago.’
    f. ń bôŋa fôdó  ‘I undressed long ago.’
    à bôŋa fôdó  ‘S/he undressed long ago.’
    g. ń bôŋa kidé  ‘I watched long ago.’
    à bôŋa kidé  ‘S/he watched long ago.’
    h. ń bôŋa sálá  ‘I greeted (them) long ago.’
    à bôŋa sálá  ‘S/he greeted (them) long ago.’

(8) a. ń ñêê  bîlā  ‘I have refused.’
    à ñêê  bîlā  ‘S/he has refused.’
    b. ń ñêê  bôdó  ‘I have climbed.’
    à ñêê  bôdó  ‘S/he has climbed.’
    c. ń ñêê  bônó  ‘I have finished.’
    à ñêê  bônó  ‘S/he has finished.’
    d. ń ñêê  drèdè  ‘I have visited (it).’
    à ñêê  drèdè  ‘S/he has visited (it).’
As these examples show, if there is both a lexical and a grammatical tone, one links to the first mora, and one to the second mora. Since the forms marked with [jè] are essentially the same (tone-wise) as those marked with [bʊŋà] (as are those with other markers of this type, as far as I know), from now on, I will only provide data for forms marked with [bʊŋà] and [ʧèé], i.e. one toneless and one H-toned TAM marker.

An important point about the data in (7)-(9) is that despite the fact that there are two different H tones on each stem (one lexical and one grammatical), there is no downstep between them. This lack of downstep indicates that on the surface (when downstep occurs), these two H tones must actually be one multiply-linked H tone. Therefore, there must be a rule that causes adjacent singly-linked H tones within a morpheme to become one multiply-linked H. This could be accomplished by a rule such as that in (10):

```
(10) a. ń jè bìlá  ‘I even refused.’
   ò jè bìlá  ‘S/he even refused.’
b. ń jè bódó  ‘I even climbed.’
   ò jè bódó  ‘S/he even climbed.’
c. ń jè bönó  ‘I even finished.’
   ò jè bönó  ‘S/he even finished.’
d. ń jè dğédé  ‘I even visited (it).’
   ò jè dğédé  ‘S/he even visited (it).’
e. ń jè fàná  ‘I even taught.’
   ò jè fàná  ‘S/he even taught.’
f. ń jè fódó  ‘I even undressed.’
   ò jè fódó  ‘S/he even undressed.’
g. ń jè kidé  ‘I even watched.’
   ò jè kidé  ‘S/he even watched.’
h. ń jè sálá  ‘I even greeted (them).’
   ò jè sálá  ‘S/he even greeted (them).’
```
This rule says that the first H of a pair of Hs linked to adjacent moras spreads rightward, and the second H delinks. The output of this rule is a H tone linked to both moras, followed by a floating tone. This is not strictly a fusion rule (the two tones do not become one), but actual fusion (i.e. the merging of two tones into one) is not an operation that is needed for the analysis of Anii. Indeed, as will be seen in the discussion of lexically-reduplicated stems in Section 7.1.3 below, an actual fusion operation would not correctly account for the Anii data.

Of course, the problem with the rule in (10) is that it is unrestricted in its application—there is no part of the rule that specifies that it only applies within a given morpheme. Without such a specification, this rule would clearly lead to incorrect derivations. For example, there is downstep after monomoraic H-toned morphemes (e.g. [ń' tǐ' kpá], ‘I eventually arrived’). If the fusion rule applied as written above, such forms could not be correctly derived, since the adjacent H tones on e.g. [ń] and [tì] would become a multiply-linked H tone, and there would be no downstep at that morpheme boundary.

One way to avoid this problem would be simply to stipulate that the rule only applies within a morpheme. A more principled way to accomplish this goal, however, given that verb stems are the only morphemes within the verb complex for which fusion is needed, would be to assume that the rule in (10) only applies within verb stems, i.e. only H tones attached to stem moras fuse, as in (11), where $\mu_s$ is a stem mora:\footnote{Another way to achieve the desired outcome here would be a level ordering approach. Such an approach would assume that the association and spreading rules apply first within the verb stem, then a general fusion rule that fuses adjacent H tones applies, and then the attachment and spreading rules apply at another level, e.g. in subject markers and TAM markers (where the fusion rule does not apply). This type of approach would account for the same data as the rule in (11), by effectively restricting fusion to only the verb stem. The approach in (11), however, accounts for the same data in a more efficient manner, without requiring multiple applications of the same rule to be ordered differently.}
The rule in (11) is the only fusion rule needed to account for tonal behavior and downstep in the data given thus far.

With the addition of the H Fusion rule, all the data presented thus far in this chapter can be accounted for if we assume that the same set of rules that apply to lexical tones also apply to grammatical tones. These rules are repeated here for reference. They apply basically in this order, though there is no evidence as to the relative order of H Fusion and Glide Deletion, so one order was simply chosen. What is clear is that both of those rules must apply after H Spreading:

(12) a. **Second Mora H Docking**

\[
\begin{array}{c}
\text{word} \\
\mu \\
\ldots \\
H' \\
\end{array}
\]

b. **First Mora H Docking**

\[
\begin{array}{c}
\text{word} \\
\mu \\
H' \\
\end{array}
\]

c. **Mora Insertion**

\[
\begin{array}{c}
\text{C} \\
\ldots \\
\mu & \leftarrow \emptyset
\end{array}
\]

d. **H Spreading**

\[
\begin{array}{c}
\mu_s \\
\ldots \\
H \\
\end{array}
\]

e. **H Fusion (2)**

\[
\begin{array}{c}
\mu_s \\
\ldots \\
H \\
\end{array}
\]

\[
\begin{array}{c}
\mu_s \\
\ldots \\
H \\
\end{array}
\]

\[
\begin{array}{c}
\mu_s \\
\ldots \\
H \\
\end{array}
\]

\[
\begin{array}{c}
\mu_s \\
\ldots \\
H \\
\end{array}
\]

\[
\begin{array}{c}
\mu_s \\
\ldots \\
H \\
\end{array}
\]

\[
\begin{array}{c}
\mu_s \\
\ldots \\
H \\
\end{array}
\]
g. **Glide Deletion**

\[
\begin{array}{c}
\text{[closed]} \\
\text{[+consonantal]} & \rightarrow & \emptyset & / & \text{[-consonantal]} \\
\text{[=T]} \\
\end{array}
\]

Given all the rules in (12), a derivation for the sentence [ň bôŋa bìlá], ‘I refused long ago’, would be as given in (13). As in Chapter 6, words are delineated by [ ], and the moraification and syllabification rules from Chapter 5 are assumed to have already applied. This derivation shows that non-cliticizing TAM markers contribute a grammatical H tone that surfaces on the following word (in this case, the verb stem). For clarity, the grammatical H tones are bolded. Since it is not known whether subject marker tones are lexical or grammatical, I italicize them so as to remain non-committal. Note that the grammatical H is ordered to the left of the lexical H. Evidence supporting this ordering (from data with longer stems and consonant-final stems) will be presented below:

(13) a. \[ n ] [ b ŋ a ] [ b i l a ] \quad \text{Output of Syllabification}

\[
\begin{array}{c|c|c|c|c|c}
\mu & \mu & \mu & \mu & \mu \\
\hline
H & H & H \\
\end{array}
\]

b. \[ n ] [ b ŋ a ] [ b i l a ] \quad \text{Second Mora H Docking}

\[
\begin{array}{c|c|c|c|c|c}
\mu & \mu & \mu & \mu & \mu \\
\hline
H & H & H \\
\end{array}
\]

c. \[ n ] [ b ŋ a ] [ b i l a ] \quad \text{First Mora H Docking}

\[
\begin{array}{c|c|c|c|c|c}
\mu & \mu & \mu & \mu & \mu \\
\hline
H & H & H \\
\end{array}
\]

d. \[ n ] [ b ŋ a ] [ b i l a ] \quad \text{H Fusion}

\[
\begin{array}{c|c|c|c|c|c}
\mu & \mu & \mu & \mu & \mu \\
\hline
H & H & H \\
\end{array}
\]
Note that the lexical H is left floating here. There is no evidence in my data that this floating tone has any phonological impact on surrounding tones, but I assume it is not deleted. The derivation of forms with [jè] would be essentially identical to the derivation in (13).

The derivation of forms with the perfect marker [ʧèé], however, is slightly different because [ʧèé] has a lexical H tone of its own. The same rules are still applicable, however, and downstep occurs here between [ʧèé] and the verb stem, as shown in (14):

(14) a. [ n ] [ʧ e ] [ b i l a ]
   Surface Form
   μ  μ  μ  μ  μ
   H  H  H  H

   b. [ n ] [ʧ e ] [ b i l a ]
   Second Mora H Docking
   μ  μ  μ  μ  μ
   H  H  H  H

   c. [ n ] [ʧ e ] [ b i l a ]
   First Mora H Docking
   μ  μ  μ  μ  μ
   H  H  H  H

   d. [ n ] [ʧ e ] [ b i l a ]
   H Fusion
   μ  μ  μ  μ  μ
   H  H  H  H

   e. [ n ] [ʧ e ] [ b i l a ]
   Surface Form
   μ  μ  μ  μ  μ
   H  H  H  H
As these derivations have illustrated, for the data given so far in this chapter, the only change from the rules proposed for Chapter 6 is the addition of H Fusion.

Recall from Chapter 6 that disyllabic consonant-final forms without grammatical tone have the forms as follows:

(15) a. ń kàŋkîr ‘I am strong.’
    b. ń pàtîr ‘I am stuck (to a flat surface).’
    c. ń sàŋkèr ‘I separated’
    d. ń kòkîr ‘I scooped out/emptied (it).’
    e. ń djàmpâl ‘I licked.’
    f. ń fàtôr ‘I felt.’
    g. ń kàwiîr ‘I harvested by digging.’
    h. i pàtôr ‘It lost leaves.’
    i. ń sàkîl ‘I rinsed.’
    j. ń pàkôl ‘I pushed.’
    k. ń tûtûr ‘I pushed.’

In comparison, disyllabic consonant-final forms marked with [bʊŋà] are illustrated below, with toneless forms in (16) and H-toned forms in (17):

(16) a. ń bʊŋà kàŋkîr ‘I was strong long ago.’
    à bʊŋà kàŋkîr ‘S/he was strong long ago.’
    b. ń bʊŋà pàtîr ‘I was stuck (to a flat surface) long ago.’
    à bʊŋà pàtîr ‘S/he was stuck (to a flat surface) long ago.’
    c. ń bʊŋà sàŋkèr ‘I separated long ago.’
    à bʊŋà sàŋkèr ‘S/he separated long ago.’
    d. ń bʊŋà kòkîr ‘I scooped out/emptied (it) long ago.’
    à bʊŋà kòkîr ‘S/he scooped out/emptied (it) long ago.’

(17) a. ń bʊŋà djàmpâl ‘I licked long ago.’
    à bʊŋà djàmpâl ‘S/he licked long ago.’
    b. ń bʊŋà fàtôr ‘I felt long ago.’
    à bʊŋà fàtôr ‘S/he felt long ago.’
    c. ń bʊŋà kàwiîr ‘I harvested by digging long ago.’
    à bʊŋà kàwiîr ‘S/he harvested by digging long ago.’
    d. i bʊŋà pàtôr ‘It lost leaves long ago.’
    e. ń bʊŋà sàkîl ‘I rinsed long ago.’
    à bʊŋà sàkîl ‘S/he rinsed long ago.’
    f. ń bʊŋà pàkôl ‘I pushed long ago.’
    à bʊŋà pàkôl ‘S/he pushed long ago.’
The same stems marked with [ʧèé] are in (18) and (19):

(18)  a. ńʧèέ kàŋkɨr  ‘I have been strong.’
      òʧèέ kàŋkɨr  ‘S/he has been strong.’
   b. ńʧèέ pàtɨr  ‘I have been stuck (to a flat surface).’
      òʧèέ pàtɨr  ‘S/he has been stuck (to a flat surface).’
   c. ńʧèέ sònkJör  ‘I have separated’
      òʧèέ sònkJör  ‘S/he has separated’
   d. ńʧèέ kòkɨr  ‘I have scooped out/emptied (it).’
      òʧèέ kòkɨr  ‘S/he has scooped out/emptied (it).’

(19)  a. ńʧèέ ʧɔ\mpɔl  ‘I have licked.’
      òʧèέ ʧɔ\mpɔl  ‘S/he has licked.’
   b. ńʧèέ ʧɔtɔr  ‘I have felt.’
      òʧèέ ʧɔtɔr  ‘S/he has felt.’
   c. ńʧèέ káwɨr  ‘I have harvested by digging.’
      òʧèέ káwɨr  ‘S/he has harvested by digging.’
   d. iʧèέ pàtɔr  ‘It has lost leaves.’
   e. ńʧèέ sàkɨl  ‘I have rinsed.’
      òʧèέ sàkɨl  ‘S/he has rinsed.’
   f. ńʧèέ pàkɔl  ‘I have pushed.’
      òʧèέ pàkɔl  ‘S/he has pushed.’
   g. ńʧèέ tútǔr  ‘I have pushed.’
      òʧèέ tútǔr  ‘S/he has pushed.’

An important point about the data in (16) and (18) is that these trimoraic forms surface with a LHL pattern. That is, it appears that the grammatical tone, unlike the lexical tone discussed previously, does not spread. Compare the forms in (16) and (18) with the H-toned forms in (15 above), where the lexical H tone spreads onto the final consonant.

Because the grammatical tone does not spread, a derivation for the data in (16) according to the set of ordered rules used in the analysis thus far would give the following incorrect result. As an example, I use the clause [ń bōnā pàtɨr], ‘I was stuck long ago.’:
As (20) shows, the ordered set of rules used so far predict an incorrect stem form, *[pətɪr] instead of the actually occurring [pətɪr].

Given the data in (16) and (18), then, the H-Spreading rule must be re-written so that it only applies to lexical H tones. The new version of the rule is in (21), where $H_{\text{lex}}$ refers to a lexical H tone:

\begin{equation}
H_{\text{Spreading (2)}}
\end{equation}
The fact that lexical and grammatical H tones may behave differently with respect to certain rules is not surprising. Similar situations have been documented for other African languages (cf. Odden 1996, 2000, Roberts-Kohno 1999, Goldsmith and Mpiranya 2010).

Given this new formulation of H Spreading, then, the correct derivation of [ní bọ̀nà pàtìër] would be as shown in (22), where H Spreading (2) does not apply because its structural description is not met:

(22) a. [n] [bʊŋa] [p a t i r]   Output of Syllabification

    μ μ μ μ

    H H

b. [n] [bʊŋa] [p a t i r]   Second Mora H Docking

    μ μ μ μ μ

    H H

c. [n] [bʊŋa] [p a t i r]   First Mora H Docking

    μ μ μ μ μ μ

    H H

d. [n] [bʊŋa] [p a t i r]   Mora Insertion

    μ μ μ μ μ μ μ μ

    H H

e. [n] [bʊŋa] [p a t i r]   Surface Form

    μ μ μ μ μ μ μ μ μ

    H H

Note that the final [r] in (22e) has received a mora by Mora Insertion. Since all toneless moras are pronounced as L on the surface, the surface falling tone on the final syllable of examples of this type can thus be accounted for.

With the lexically H-toned stems in (17) and (19), it seems that H Spreading (2) does apply, since the surface tone pattern there is LHH. These forms can only be properly derived, therefore, if we assume that the lexical H is the tone attached to the second mora. Since the grammatical tone does not spread, the attested pattern would not
occur if the grammatical tone were the rightmost tone. To avoid crossed association lines, if the grammatical H were to the right of the lexical H, the grammatical H would have to delink for the lexical H to spread. This extra step is unnecessary if the lexical H is on the second mora and the grammatical H on the first (i.e. if Second Mora H docking applies from right to left, taking the rightmost tone in any sequence).

An additional fact that must be accounted for here is that there is no downstep within the verb stem. Since the stem here ultimately has three moras, this means that H Fusion (2) must apply iteratively. A sample derivation is in (23), with the clause [ń bọ̀nà fətọ́f], ‘I felt long ago.’ Note that the application of H Fusion (2) is shown step by step here to illustrate how it works, though in future derivations, this will not be done:

(23) a. [n] [b ʊŋ a] [f ə t ə r]  
\[ \mu \mu \mu \mu \mu \]  
\[ H \ H \ H \]  
Output of Syllabification
b. [n] [b ʊŋ a] [f ə t ə r]  
\[ \mu \mu \mu \mu \mu \]  
\[ H \ H \ H \]  
Second Mora H Docking
c. [n] [b ʊŋ a] [f ə t ə r]  
\[ \mu \mu \mu \mu \mu \]  
\[ H \ H \ H \]  
First Mora H Docking
d. [n] [b ʊŋ a] [f ə t ə r]  
\[ \mu \mu \mu \mu \mu \mu \]  
\[ H \ H \ H \]  
Mora Insertion
e. [n] [b ʊŋ a] [f ə t ə r]  
\[ \mu \mu \mu \mu \mu \mu \]  
\[ H \ H \ H \]  
H Spreading (2)
f. [n] [b ʊŋ a] [f ə t ə r]  
\[ \mu \mu \mu \mu \mu \mu \]  
\[ H \ H \ H \]  
H Fusion (2) (applies twice)
Thus, all the data presented thus far can be accounted for by assuming that when both a lexical and grammatical H are present in a given stem, the lexical H is the one to which Second Mora H Docking applies. This happens because the grammatical tone is to the left of the lexical tone, and Second Mora H Docking applies right-to-left. Since the grammatical tone is actually triggered by a preceding TAM marker, and the lexical tone is part of the stem, this ordering is not surprising. More evidence regarding this issue (specifically the directionality of First Mora H Docking) will be presented below in the discussion of CVC stems.

To continue the analysis, then, the reader will recall that there are no lexically H-toned trisyllabic stems. The toneless stems do, however, take a grammatical H tone when in clauses marked with [bʊŋà]-like TAM markers. This is illustrated in (24) with [bʊŋà] and in (25) with [ʧeé]

(24) a. ŋ bʊŋà tsɨpɪrə ‘I turned long ago.’
   à bʊŋà tsɨpɪrə ‘S/he turned long ago.’
b. ŋ bʊŋà tsəŋkərə ‘I leaned long ago.’
   à bʊŋə tsəŋkərə ‘S/he leaned long ago.’
c. ŋ bʊŋə nəŋkərə ‘I subsided long ago.’
   à bʊŋə nəŋkərə ‘S/he subsided long ago.’
d. ŋ bʊŋə dzəŋkpətə ‘I am annoyed long ago.’
   à bʊŋə dzəŋkpətə ‘S/he is annoyed long ago.’
e. ŋ bʊŋə sɪŋkílə ‘I am fat long ago.’
   à bʊŋə sɪŋkílə ‘S/he is fat long ago.’
f. ŋ bʊŋə tsikílə ‘I mixed long ago.’
   à bʊŋə tsikílə ‘S/he mixed long ago.’

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The data in (24) and (25) make it clear once again that the grammatical H tone associates to the second mora when there is no lexical tone, and that the grammatical tone does not spread. Recall from Chapter 6 that in unmarked forms, these stems have no H tones (e.g. [ń tsipirà], ‘I turned.’).

The one non-reduplicated quadrimoraic form that I am aware of, which has a lexical H, is shown with both lexical and grammatical tone in (26) and (27). The tone pattern of this stem with no grammatical tone is LHHH, as was shown in Chapter 6 ([ń ʧàárɩ ɩ ɩ ɩ], ‘I bothered (someone)’). The grammatical H in this case links to the first mora, since the lexical H tone has already associated by Second Mora H Docking when First Mora H Docking applies to the grammatical tone. The lexical tone then spreads to the end of the stem:

(26) ń bʊŋà ʧáärɩ ɩ ɩ ɩ ‘I bothered (someone).’
    à bʊŋà ʧáärɩ ɩ ɩ ɩ ‘S/he bothered (someone).’

(27) ń ʧèé ʧáärɩ ɩ ɩ ɩ ‘I bothered (someone).’
    è ʧèé ʧáärɩ ɩ ɩ ɩ ‘S/he bothered (someone).’

The set of ordered rules proposed thus far will account for (26) and (27) with no changes, as illustrated by the derivation in (28):
This section has illustrated that the set of rules proposed above can account for the behavior of both lexical and grammatical tone on multisyllabic stems. The next section discusses the patterns and analysis of grammatical tone on monosyllabic verb stems. It will be shown that the analysis proposed thus far can also account for those forms.
7.1.2 Grammatical Tone from TAM Markers with Monosyllabic Stems

This section will illustrate that the same set of ordered rules proposed for the data presented above can account for the behavior of grammatical tone triggered by non-cliticizing TAM markers on monosyllabic stems. Grammatical tone on toneless CV stems is illustrated in (29) and (30):

(29) a. ŋ bʊŋà dá    ‘I was there long ago.’
    à bʊŋà dá    ‘S/he was there long ago.’
 b. ŋ bʊŋà dú    ‘I sowed long ago.’
    à bʊŋà dú    ‘S/he sowed long ago.’
 c. ŋ bʊŋà dɨ    ‘I ate long ago.’
    à bʊŋà dɨ    ‘S/he ate long ago.’
 d. ŋ bʊŋà fó    ‘I cut a throat long ago.’
    à bʊŋà fó    ‘S/he cut a throat long ago.’
 e. ŋ bʊŋà jú    ‘I cried/wailed long ago.’
    à bʊŋà jú    ‘S/he cried/wailed long ago.’
 f. ŋ bʊŋà jò    ‘I know long ago.’
    à bʊŋà jò    ‘S/he knows long ago.’
 g. ŋ bʊŋà ló    ‘I said long ago.’
    à bʊŋà ló    ‘S/he said long ago.’
 h. ŋ bʊŋà lì    ‘I drew water long ago.’
    à bʊŋà lì    ‘S/he drew water long ago.’
 i. ŋ bʊŋà ló    ‘I wove long ago.’
    à bʊŋà ló    ‘S/he wove long ago.’
 j. ŋ bʊŋà ḥì    ‘I washed myself long ago.’
    à bʊŋà ḥì    ‘S/he washed him/herself long ago.’

(30) a. ŋ ḥèé ᵁ dá    ‘I have been there.’
    ò ḥèé ᵁ dá    ‘S/he has been there.’
 b. ŋ ḥèé ᵁ dú    ‘I have sown.’
    ò ḥèé ᵁ dú    ‘S/he has sown.’
 c. ŋ ḥèé ᵁ dɨ    ‘I have eaten.’
    ò ḥèé ᵁ dɨ    ‘S/he has eaten.’
 d. ŋ ḥèé ᵁ fó    ‘I have cut a throat.’
    ò ḥèé ᵁ fó    ‘S/he has cut a throat.’
 e. ŋ ḥèé ᵁ jú    ‘I have cried/wailed.’
    ò ḥèé ᵁ jú    ‘S/he has cried/wailed.’
 f. ŋ ḥèé ᵁ jò    ‘I have known.’
    ò ḥèé ᵁ jò    ‘S/he has known.’
 g. ŋ ḥèé ᵁ ló    ‘I have said.’
    ò ḥèé ᵁ ló    ‘S/he has said.’

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h. ń fêêł li  ‘I have drawn water.’
  ṣêêł li  ‘S/he has drawn water.’
i. ń fêêł ló  ‘I have woven.’
  ṣêêł ló  ‘S/he has woven.’
j. ń fêêł  ṣê  ‘I have washed myself.’
  ṣêêł  ṣê  ‘S/he has washed him/herself.’

This data is what would be expected if the grammatical tone docks by First Mora H Docking (since there is only one mora in these stems, and no lexical tone).

In H-toned CV stems, both a lexical H tone and a grammatical H tone are present. One of these two tones docks to the available mora, and the second must be left floating. Thus, the surface form of the stems here is pronounced the same way as in unmarked clauses (e.g. [ń kpá], ‘I arrived’), but the tone structure of the stems is actually different, as illustrated in the derivation below. The data is in (31) and (32):

(31) a. ń bôngâ kpá  ‘I arrived long ago.’
   à bôngâ kpá  ‘S/he arrived long ago.’
b. ń bôngâ tó  ‘I lasted/endured long ago.’
   à bôngâ tó  ‘S/he lasted/endured long ago.’
c. ń bôngâ tsí  ‘I went long ago.’
   à bôngâ tsí  ‘S/he went long ago.’
d. ń bôngâ wá  ní  ‘I met with her/him long ago.’
   à bôngâ wá  ní  ‘S/he met with her/him long ago.’
e. ń bôngâ wi  ‘I cooked meat long ago.’
   à bôngâ wi  ‘S/he cooked meat long ago.’

(32) a. ń fêêł kpá  ‘I have arrived.’
   ṣêêł kpá  ‘S/he has arrived.’
b. ń fêêł tó  ‘I have lasted/endured.’
   ṣêêł tó  ‘S/he has lasted/endured.’
c. ń fêêł tsí  ‘I have gone.’
   ṣêêł tsí  ‘S/he has gone.’
d. ń fêêł wá  ní  ‘I have met with her/him.’
   ṣêêł wá  ní  ‘S/he has met with her/him.’
e. ń fêêł wi  ‘I have cooked meat.’
   ṣêêł wi  ‘S/he has cooked meat.’
Example (32d) raises an important point about downstep. The tonal structure of this example (specifically, the first-person example from (32d)) would be something like that given in (33) (the floating tone is circled for clarity). This is because there should be both a lexical and a grammatical tone on the stem in this case, but there is only one mora available for tone association:

\[(33) \quad [n] [ʧ e] [w a] [n i] \]

\[\begin{array}{cccc}
\mu & \mu & \mu & \mu \\
H & H & H & H \\
\end{array}\]

In this particular example, the floating tone could conceivably come between \([wá]\) and [ni], as in (30), or between \([ʧêé]\) and \([wá]\). The structure in (33) will be shown to be the correct one shortly (in the discussion of CVC stems). The important point to be made here is that whether a H tone is floating or associated does not affect whether or not downstep occurs.

The ordered rules above can account for the data in (29)-(32). A sample derivation with a H-toned CV stem is in (34):

\[(34) \quad a. \quad [n] [b ʊ ŋ a] [kp a] \quad Output of Syllabification \]

\[\begin{array}{cccc}
\mu & \mu & \mu & \mu \\
H & H & H & \\
\end{array}\]

\[b. \quad [n] [b ʊ ŋ a] [kp a] \quad First Mora H Docking \]

\[\begin{array}{cccc}
\mu & \mu & \mu & \mu \\
\vdots & \vdots & \vdots & \vdots \\
H & H & H & \\
\end{array}\]

\[b. \quad [n] [b ʊ ŋ a] [kp a] \quad Surface Form \]

\[\begin{array}{cccc}
\mu & \mu & \mu & \mu \\
H & H & H & \\
\end{array}\]
Note that in these examples it is actually impossible to tell which tone is targeted by First Mora H Docking. The H tone which is realized on these stems could, in fact, be the lexical tone if the relevant docking rule applied from right to left. The examples with CVC stems discussed below will, however, illustrate that the structure in (34) is the right one, and First Mora H Docking applies from left to right.

Before discussing CVC stems, however, data regarding CVV stems will be presented. The set of rules proposed thus far can account for TAM-induced grammatical tone on bimoraic CVV forms, just as for the bisyllabic CVCV forms above. The data with toneless stems is given in (35) and (36):

(35) a. ŋ bʊŋa bɔɔ ‘I prepared food long ago.’
   à bʊŋa bɔɔ ‘S/he prepared food long ago.’
b. ŋ bʊŋa ꙍa ‘I diminished long ago.’
   à bʊŋa ꙍa ‘S/he diminished long ago.’
c. ŋ bʊŋa ꙍɔ ‘I returned long ago.’
   à bʊŋa ꙍɔ ‘S/he returned long ago.’
d. ŋ bʊŋa ꙍá ‘I took away long ago.’
   à bʊŋa ꙍá ‘S/he took away long ago.’
e. ŋ bʊŋa ꙍé ‘I was/did long ago.’
   à bʊŋa ꙍé ‘S/he was/did long ago.’
f. ŋ bʊŋa ꙍɔ ‘I sewed long ago.’
   à bʊŋa ꙍɔ ‘S/he sewed long ago.’
g. ŋ bʊŋa ꙍá ‘I reserved long ago.’
   à bʊŋa ꙍá ‘S/he reserved long ago.’
h. ŋ bʊŋa ꙍé ‘I gave (it) long ago.’
   à bʊŋa ꙍé ‘S/he gave (it) long ago.’
i. ŋ bʊŋa ꙍá ‘I lifted (it) long ago.’
   à bʊŋa ꙍá ‘S/he lifted (it) long ago.’
j. ŋ bʊŋa ꙍo ‘I took (it) long ago.’
   à bʊŋa ꙍo ‘S/he took (it) long ago.’
k. ŋ bʊŋa ꙍé ‘I faked a cut long ago.’
   à bʊŋa ꙍé ‘S/he faked a cut long ago.’

(36) a. ŋ ꙍé bɔɔ ‘I have prepared food.’
   à ꙍé bɔɔ ‘S/he has prepared food.’
b. ŋ ꙍé ꙍa ‘I have diminished.’
   à ꙍé ꙍa ‘S/he has diminished.’
c. ŋ ꙍé ꙍɔ ‘I have returned.’
   à ꙍé ꙍɔ ‘S/he has returned.’

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d. ńʧèé làá  ‘I have taken away.’
  ṭʧèé làá  ‘S/he has taken away.’

e. ńʧèé lèé  ‘I have been/done (it).’
  ṭʧèé lèé  ‘S/he has been/done (it)’

f. ńʧèé pɔɔ  ‘I have sewed.’
  ṭʧèé pɔɔ  ‘S/he has sewed.’

g. ńʧèé sàá  ‘I have reserved.’
  ṭʧèé sàá  ‘S/he has reserved.’

h. ńʧèé fèé  ‘I have given (it).’
  ṭʧèé fèé  ‘S/he has given (it).’

i. ńʧèé tàá  ‘I have lifted (it).’
  ṭʧèé tàá  ‘S/he has lifted (it).’

j. ńʧèé tɔɔ  ‘I have taken (it).’
  ṭʧèé tɔɔ  ‘S/he has taken (it).’

k. ńʧèé dɛɛ  ‘I have faked a cut.’
  ṭʧèé dɛɛ  ‘S/he has faked a cut.’

In these examples, since there is no lexical tone, the grammatical tone attaches to the second mora of the stem by Second Mora H Docking, as expected.

In bimoraic CVV forms with a lexical H tone, the lexical H tone attaches by Second Mora H Docking, and the grammatical H then attaches to the first mora by First Mora H Docking, just as with the bisyllabic stems above. H Fusion (2) must also apply, since there is no downstep between the two H tones here. The data is in (37) and (38):

(37) a. ń bɔɲà dóó  ‘I went out long ago.’
  ṭbɔɲà dóó  ‘S/he went out long ago.’

b. ń bɔɲà sàá  ‘I waited long ago.’
  ṭbɔɲà sàá  ‘S/he waited long ago.’

(38) a. ńʧèé tóó  ‘I have gone out.’
  ṭʧèé tóó  ‘S/he has gone out.’

b. ńʧèé sàá  ‘I have waited.’
  ṭʧèé sàá  ‘S/he has waited.’

A derivation of this type of data would be almost identical to the derivations for bisyllabic stems given in (13) and (14) above.
As discussed in the previous chapters, CVV stems with diphthongs are monomoraic, and thus behave similarly to CV stems. The data for toneless stems with diphthongs is given in (39) and (40). The H tone here is assumed to be the grammatical H, as with CV stems:

(39) a. ŋ bʊŋa dóú ‘I raised (livestock) long ago.’
    à bʊŋa dóú ‘S/he raised (livestock) long ago.’
b. ŋ bʊŋa kóú ‘I threw (it) long ago.’
    à bʊŋa kóú ‘S/he threw (it) long ago.’
c. ŋ bʊŋa lɛá ‘I laughed long .’
    à bʊŋa lɛá ‘S/he laughed long ago.’
d. ŋ bʊŋa náó ‘I dammed long ago.’
    à bʊŋa náó ‘S/he dammed long ago.’
e. ŋ bʊŋa ráó ‘I washed (something) long ago.’
    à bʊŋa ráó ‘S/he washed (something) long ago.’
f. ŋ bʊŋa sáó ‘I peeled (something) long ago.’
    à bʊŋa sáó ‘S/he peeled (something) long ago.’
g. ŋ bʊŋa ñéú ‘I skimmed long ago.’
    à bʊŋa ñéú ‘S/he skimmed long ago.’
h. ŋ bʊŋa ñéú ‘I surprised (someone) long ago.’
    à bʊŋa ñéú ‘S/he surprised (someone) long ago.’

(40) a. ŋ ñéé 1 dóú ‘I have raised (livestock).’
    ñ ñéé 1 dóú ‘S/he has raised (livestock).’
b. ŋ ñéé 1 kóú ‘I have thrown (it).’
    ñ ñéé 1 kóú ‘S/he has thrown (it)’
c. ŋ ñéé 1 lɛó ‘I have laughed.’
    ñ ñéé 1 lɛó ‘S/he has laughed.’
d. ŋ ñéé 1 náó ‘I have dammed.’
    ñ ñéé 1 náó ‘S/he has dammed.’
e. ŋ ñéé 1 ráó ‘I have washed (something).’
    ñ ñéé 1 ráó ‘S/he has washed (something).’
f. ŋ ñéé 1 sáó ‘I have peeled (something).’
    ñ ñéé 1 sáó ‘S/he has peeled (something).’
g. ŋ ñéé 1 ñéú ‘I have skimmed.’
    ñ ñéé 1 ñéú ‘S/he has skimmed.’
h. ŋ ñéé 1 ñéú ‘I have surprised (someone).’
    ñ ñéé 1 ñéú ‘S/he has surprised (someone).’
With the one H-toned stem with a diphthong in my data, the lexical H must be left floating, as with the H-toned CV forms discussed above. The data is in (41) and (42):

(41) ń bọ̀nà ʧéù  ‘I recited long ago.’
    à bọ̀nà ʧéù  ‘S/he recited long ago.’
(42) ń jëé ʧéù  ‘I have recited.’
    ò jëé ʧéù  ‘S/he has recited.’

The derivation here would be similar to that in (34) above.

The final type of stem to be discussed in this section is the CVC stems. The form of such stems with [bọ̀nà] and [jëé] respectively are given in (43) and (44) for toneless stems:

(43) a. ń bọ̀nà bôr  ‘I fought long ago.’
    à bọ̀nà bôr  ‘S/he fought long ago.’
b. ń bọ̀nà dʒím  ‘I jumped long ago.’
    à bọ̀nà dʒím  ‘S/he jumped long ago.’
c. ń bọ̀nà fár  ‘I styled hair long ago.’
    à bọ̀nà fár  ‘S/he styled hair long ago.’
d. ń bọ̀nà fôl  ‘I slept long ago.’
    à bọ̀nà fôl  ‘S/he slept long ago.’
e. ń bọ̀nà fôm  ‘I farmed long ago.’
    à bọ̀nà fôm  ‘S/he farmed long ago.’
f. ń bọ̀nà fôr  ‘I poured long ago.’
    à bọ̀nà fôr  ‘S/he poured long ago.’
g. ń bọ̀nà nêm  ‘I drank long ago.’
    à bọ̀nà nêm  ‘S/he drank long ago.’
h. ń bọ̀nà jêm  ‘I spit long ago.’
    à bọ̀nà jêm  ‘S/he spit long ago.’
i. ń bọ̀nà jèw  ‘I returned (home) long ago.’
    à bọ̀nà jèw  ‘S/he returned (home) long ago.’

(44) a. ń jëé  bôr  ‘I have fought.’
    ò jëé  bôr  ‘S/he has fought.’
b. ń jëé  dʒím  ‘I have jumped.’
    ò jëé  dʒím  ‘S/he has jumped.’
c. ń jëé  fár  ‘I have styled hair.’
    ò jëé  fár  ‘S/he has styled hair.’
d. ń 'fêè́ ' tốl            ‘I have slept.’
   à ń 'fêè́ ' tốl            ‘S/he has slept.’

e. ń 'fêè́ ' tôm            ‘I have farmed.’
   à ń 'fêè́ ' tôm            ‘S/he has farmed.’

f. ń 'fêè́ ' tôr            ‘I have poured.’
   à ń 'fêè́ ' tôr            ‘S/he has poured.’

g. ń 'fêè́ ' nêm            ‘I have drunk.’
   à ń 'fêè́ ' nêm            ‘S/he has drunk.’

h. ń 'fêè́ ' fêm            ‘I have spit.’
   à ń 'fêè́ ' fêm            ‘S/he has spit.’
i. ń 'fêè́ ' jèw            ‘I have returned (home).’
   à ń 'fêè́ ' jèw            ‘S/he has returned (home).’

As can be seen in (43) and (44), the grammatical H tone docks on the vowel mora of these forms. This is what would be expected given the analysis we have been building, and gives further evidence that the grammatical tone does not spread.

Interestingly, and perhaps unexpectedly in comparison with the longer consonant-final forms presented above, lexically H CVC stems also surface in these types of constructions with a H tone only on the vowel, as illustrated in (45) and (46):

(45) a. ń bôña bôn            ‘I was good long ago.’
    à bôña bôn            ‘S/he is good long ago.’

b. ń bôña kpâr            ‘I grew long ago.’
    à bôña kpâr            ‘S/he grew long ago.’

    c. ń bôña pâm            ‘I got stuck long ago.’
    à bôña pâm            ‘S/he got stuck long ago.’

    d. i bôña sân            ‘It was sweet long ago.’

    e. ń bôña tsâm            ‘I was good/beautiful long ago.’
    à bôña tsâm            ‘S/he was good/beautiful long ago.’

    f. ń bôña fâr            ‘I was not able/was exhausted long ago.’
    à bôña fâr            ‘S/he was not able/was exhausted long ago.’

(46) a. ń 'fêè́ ' bôn            ‘I have been good.’
    à ń 'fêè́ ' bôn            ‘S/he has been good.’

b. ń 'fêè́ ' kpâr            ‘I have grown.’
    à ń 'fêè́ ' kpâr            ‘S/he has grown.’

    c. ń 'fêè́ ' pâm            ‘I have gotten stuck.’
    à ń 'fêè́ ' pâm            ‘S/he have gotten stuck.’

    d. i 'fêè́ ' sân            ‘It has been sweet.’
Unlike with the longer consonant-final forms given in (16) and (18) above, here it seems that H-Spreading (2) does not apply. Tonally, the main difference between the forms in (45) and (46) and those in (16) and (18) is that with the longer forms, both grammatical and lexical tones are associated. This is because those stems have two moras when tone association occurs. In (45) and (46), however, one of the two tones must be left floating, given that there is only one mora present in these forms at the stage of tone attachment. Because there is no spreading in these forms, the tone that attaches here must be the grammatical one.

These H-toned CVC stems thus show a clear contrast between forms to which only a lexical H is linked, and those to which a only a grammatical H is linked. Compare the data in (45) and (46) with the unmarked clauses in (47) (repeated from Chapter 6):

(47) a. ńˈbóŋ ‘I am good.’
b. ńˈkpáŋ ‘I grew.’
c. ńˈpám ‘I got stuck.’
d. i ˈsáŋ ‘It is sweet.’
e. ńˈtsám ‘I am good/beautiful.’
f. ńˈfáŋ ‘I am not able/am exhausted’

In (47), these stems have a level H tone because the associated H tone is the lexical one, which is subject to H Spreading (2). In contrast, the forms in (45) and (46) (and also (43) and (44)) exhibit a falling tone because the associated H tone in this case is the grammatical H, which does not spread.

The data in (45) and (46) thus provide evidence that the First Mora H Docking rule must apply from left to right. Since the grammatical tone is ordered to the left of the lexical H, as was demonstrated above, the grammatical tone is the one that is associated by the left-to-right First Mora H Docking rule. If the rule were right-to-left, then the
associated tone would be the lexical H, and there would be no explanation as to why the H does not spread onto the final consonant after the application of Mora Insertion.

A sample derivation for a H-toned CVC stem with both lexical and grammatical tone is given in (48). H Spreading does not apply here because the lexical tone remains floating, so the rule’s structural description is not met:

(48) a. \[ n \] \[ b \ ʊ \ ŋ \ a \] \[ b \ o \ n \]  
Output of Syllabification

\[ H \quad \mu \quad \mu \quad \mu \]

\[ H \quad H \]

b. \[ n \] \[ b \ ʊ \ ŋ \ a \] \[ b \ o \ n \]  
First Mora H Docking

\[ H \quad \mu \quad \mu \quad \mu \]

\[ H \quad H \]

c. \[ n \] \[ b \ ʊ \ ŋ \ a \] \[ b \ o \ n \]  
Mora Insertion

\[ H \quad \mu \quad \mu \quad \mu \]

\[ H \quad H \]

d. \[ n \] \[ b \ ʊ \ ŋ \ a \] \[ b \ o \ n \]  
Surface Form

\[ H \quad \mu \quad \mu \quad \mu \]

\[ H \quad H \]

The consonant mora here remains toneless, since it is inserted after the tone association rules have already applied, and is therefore pronounced with a low pitch on the surface.

Toneless and H-toned CVC stems are thus pronounced the same way on the surface, but have different underlying structures, since the H-toned stems are followed by a floating lexical tone, and the toneless stems are not. There is no evidence in my data as to whether the floating tone in these cases has any effect on surrounding tones, but it is possible that further research could reveal such effects.
Glide-final CVC stems containing H tones have the same tone pattern as other CVC stems when marked with non-cliticizing TAM markers, as was mentioned in Chapter 6. The full set of data regarding these forms is repeated below, where toneless stems are in (49) and (50), and H-toned stems in (51) and (52):

(49) a. ń bọṅà ŋuw  
    ò bọṅà ŋuw  
    b. ń bọṅà ñuw  
    ò bọṅà ñuw  
    ‘I ran long ago.’  
    ‘S/he ran long ago.’  
    ‘I inflated long ago.’  
    ‘S/he inflated long ago.’

(50) a. ŋ jëé ŋuw  
    ŋ jëé ŋuw  
    b. ń jëé ŋuw  
    ò jëé ŋuw  
    ‘I have run.’  
    ‘S/he has run.’  
    ‘I have inflated.’  
    ‘S/he has inflated.’

(51) a. i bọṅà būw  
    b. ń bọṅà lìi  
    ò bọṅà lìi  
    c. i bọṅà mów  
    d. ń bọṅà lìi  
    ò bọṅà lìi  
    ‘It was rotten long ago.’  
    ‘I got lost long ago.’  
    ‘S/he got lost long ago.’  
    ‘It was dented long ago.’  
    ‘I died long ago.’  
    ‘S/he died long ago.’

(52) a. i jëé ŋuw  
    b. ń jëé lìi  
    ò jëé lìi  
    c. i jëé mów  
    d. ń jëé lìi  
    ò jëé lìi  
    ‘It has been rotten.’  
    ‘I have gotten lost.’  
    ‘S/he has gotten lost.’  
    ‘It has been dented.’  
    ‘I have died.’  
    ‘S/he has died.’

There is one more non-lexically-reduplicated stem form which should be briefly mentioned here, and which appears to be a special case of the CVC pattern. This type of stem was not mentioned in Chapter 6 because its uniqueness only becomes apparent in paradigms with grammatical tone. In unmarked clauses, this stem appears to be a CVV form, as shown in (53):

(53) ń jëé  
    ò jëé  
    ‘I searched.’  
    ‘S/he searched.’
Recall that with non-cliticizing TAM markers like [bɔŋà], toneless monophthongal CVV stems exhibit a rising tone. [jɛɛ], however, has a falling tone instead, meaning that this form actually behaves tonally like a CVC stem, as shown in (54):

(54) a. ń bɔŋà jɛɛe ‘I searched long ago.’
    à bɔŋà jɛɛe ‘S/he searched long ago.’
b. ń jɛɛe t jɛɛe ‘I have searched’
    à jɛɛe t jɛɛe ‘S/he has searched.’

The most obvious explanation for the behavior of this stem is that it contains a consonant that is unspecified for segmental features (it is underlying /jeC/). The stem therefore undergoes prosodification like a CVC form. At some point, the segmental features of the vowel then spread to the unspecified consonant so it can be pronounced. Since there is only one such example in Anii, and the major difference between this and other stems involves segmental features, I will leave further investigation of this stem to future research.

7.1.3 Grammatical Tone from TAM Markers with Lexically Reduplicated Stems

The behavior of lexically-reduplicated stems with regard to grammatical tone is interesting for several reasons. First, these forms provide further examples to show that the grammatical tone does not spread, as illustrated with the toneless stems in (55) and (56) The only forms for which I have appropriate data are those containing long vowels:

(55) a. i bɔŋà pépéé ‘It spoiled long ago.’
    b. ń bɔŋà tô tô tô ‘I stirred long ago.’
    à bɔŋà tô tô tô ‘S/he stirred long ago.’
    c. ń bɔŋà jéjéjé ‘I strolled long ago.’
    à bɔŋà jéjéjé ‘S/he strolled long ago.’
    d. ń bɔŋà fɔfɔfɔ ‘I made a tincture long ago.’
    à bɔŋà fɔfɔfɔ ‘S/he made a tincture long ago.’

(56) a. i jɛɛe pépéé ‘It has spoiled.’
    b. ń jɛɛe tô tô tô ‘I have stirred.’
    à jɛɛe tô tô tô ‘S/he has stirred.’
‘I have strolled.’
‘S/he has strolled.’
‘I have made a tincture.’
‘S/he has made a tincture.’

H-toned examples are given in (57) and (58). The fact of interest here is that there
is a downstep in the middle of the stem these cases, indicating that the base and the
reduplicant remain separate morphemes:

(57) a. ɩ bʊŋà ɗɗ ‘It (inanimate) is cold.’
     b. ɲ bʊŋà ɗɗ ‘I tricked/joked.’
     à bʊŋà ɗɗ ‘S/he tricked/joked.’
     c. ɲ bʊŋà jèé jèè ‘I hurried.’
     à bʊŋà jèé jèè ‘S/he hurried.’

(58) a. ì jèé jèè ‘It (inanimate) is cold.’
     b. ɲ jèé jèè ‘I tricked/joked.’
     à jèé jèè ‘S/he tricked/joked.’
     c. ɲ jèé jèè ‘I hurried.’
     à jèé jèè ‘S/he hurried.’

Recall from Chapter 6 that the lexical tone associates to a H-toned lexically-
reduplicated stem after reduplication has occurred, and then spreads rightward. In forms
with no grammatical tone, there is also no downstep, as shown in (59), repeated from
Chapter 6:

(59) a. i dòodòó ‘It (inanimate) is cold.’
     b. ɲ pàá ‘I tricked/joked.’
     à pàá ‘S/he tricked/joked.’
     c. ɲ jèé jèè ‘I hurried.’
     à jèé jèè ‘S/he hurried.’

The fact that there is a downstep between the base and the reduplicant in (57) and (58),
then, is due to the fact that both lexical and grammatical tone are associated in these
forms. The particular location of the downstep indicates that H Fusion must stop at the
boundary between the stem and the reduplicant. Since reduplicant moras are not stem moras, this structure is exactly what is expected given the assumptions made above. A sample derivation is given in (60). The symbols {} represent stem boundaries:

(60) a. [ n ] [ b v ŋ a ] [{ y e } y e ]
    μ μ μ μ μ μ μ μ
    H H H
    Output of Syllabification

b. [ n ] [ b v ŋ a ] [{ y e } y e ]
    μ μ μ μ μ μ μ μ
    H H H
    Second Mora H Docking

c. [ n ] [ b v ŋ a ] [{ y e } y e ]
    μ μ μ μ μ μ μ μ
    H H H
    First Mora H Docking

d. [ n ] [ b v ŋ a ] [{ y e } y e ]
    μ μ μ μ μ μ μ μ
    H H H
    H Spreading (2)

e. [ n ] [ b v ŋ a ] [{ y e } y e ]
    μ μ μ μ μ μ μ μ
    H L L H H
    H Fusion (2) (applies only once)

f. [ n ] [ b v ŋ a ] [{ y e } y e ]
    μ μ μ μ μ μ μ μ
    H H H
    Surface Form

As this derivation demonstrates, the only difference between these forms and the quadrimoraic non-reduplicated form [ʧáárɩ], ‘bother’, analyzed in (28) above, is that the reduplicated form contains a morpheme boundary, and therefore a downstep, whereas the
The grammatical tone that accompanies non-cliticizing TAM markers has now been illustrated on all types of Anii verb stems. This grammatical tone pattern behaves similarly in clauses containing more than one TAM marker, as shown in the next section.

7.1.4 Grammatical Tone with Multiple TAM Markers

Since Anii allows for multiple TAM markers within a single clause, the tone pattern on such forms must be addressed. Recall from the previous chapter (and the beginning of this chapter) that certain TAM markers always co-occur with a grammatical H tone (non-cliticizing markers), while others generally do not (cliticizing markers). This section briefly discusses how these different types of markers interact with each other tonally in clauses marked with both types.

The first fact of interest to be discussed is that the expected grammatical tone does not occur in sentences marked with non-cliticizing TAM markers if a cliticizing marker is also present (recall that the cliticizing marker will always occur between the non-cliticizing marker and the stem). This fact is most easily illustrated with the far-past marker [bʊŋà] and the imperfective marker [tɪ]. Such examples (with all possible types of stems) are given in (61):

(61) a. ń bʊŋà tì bidà  ‘I was threw (it) away often long ago.’
    à bʊŋà tì bidà  ‘S/he threw (it) away often long ago.’
   b. ń bʊŋà tì bilá  ‘I refused often long ago.’
    à bʊŋà tì bilá  ‘S/he refused often long ago.’
   c. ń bʊŋà tì kâŋkî  ‘I was often strong long ago.’
    à bʊŋà tì kâŋkî  ‘S/he was often strong long ago.’
  d. ń bʊŋà tì ḋɔ̀mpɔ̀l  ‘I licked often long ago.’
   à bʊŋà tì ḋɔ̀mpɔ̀l  ‘S/he licked often long ago.’
  e. ń bʊŋà tì tɔ̀pɪrā  ‘I turned around often long ago.’
   à bʊŋà tì tɔ̀pɪrā  ‘S/he turned around often long ago.’

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In this data, there is no sign of the grammatical tone that usually accompanies [bôn à], on either the verb stem or the preceding TAM marker. The only tone in any of the examples in (61) is the lexical tone found on H-toned stems. There is no clear phonological reason why this should be so, but recall that cliticizing markers are not accompanied by grammatical tone. One hypothesis that could account for these data would be the assumption that the grammatical tone only surfaces on words that directly follow the relevant TAM marker.

If this were the case, however, the question remains as to why the grammatical tone does not surface on the cliticizing TAM markers themselves in (61). In fact, it appears that this type of grammatical tone never surfaces on TAM markers, only on verb

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stems. For example, when there are two non-cliticizing markers in a sentence, only one grammatical tone is present—the verb stems have the same form that they would have if only one marker were present, and the tone of both TAM markers is unchanged. This is illustrated in (62):

(62) a. ńʧèé bʊŋa bɪdá ‘I had thrown (it) away long ago.’
    ò ʧèé bʊŋa bɪdá ‘S/he had thrown (it) away long ago.’
 b. ńʧèé bʊŋa bɪlá ‘I had refused long ago.’
    ò ʧèé bʊŋa bɪlá ‘S/he had refused long ago.’
 c. ńʧèé bʊŋa kǎŋkɪ ‘I had been strong long ago.’
    ò ʧèé bʊŋa kǎŋkɪ ‘S/he had been strong long ago.’
 d. ńʧèé bʊŋa dʒámpɔl ‘I had licked long ago.’
    ò ʧèé bʊŋa dʒámpɔl ‘S/he had licked long ago.’
 e. ńʧèé bʊŋa tɔpira ‘I had turned around long ago.’
    ò ʧèé bʊŋa tɔpira ‘S/he had turned around long ago.’
 f. ńʧèé bʊŋa ʧãárii ‘I had bothered (someone) long ago.’
    ò ʧèé bʊŋa ʧãárii ‘S/he had bothered (someone) long ago.’
 g. ńʧèé bʊŋa dá ‘I had been there long ago.’
    ò ʧèé bʊŋa dá ‘S/he had been there long ago.’
 h. ńʧèé bʊŋa kpá ‘I had arrived long ago.’
    ò ʧèé bʊŋa kpá ‘S/he had arrived long ago.’
 i. ńʧèé bʊŋa bɔʃ ‘I had prepared food long ago.’
    ò ʧèé bʊŋa bɔʃ ‘S/he had prepared food long ago.’
 j. ńʧèé bʊŋa dɔò ‘I had gone out long ago.’
    ò ʧèé bʊŋa dɔò ‘S/he had gone out long ago.’
 k. ńʧèé bʊŋa ëɛ ‘I had laughed long ago.’
    ò ʧèé bʊŋa ëɛ ‘S/he had laughed long ago.’
 l. ńʧèé bʊŋa ñɛ ‘I had recited long ago.’
    ò ʧèé bʊŋa ñɛ ‘S/he had recited long ago.’
 m. ńʧèé bʊŋa bɔr ‘I had fought long ago.’
    ò ʧèé bʊŋa bɔr ‘S/he had fought long ago.’
 n. ńʧèé bʊŋa bɔŋ ‘I had been good long ago.’
    ò ʧèé bʊŋa bɔŋ ‘S/he had been good long ago.’
 o. ńʧèé bʊŋa ñu ‘I had run long ago.’
    ò ʧèé bʊŋa ñu ‘S/he had run long ago.’
 p. ńʧèé bʊŋa طبع ‘I had gotten lost long ago.’
    ò ʧèé bʊŋa طبع ‘S/he had gotten lost long ago.’
 q. ńʧèé bʊŋa ðɛmpenɛ ‘I had cleaned long ago.’
    ò ʧèé bʊŋa ðɛmpenɛ ‘S/he had cleaned long ago.’
 r. ńʧèé bʊŋa tɔtɔdɔ ‘I had stirred long ago.’
    ò ʧèé bʊŋa tɔtɔdɔ ‘S/he had stirred long ago.’
A possible explanation for these facts lies in the hypothesis that this type of grammatical tone historically marked verb phrase concatenation or subordination. As was briefly mentioned in the first paragraph of this chapter, there is a striking similarity between the grammatical H tone found in constructions containing non-cliticizing TAM markers and the grammatical H tone that is found in a common type of verb phrase concatenation. This concatenation construction, involving the marker [à], which I have glossed in this work as \textsc{inord}, is exemplified in the sentence in (63). Note that both [ʃi], ‘buy’ and [tò], ‘give’, are toneless stems:

(63) Situation: Excerpt from a story about becoming a moto-taxi driver. One step is to pay dues to the moto-taxi organization. Then:

\begin{verbatim}
  bà làá gi-tání gi-dé \textsc{inord} à jì \textsc{inord} tokò
\end{verbatim} 

\textsc{inord} give 2.sg.obj

‘They will take from that money to buy a shirt and give it to you.’

The relevant fact here is the use of the \textsc{inord} marker [à] (bolded, and subject to vowel harmony), which has a meaning similar to the English phrase ‘in order to’, and is used to join two verb phrases together.

Another example, which may make the tone pattern clearer, is in (64). The stem [dredé] is H-toned, and [fàn] is toneless:

(64) Situation: The last sentence of a story about Hakimou’s friend from school. The immediately preceding sentences are: “He does not go to school anymore, and me, too, I do not go to school anymore. But he is there farming; me, too, I am there doing my job.”:

\begin{verbatim}
  ñ ti sirá à dredé \textsc{inord} à fàn à-jòkò
\end{verbatim} 

1.sg.subj.grp1 impf be.able \textsc{inord} visit 3.sg.obj \textsc{inord} hold cl.t-things

\begin{verbatim}
  tùùtùumà ñsùl.
\end{verbatim} 

\begin{verbatim}
  many \textsc{at.house}
\end{verbatim} 

‘So, I am able to visit him to get many things at his house.’
This type of construction can also be used between two verb stems without objects, as shown in (65):

(65) Situation: Excerpt from a story describing the market. The first sentence says: “Today, Bassila market day, everyone is preparing him/herself before going to market. The next sentence is:

\[
\begin{array}{llllllllllllll}
& \text{bàʃɩ} & \text{ɩ} & \text{ká} &  \text{ǝ} & \text{m} & \text{ʃéé} & \text{b} & \text{ɩ} & \text{ʧèé} & \text{doó} & \text{ná} & \text{ŋ} & \text{a} & \text{ʃɩ} & \text{bì} & \text{fì}
\end{array}
\]

CL.W-buyers INORD TAM AGR.CL.W PERF go.out and INORD see INORD buy

‘Buyers need to go out early to find [stuff] to buy.’

While the tone pattern on this type of construction has not been systematically elicited, the construction is so common in Anii that simply from looking through texts it has become clear that the tone pattern on verb stems following the INORD marker is the same tone pattern as that found on stems following non-cliticizing TAM markers. The examples given above illustrate that with several different types of stems.

Recall from Chapters 1 and 6 that in some ways, the non-cliticizing TAM markers that trigger the grammatical H tone being analyzed in this section behave like verb stems. For example, unlike other TAM markers, these non-cliticizing markers do not undergo [ATR] harmony, and they also act as their own word (with reference to tone assignment) rather than cliticizing to a preceding subject marker. Historically-speaking, it is possible that such TAM constructions arose from grammaticalization of INORD constructions with specific verb stems. It is also possible that the meaning of this type of grammatical tone is the same in both types of constructions. In that case, the meaning is likely related to verb phrase concatenation (or perhaps even subordination). While it is not yet clear (pending further investigation of Anii morphology and syntax) what morphological or syntactic feature is shared by these two types of constructions in the modern language, there is likely at least a diachronic connection there.

This type of H tone may also be the same type found on clauses marked with the TAM [tà], which I am currently translating as ‘if’, pending further semantic investigation.\textsuperscript{183} [tà] generally appears to be a cliticizing TAM marker, given that it bears

\textsuperscript{183} This TAM is definitely not used in counterfactual situations, and is sometimes translated as ‘when’, as well, so the translation ‘if’ clearly does not adequately account for the full meaning of [tà], but for the
subject marker tone, and undergoes vowel harmony from a following verb stem. This
marker would thus not be expected to trigger a H tone on a following verb stem since it
does not appear to have historically been a verb stem itself—but there is a grammatical H
tone found on verb stems following [tà], as shown in (66) (and with a different verb stem
in Appendix A). [bòr], ‘fight’, is a toneless stem, and the second clause in each sentence
is a future construction (discussed further in the following section):[^184]

(66)  ŋ tò ʃ bó ř, ŋ tí ʃ má wòdá gitání ‘If I fight, I will have money.’
û tò ʃ bó ř, ô tá ʃ á wòdá gitání ‘If you (sg) fight, you (sg) will have money.’
å tò bó ř, a tà à wòdá gitání ‘If s/he fights, s/he will have money.’
gi tò ʃ bó ř, gi tí gi wòdá gitání ‘If we fight, we will have money.’
i tò ʃ bó ř, i tí i wòdá gitání ‘If you (pl) fight, you (pl) will have money.’
bò tò bó ř, bà tí bà wòdá gitání ‘If they fight, they will have money.’

The question raised by this data is that of why this grammatical H tone is present on a
verb stem following a cliticizing TAM marker. The main difference between [tà]-marked
clauses and those marked with other cliticizing TAM markers is that the [tà]-marked
clauses are always subordinate clauses—they cannot be sentences on their own, but must
always be followed by another clause. It seems likely, then, that the grammatical H
found on the verb stems in these clauses is a marker of clause subordination, and is the
same type of tone as in the other examples in this section.

Not every subordinate clause is marked in this way, however. For example, verb
stems in relative clauses do not bear this type of grammatical tone, as shown in (67),
where the relevant (toneless) verb stems are bolded. These examples are repeated from
Chapter 4:

(67)  Situation: Answering the question ‘which child is good?’
û-pì n-dé  á ná sàrâ mà à tsim CL.A-child AGR.CL.A-REL AGR.CL.A IMPF walk SUB AGR.CL.A be.good
‘The child who is walking is good.’

[^184]: These are the only examples I have of clauses that are acceptable after [tà] clauses, so it is unclear
whether or not future clauses are the only option in this case.
Note the presence of the clause subordination marker [mà] in these clauses. The use of [mà] is the most common method of clause subordination in Anii (or at least in my text corpus), and clauses marked with this marker never exhibit a grammatical H tone on the verb stem. There is, however, what appears to be a grammatical tone marking clause subordination that occurs in these clauses, at least on toneless subject markers. This tone is exemplified in (67), where the Class A agreement marker [à], which is normally toneless, surfaces with a H tone. Note that this tone is clearly not a normal subject marker tone (if it were, it would be expected to surface on the imperfective marker [nà], which is a cliticizing marker). The presence of this tone seems to be related to the fact that the relevant clause here is subordinate, and to be subject to different association rules than the subject marker tones. Another example of this clause subordination tone is given in (68), taken from a story written by ISSIFOU Rahinatou. The stem [sàlá], ‘greet’, is lexically H-toned, and the third-person plural subject marker (bolded) is normally toneless:

(68) Situation: The author is describing a morning at her house. She describes how she brings the younger children to the courtyard to greet the elders who are sitting there. The following sentence is:

\[
\begin{align*}
\text{bá} & \quad \text{sàlá} \quad \text{pí} \quad \text{bójó \ mà, ñ} \quad \text{lèè} \\
\text{3.PL.SUBJ.GRP1} & \quad \text{greet} \quad \text{3.PL.OBJ} \quad \text{finish \ SUB} \quad \text{1.SG.SUBJ.GRP1} \quad \text{make} \\
\text{bù-tùsùdáká} & \quad \text{tá} \quad \text{kòfè} \\
\text{CL.G-hot.water \ and} & \quad \text{CL.B.coffee} \\
\text{‘When they finished greeting them, I made hot water and coffee.’}
\end{align*}
\]

It is not yet fully clear whether the subordinate clause H tone that appears on subject markers in [mà] clauses is related to the grammatical H tone that surfaces on verb stems and marks concatenation or subordination, but what is clear is that Anii uses H tones to mark certain syntactic structures related to subordination. Future research into clause structure is needed before the meaning of all of these H tones is fully understood.

Coming back, then, to the issue of grammatical tone on verb stems, perhaps the type of grammatical tone being described in this section can only be linked to verb stems, not to other types of words. This would explain why it never surfaces on any kind of
TAM marker. Additionally, it seems clear that this tone is only present when the triggering marker (either a TAM marker or the ‘in order to’ marker) immediately precedes the verb stem in question. This type of construction is a fruitful area for further research, but further discussion of the syntax and semantics here is beyond the scope of this dissertation, so I will return now to phonological data.

7.1.5 Conclusions Regarding Grammatical Tone from TAM Markers

This section has presented the most common grammatical tone pattern in Anii, consisting of a H tone realized on the verb stem in what has been hypothesized were historically verb phrase (or clause) concatenation or subordination constructions. With only minor adjustments and one addition, the set of ordered rules proposed in Chapter 6 to account for lexical tone can also account for the phonology of this grammatical tone pattern. Interestingly, the same tone pattern is also found in irrealis clauses, where the grammatical tone interacts with the tone of the irrealis pronouns, as will be discussed in Section 7.2.

7.2 Grammatical Tone in Irrealis Clauses

As stated above, verb stems in irrealis clauses exhibit the same (at least from a phonological standpoint) grammatical tone as the forms discussed in Section 7.1 above. There are differences in the tonal patterns for irrealis clauses, however, because the irrealis subject markers have different tonal behavior from their realis counterparts. Section 7.2.1 presents the basics of this pattern, Section 7.2.2 introduces and analyzes the complications that occur with the addition of negation markers, and Section 7.2.3 concludes with a discussion of whether the grammatical tone discussed in this section is in fact the same as that described in Section 7.1.
7.2.1 Grammatical Tone in the Irrealis Form

The general tone pattern found in irrealis forms is illustrated by the forms in (69), which contain toneless stems. Note that there is a grammatical H tone on these stems, although they are not preceded by a TAM marker:

(69) a. má bìdá ‘May I throw (it) away.’
    á bìdá ‘May you (sg) throw (it) away.’
    à bìdá ‘May s/he threw (it) away.’
    gi bìdá ‘May we threw (it) away.’
    i bìdá ‘May you (pl) throw (it) away.’
    bà bìdá ‘May they throw (it) away.’

b. má bʊŋá ‘May I turn my head.’
    á bʊŋá ‘May you (sg) turn your head.’
    à bʊŋá ‘May s/he turn her/his head.’
    gi bʊŋá ‘May we turn our heads.’
    i bʊŋá ‘May you (pl) turn your heads.’
    bà bʊŋá ‘May they turn their heads.’

c. mó dɔŋo ‘May I make a field by burning.’
    ó dɔŋo ‘May you (sg) make a field by burning.’
    ò dɔŋo ‘May s/he make a field by burning.’
    gi dɔŋo ‘May we make a field by burning.’
    i dɔŋo ‘May you (pl) make a field by burning.’
    bà dɔŋo ‘May they make a field by burning.’

d. mó j overd ‘May I stop.’
    ó j overd ‘May you (sg) stop.’
    ò j overd ‘May s/he stop.’
    gi j overd ‘May we stop.’
    i j overd ‘May you (pl) stop.’
    bà j overd ‘May they stop.’

e. má kárá ‘May I get dressed.’
    á kárá ‘May you (sg) get dressed.’
    à kárá ‘May s/he get dressed.’
    gi kárá ‘May we get dressed.’
    i kárá ‘May you (pl) get dressed.’
    bà kárá ‘May they got dressed.’

f. má kɔlɔ ‘May I cough.’
    á kɔlɔ ‘You (sg) coughed.’
    à kɔlɔ ‘S/he coughed.’
    gi kɔlɔ ‘We coughed.’
    i kɔlɔ ‘You (pl) coughed.’
    bà kɔlɔ ‘They coughed.’
The data in (69) shows that the grammatical tone links to the second mora of the verb stem as expected.

As (69) also shows, however, the irrealis subject markers behave differently from their realis counterparts. Note that in the examples in (69), the first- and second-person singular subject markers are H-toned, but the remaining markers are toneless. Additionally, it appears that the H tone of the two H-toned subject markers spreads at least one mora to the right, since the verb stems following those markers have a different tone pattern from those following toneless subject markers. Since the spreading in this case applies across word boundaries, it is presumably the result of a different rule from the H Spreading rule proposed above, which only applies within the word. Since the type of spreading exhibited in (69) applies only when H-toned irrealis subject markers are present, I propose the Irrealis H Spreading rule given in (70) to account for the type of spreading illustrated in (69):

(70) **Irrealis H Spreading**

This rule says that the H tone of an irrealis subject marker spreads rightward to any following mora.
An important fact about the forms in (69) is that there is no downstep between H-toned irrealis subject markers and verb stems that follow those markers and begin with a H-toned mora. This is likely because in these cases, the initial H tone of the verb stem was spread onto the verb stem mora by the subject marker (note that the verb stems following non-H subject markers are not H initial in (69)). The derivation of irrealis forms with toneless subject markers would be essentially identical to the derivations given in Section 7.1. With H-toned subject markers, though, the situation is more complicated. (71) illustrates how Irrealis H Spreading integrates with the set of rules already proposed, with a lexically toneless stem. The derivation is for the sentence [má bídá], ‘May I throw (it) away.’ Note that, as was discussed for the realis subject marker tones in Chapter 6, it is not clear whether the irrealis subject marker tones here are lexical or grammatical, so they are italicized:

(71) a. [ m a ] [ b i d a ]
    | | |
    μ μ μ
    H H
   
   Output of Syllabification

b. [ m a ] [ b i d a ]
    | | |
    μ μ μ
    H H
   
   Second Mora H Docking

c. [ m a ] [ b i d a ]
    | | |
    μ μ μ
    H H
   
   First Mora H Docking

d. [ m a ] [ b i d a ]
    | | |
    μ μ μ
    H H
   
   Irrealis H Spreading

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The H Fusion (2) rule applies here because the subject H tone is linked to a stem mora when fusion applies, and the grammatical tone on the verb stem is linked to an adjacent stem mora. Thus, the structural description of the fusion rule is met, even though the first H tone is also linked to the subject marker. This is the desired result, because the fact that the H tone is also linked to the subject marker prevents downstep from occurring, since there is ultimately only one linked H tone here, associated with all three moras.

Downstep also does not occur between H-toned irrealis subject markers and H-initial stems when the stems have both a lexical and a grammatical H. This fact indicates that Irrealis H Spreading occurs even when the mora the tone is spreading to is already linked to a H tone:

(72) a. má bilá     ‘May I refuse.’
    á bilá       ‘May you (sg) refuse.’
    à bilá       ‘May s/he refuse.’
    gi bilá      ‘May we refuse.’
    i bilá       ‘May you (pl) refuse.’
    bà bilá      ‘May they refuse.’

   b. mó bódó     ‘May I climb.’
    ó bódó       ‘May you (sg) climb.’
    ò bódó       ‘May s/he climb.’
    gi bódó      ‘May we climb.’
    i bódó       ‘You (pl) climb.’
    bà bódó      ‘They climb.’

   c. mó bónó     ‘May I finish.’
    ó bónó       ‘May you (sg) finish.’
    ò bónó       ‘May s/he finish.’
    gi bónó      ‘May we finish.’
i bọnọ ‘May you (pl) finish.’
bà bọnọ ‘May they finish.’
d. mọ dędé ‘May I visit (it).’
ő dędé ‘May you (sg) visit (it).’
ǎ dędé ‘May s/he visit (it).’
gi dędé ‘May we visit (it).’
i dędé ‘May you (pl) visit (it).’
bà dędé ‘May they visit (it).’
e. má fǎnà ‘May I teach (it).’
á fǎnà ‘May you (sg) teach (it).’
ǎ fǎnà ‘May s/he teach (it).’
gi fǎnà ‘May we teach (it).’
i fǎnà ‘May you (pl) teach.’
bà fǎnà ‘May they teach.’
f. mọ fọdó ‘May I undress.’
ő fọdó ‘May you (sg) undress.’
ś fọdó ‘May s/he undress.’
gi fọdó ‘May we undress.’
i fọdó ‘May you (pl) undress.’
bà fọdó ‘May they undress.’
g. mọ kídé ‘May I watch.’
ő kídé ‘May you (sg) watch.’
ś kídé ‘May s/he watch.’
gi kídé ‘May we watch.’
i kídé ‘May you (pl) watch.’
bà kídé ‘May they watch.’
h. má sálá ‘May I greet (them).’
á sálá ‘May you (sg) greet (them).’
ǎ sálá ‘May s/he greet (them).’
gi sálá ‘May we greet (them).’
i sálá ‘May you (pl) greet (them).’
bà sálá ‘May they greet (them).’

A derivation for forms such as those in (72), i.e. irrealis forms with lexically H-toned stems, is given in (73):

(73) a. [ m  a ] [ b  i  d  a ]

Output of Syllabification

| | |
|---|---|---|
| μ | μ | μ |

H H H

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b. [m a] [b i d a]  
|   |   |
\mu  \mu  \mu

\text{Second Mora H Docking}

\hline

c. [m a] [b i d a]  
|   |   |
\mu  \mu  \mu

\text{First Mora H Docking}

\hline
d. [m a] [b i d a]  
|   |   |
\mu  \mu  \mu

\text{Irrealis H Spreading}

\hline
e. [m a] [b i d a]  
|   |   |
\mu  \mu  \mu

\text{H Fusion}

\hline
f. [m a] [b i d a]  
|   |   |
\mu  \mu  \mu

\text{Surface Form}

\hline

Downstep does not occur here because there are no H tones on adjacent moras that are not doubly-linked.

A representative sample of each of the other types of stems in the irrealis form is given in the following examples, where it will be seen that the stem tone patterns are the same as those discussed in section 7.1, with the additional complication that the first- and second-person singular subject pronouns spread their H tone if they have one. As I have done above, I give only first- and third-person singular forms as representative of the two types of subject markers (H-toned and toneless):
(74) Bisyllabic, Consonant Final, Toneless:
a. má káŋkíř  ‘May I be strong.’
   à káŋkíř  ‘May s/he be strong.’
b. mó sàŋkóř  ‘May I separate.’
   à sàŋkóř  ‘May s/he separate.’

(75) Bisyllabic, Consonant Final, H-Toned
a. mó d̄́mp̄ř  ‘May I lick.’
   à d̄́mp̄ř  ‘May s/he lick.’
b. mó t̄́túř  ‘May I push.’
   à t̄́túř  ‘May s/he push.’

(76) Trisyllabic Toneless
a. má tsípíra  ‘May I turn.’
   à tsípíra  ‘May s/he turn.’
b. mó tsàŋkárø  ‘I leaned.’
   à tsàŋkárø  ‘May s/he lean.’

(77) Bisyllabic, Quadrimoraic, H-Toned
má t̄́fááří  ‘I bothered (someone).’
   à t̄́fááří  ‘S/he bothered (someone).’

(78) Monomoraic, CV Structure, Toneless
a. má đí  ‘May I eat.’
   à đí  ‘May s/he eat.’
b. má jɔ  ‘May I know.’
   à jɔ  ‘May s/he know.’

(79) Monomoraic, CV Structure, H-Toned
a. má kpå  ‘May I arrive.’
   à kpå  ‘May s/he arrive.’
b. má tɔ  ‘May I last/endure.’
   à tɔ  ‘May s/he lasted/endure.’

(80) Bimoraic, CVV Structure, Toneless
a. má bɔ̀  ‘May I prepare food.’
   à bɔ̀  ‘May s/he prepare food.’
b. má fàá  ‘May I diminish.’
   à fàá  ‘May s/he diminish.’

(81) Bimoraic, CVV Structure, H-Toned
a. mó dóó  ‘May I go out.’
   à dóó  ‘May s/he go out.’
b. má sáá  ‘May I wait.’
à sáá  ‘May s/he wait.’

(82)  *Monomoraic Diphthongs, Toneless*
  a. mó kóu  ‘May I throw (it).’
à kóu  ‘May s/he throw (it).’
  b. má léò  ‘May I laugh.’
à léò  ‘May s/he laugh.’

(83)  *Monomoraic Diphthongs, H-Toned*
  mó fëú  ‘May I recite.’
à fëú  ‘May s/he recite.’

(84)  *CVC Stems, Toneless*
  a. má fár  ‘May I style hair.’
à fár  ‘May s/he style hair.’
  b. mó fól  ‘May I sleep.’
à fól  ‘May s/he sleep.’

(85)  *CVC Stems, H-Toned*
  b. mó kpër  ‘May I grow.’
à kpër  ‘May s/he grow.’
  c. má pám  ‘May I get stuck.’
à pám  ‘May s/he get stuck.’

(86)  *Other Variably Moraic Stems, Toneless*
  a. mó fúw  ‘May I run.’
à fúw  ‘May s/he run.’
  b. mó fúw  ‘May I inflate.’
à fúw  ‘May s/he inflate.’

(87)  *Other Variably Moraic Stems, H-Toned*
  a. mó líj  ‘May I get lost.’
à líj  ‘May s/he get lost.’
  b. mó líj  ‘May I die.’
à líj  ‘May s/he die.’

(88)  *Reduplicated Forms (Toneless)*
  a. mó tôó tôô  ‘May I stir.’
à tôó tôô  ‘May s/he stir.’
  b. mó jéjéjé  ‘May I stroll.’
à jéjéjé  ‘May s/he stroll.’
c. má pémpéñè  ‘May I clean’
    à pémpéñè  ‘May s/he clean’

(89) *Reduplicated Forms (H-Toned)*

a. má pàá’páá  ‘May I trick/joke.’
    à pàá’páá  ‘May s/he trick/joke.’

b. mó fèé’fèé  ‘May I hurry.’
    à fèé’fèé  ‘May s/he hurry.’

Since there is always a grammatical H tone on the first or second mora of the stem in these cases, it is not possible to know whether the subject marker tone would spread farther if there were more toneless moras following. What is clear is that the subject marker tone does not spread through an already-linked H tone, as illustrated particularly clearly in (76) and (88) above. The data from negative clauses that will be presented in the following section will shed more light on the question of how far the irrealis subject marker H tone spreads.

Before turning to negative clauses, however, I will briefly discuss tone in future clauses marked with [tɨ].

Recall from Chapter 3 that such future clauses consist of a realis subject marker, the marker [tɨ], and then an irrealis construction (subject marker and verb stem with a grammatical H tone). Examples of this future construction are given in (90):

(90) a. ǹ tɨ Ɂ má bidá  ‘I will throw (it) away.’
    ò tá Ɂ á bidá  ‘You (sg) will throw (it) away.’
    à tã à bidá  ‘S/he will throw (it) away.’
    ɗ tã gi bidá  ‘We will throw (it) away.’
    i ti i bidá  ‘You (pl) will throw (it) away.’
    bà ti bà bidá  ‘They will throw (it) away.’

b. ǹ ti Ɂ má bìlá  ‘I will refuse.’
    ò tá Ɂ á bìlá  ‘You (sg) will refuse.’
    à tã à bìlá  ‘S/he will refuse.’

185 The vowel in this marker may actually be unspecified, similar to the vowel in the first negation marker that is discussed in the following section. A detailed discussion of the vowel quality of this marker is beyond the scope of this dissertation, but it seems to be affected by a following vowel, and perhaps also by a following consonant.

186 An alternative to this form where [g]-deletion applies (e.g. [gi ti i bidá], ‘we will throw (it) away’) is always possible, and especially common in fast speech (see Chapter 1 for more discussion).
gi tí gi bilá ‘We will refuse.’
i tí i bilá ‘You (pl) will refuse.’
bà ti bà bilá ‘They will refuse.’
c. n tí ’ má kàŋkí ‘I will be strong.’
ò tá ’ á kàŋkí ‘You (sg) will be strong.’
à tà à kàŋkí ‘S/he will be strong.’
gi tí gi kàŋkí ‘We will be strong.’
i tí i kàŋkí ‘You (pl) will be strong.’
bà ti bà kàŋkí ‘They will be strong.’
d. n tí ’ mó ḍámpó’ [187] ‘I will lick.’
ò tá ’ á ḍámpó’ ‘You (sg) will lick.’
à tà à ḍámpó’ ‘S/he will lick.’
gi tí gi ḍámpó’ ‘We will lick.’
i tí i ḍámpó’ ‘You (pl) will lick.’
bà ti bà ḍámpó’ ‘They will lick.’
e. n tí ’ má tsipírà ‘I will turn around.’
ò tá ’ á tsipírà ‘You (sg) will turn around.’
à tà à tsipírà ‘S/he will turn around.’
gi tí gi tsipírà ‘We will turn around.’
i tí i tsipírà ‘You (pl) will turn around.’
bà ti bà tsipírà ‘They will turn around.’
f. n tí ’ má ṭaáří ‘I will bother (someone).’
ò tá ’ á ṭaáří ‘You (sg) will bother (someone).’
à tà à ṭaáří ‘S/he will bother (someone).’
gi tí gi ṭaáří ‘We will bother (someone).’
i tí i ṭaáří ‘You (pl) will bother (someone).’
bà ti bà ṭaáří ‘They will bother (someone).’
g. n tí ’ má dá ‘I will be there.’
ò tá ’ á dá ‘You (sg) will be there.’
à tà à dá ‘S/he will be there.’
gi tí gi dá ‘We will be there.’
i tí i dá ‘You (pl) will be there.’
bà ti bà dá ‘They will be there.’
h. n tí ’ má kpá ‘I will arrive.’
ò tá ’ á kpá ‘You (sg) will arrive.’
à tà à kpá ‘S/he will arrive.’
gi tí gi kpá ‘We will arrive.’
i tí i kpá ‘You (pl) will arrive.’
bà ti bà kpá ‘They will arrive.’
i. n tí ’ má bọ ‘I will prepare food.’
ò tá ’ á bọ ‘You (sg) will prepare food.’
à tà à bọ ‘S/he will prepare food.’

187 My data varies as to whether or not [ATR] harmony affects the future marker and the realis subject marker. It seems it does for the most part, but whether it spreads through the vowel [ɨ] or not varies.
There are two aspects of the data in (90) that bear comment. First, note that the irrealis construction is unchanged in these future examples—the tone pattern is the same as it was for the previous examples where the irrealis construction was the entire clause. Second, (90) provides evidence that the future marker [ti] is a cliticizing TAM marker, since, as with the imperfective markers discussed in the previous chapter, the tone of H-toned subject markers surfaces on [ti], rather than on the subject markers themselves.
The data in (90) thus illustrate that the tone found in the irrealis construction does not change when the irrealis form is part of a larger construction. This will be illustrated again in the next section with negative clauses.

7.2.2 Grammatical Tone in Negative Clauses

As was illustrated in Chapter 3, the irrealis form is also used in negated clauses. This creates some interesting tone interactions, which will be presented in this section. First, the negation of unmarked clauses will be discussed (in Section 7.2.2.1), then negation with TAM markers (Section 7.2.2.2). Finally, negation in the future will be discussed in Section 7.2.2.3, since these forms have a slightly different tonology from non-future forms.

7.2.2.1 Negation of Unmarked Clauses

The simplest form of negation in Anii is the negation of unmarked clauses. Negation is marked by two markers, /kV/ and [ná], which surround an irrealis clause. /kV/ precedes the subject marker, and [ná] occurs at the very end of the sentence (even after objects, though the data presented here does not include sentences with objects).188 This form is illustrated in (91), with bisyllabic, bimoraic stems. Positive unmarked clauses are in the left-hand column, and the negations of those clauses are in the right-hand column, followed by their glosses. Note that the irrealis construction, including the irrealis subject marker and the grammatical H tone on the verb stem, is part of these negative sentences:

(91) a. ń bidá kí má bidá' ná ‘I did not throw (it) away.’
    ó bidá k á bidá' ná ‘You (sg) did not throw (it) away.’
    à bidá k à bidá' ná ‘S/he did not throw (it) away.’
    gí bidá kà gí bidá' ná189 ‘We did not throw (it) away.’

188 Historically, the second negation marker may have been a focus marker of some sort (and in fact, it may still be synchronically a focus marker). This possibility will be pursued in future research.
189 As mentioned in Chapter 1, there is a variant of this form which is always possible, and often used in fast speech. This variant involves /g/-deletion: [kí i bidá' ná]. Since this variant is optional, it will not be discussed further here.
They did not hear.

You (pl) did not hear.

We did not hear.

You (sg) did not hear.

I did not hear.

They are not being quiet.

You (pl) are not being quiet.

We are not being quiet.

You (sg) are not being quiet.

I am not being quiet.

They did not cough.

You (sg) did not cough.

S/he did not cough.

You (pl) did not cough.

We did not cough.

You (sg) did not cough.

I did not cough.

They did not get dressed.

You (pl) did not get dressed.

We did not get dressed.

You (sg) did not get dressed.

I did not get dressed.

They did not stop.

You (pl) did not stop.

We did not stop.

You (sg) did not stop.

I did not stop.

They did not make a field by burning.

You (pl) did not make a field by burning.

We did not make a field by burning.

You (sg) did not make a field by burning.

I did not make a field by burning.

They did not turn their heads.

You (pl) did not turn their heads.

We did not turn our heads.

You (sg) did not turn your head.

S/he did not turn her/his head.

They did not turn my head.

They did not throw (it) away.

You (pl) did not throw (it) away.

I did not throw (it) away.

They did not make a field by burning.

I did not make a field by burning.

You (sg) did not make a field by burning.

S/he did not make a field by burning.

You (pl) did not make a field by burning.

They did not throw (it) away.
There are a few observations to be made here. First, it is not fully clear what the underlying vowel in the first negation marker is. At this point in the synchronic language, [kà] and [kɨ] may simply be non-phonologically conditioned allomorphs. Another possibility is that the vowel in this case is influenced by the place of articulation of the following consonant, with anterior consonants being preceded by a higher, fronter vowel, and the posterior consonant [k] preceded by a low back vowel. The underlying vowel may, in fact, be unspecified for quality.

Some light can be shed on this vowel quality issue by examining the negations of clauses with subjects that are full nouns (which, as shown in Chapter 1, always trigger the presence of noun class agreement markers before the verb stem). Such data is given in (92), organized by noun class. Only the negative sentences are glossed. Note that [g]-deletion is not optional in these forms:

<table>
<thead>
<tr>
<th>Class</th>
<th>Positive</th>
<th>Negative</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. A</td>
<td>ù-pì à tɔ</td>
<td>ù-pì k à tɔ' ná</td>
<td>‘The child did not last.’</td>
</tr>
<tr>
<td>b. Ė</td>
<td>à-rɛ à tɔ</td>
<td>à-rɛ k à tɔ' ná</td>
<td>‘The man did not last.’</td>
</tr>
<tr>
<td>c. B</td>
<td>fífíła à tɔ</td>
<td>fífílà k à tɔ' ná</td>
<td>‘The lamp did not last.’</td>
</tr>
<tr>
<td>d. C</td>
<td>gà-sàpì ga tɔ</td>
<td>gà-sàpì kà à tɔ' ná</td>
<td>‘The bird did not last.’</td>
</tr>
<tr>
<td>e. Đ</td>
<td>gi-pìnè gi tɔ</td>
<td>gi-pìnè kì i tɔ' ná</td>
<td>‘The eye did not last.’</td>
</tr>
<tr>
<td>f. E</td>
<td>ù-fílè ò tɔ</td>
<td>ù-fílè k ò tɔ' ná</td>
<td>‘The day did not last.’</td>
</tr>
<tr>
<td>g. Ė</td>
<td>gò-nê gò tɔ</td>
<td>gò-nê kò ò tɔ' ná</td>
<td>‘The hand did not last.’</td>
</tr>
<tr>
<td>h. F</td>
<td>ṣ-kpàlà ṵ tɔ</td>
<td>ṣ-kpàlà kì n tɔ' ná</td>
<td>‘The mill/grindstone did not last.’</td>
</tr>
<tr>
<td>i. G</td>
<td>bù-tò bò tɔ</td>
<td>bù-tò kì bò tɔ' ná</td>
<td>‘The water did not last.’</td>
</tr>
<tr>
<td>j. Y</td>
<td>bà-pì bà tɔ</td>
<td>bà-pì kì bà tɔ' ná</td>
<td>‘The children did not last.’</td>
</tr>
<tr>
<td>k. W</td>
<td>i-kêkê bà tɔ</td>
<td>i-kêkê kì bà tɔ' ná</td>
<td>‘The bicycles did not last.’</td>
</tr>
<tr>
<td>l. Ü</td>
<td>bò-tiù bò tɔ</td>
<td>bò-tiù kì bò tɔ' ná</td>
<td>‘The hornbills did not last.’</td>
</tr>
<tr>
<td>m. U</td>
<td>i-nà i tɔ</td>
<td>i-nà k i tɔ' ná</td>
<td>‘The grasses did not last.’</td>
</tr>
<tr>
<td>n. T</td>
<td>à-pà i tɔ</td>
<td>à-pà k i tɔ' ná</td>
<td>‘The palm trees did not last.’</td>
</tr>
</tbody>
</table>

The data in (92) shows that the vowel of the first negation marker deletes before a vowel-initial agreement marker, and that where [g]-deletion applies, the vowel of the first negation marker assimilates to that of the vowel of the following agreement marker (and does not elide, even after the [g] is gone). Additionally, (92h) shows the form of the negation marker before an agreement marker that does not have a vowel. If the vowel of
the negation marker were affected only by the vowel of a following agreement marker, it
could be argued from (92h) that [ki] is the underlying form of the marker. Given,
however, that the vowel in question surfaces as [i] before [b] (regardless of the following
vowel), and [a] before an un-elided [k] (again, regardless of the following vowel), it
seems likely that the consonant of a following agreement marker affects the vowel of the
negation marker in those cases. It also seems that the vowel of the agreement marker
only affects the quality of the vowel of the negation marker if there is no intervening
consonant (e.g. due to [g]-deletion). A possible explanation for this data, then, is that the
vowel of the first negation marker undergoes some sort of assimilation to a following
consonant, and perhaps also a following vowel if there is no following consonant. While
the question of how vowel quality in the first negation marker is determined is a
potentially interesting one, I will not delve deeply into the specifics of that question here
since segmental phonology is not the focus of this dissertation.

Returning to the question of tone patterns, note from the forms in (91) and (92)
that the second negation marker has a lexical H tone, which interacts with the other tones
in these clauses only in the sense that when it is preceded by a H-final stem, there is a
downstep at the morpheme boundary. As for tone on the first negation marker, as was
noted above, when the subject marker begins with a vowel, the vowel of the first negation
marker is elided in these non-future forms (elision does not occur in future sentences,
which will be discussed shortly). Since this marker is toneless, however, this elision does
not affect the surrounding tone pattern in any way. Evidence that this marker is in fact
toneless comes from the fact that it surfaces with a H tone only before H-toned subject
markers, and as toneless elsewhere. An additional noteworthy fact is that there is no
downstep between a H-toned negation marker and a H-toned subject marker.

It seems, then, that the tone of H-toned irrealis subject markers not only spreads
rightward, but also leftward. This pattern suggests that the Irrealis H Spreading rule
should be re-written as a bi-directional spreading rule. Since rules, by convention, only
do one thing at a time, this means that the rule in (70) must be written as a mirror-image
rule, as in (93):
This rule says that the H of an irrealis subject pronoun spreads both rightward and leftward.

Negated clauses with H-toned stems are exemplified in (94):

(94) a. ń bilá  ki má bilá ₁  ná  ‘I did not refuse.’
    ó bilá  k á bilá ₁  ná  ‘You (sg) did not refuse.’
    à bilá  k á bilá ₁  ná  ‘S/he did not refuse.’
    gi bilá  k à gi bilá ₁  ná  ‘We did not refuse.’
    i bilá  k i bilá ₁  ná  ‘You (pl) did not refuse.’
    bà bilá  ki bà bilá ₁  ná  ‘They did not refuse.’

b. ń bôdô  ki mà bôdô ₁  ná  ‘I did not climb.’
    ú bôdô  k á bôdô ₁  ná  ‘You (sg) did not climb.’
    ò bôdô  k ò bôdô ₁  ná  ‘S/he did not climb.’
    gi bôdô  k à gi bôdô ₁  ná  ‘We did not climb.’
    i bôdô  k i bôdô ₁  ná  ‘You (pl) did not climb.’
    bà bôdô  ki bà bôdô ₁  ná  ‘They did not climb.’

c. ń bônó  ki mà bônó ₁  ná  ‘I did not finish.’
    ú bônó  k ò bônó ₁  ná  ‘You (sg) did not finish.’
    ò bônó  k ò bônó ₁  ná  ‘S/he did not finish.’
    gi bônó  k à gi bônó ₁  ná  ‘We did not finish.’
    i bônó  k i bônó ₁  ná  ‘You (pl) did not finish.’
    bà bônó  ki bà bônó ₁  ná  ‘They did not finish.’

d. ń drèdè  ki mà drèdè ₁  ná  ‘I did not visit (it).’
    ú drèdè  k á drèdè ₁  ná  ‘You (sg) did not visit (it).’
    ò drèdè  k ò drèdè ₁  ná  ‘S/he did not visit (it).’
    gi drèdè  k à gi drèdè ₁  ná  ‘We did not visit (it).’
    i drèdè  k i drèdè ₁  ná  ‘You (pl) did not visit (it).’
    bà drèdè  ki bà drèdè ₁  ná  ‘They did not visit (it).’

e. ń fàná  ki mà fàná ₁  ná  ‘I did not teach (it).’
    ó fàná  k á fàná ₁  ná  ‘You (sg) did not teach (it).’
    à fàná  k à fàná ₁  ná  ‘S/he did not teach (it).’
    gi fàná  k à gi fàná ₁  ná  ‘We did not teach (it).’
    i fàná  k i fàná ₁  ná  ‘You (pl) did not teach (it).’
    bà fàná  ki bà fàná ₁  ná  ‘They did not teach (it).’

f. ń fôdô  ki mà fôdô ₁  ná  ‘I did not undress.’
    ú fôdô  k á fôdô ₁  ná  ‘You (sg) did not undress.’
\( \text{ň fōdō} \)  \( k \text{ ná} \)  ‘S/he did not undress.’

\( \text{gi fōdō} \)  \( k \text{ ná} \)  ‘We did not undress.’

\( \text{i fōdō} \)  \( k \text{ ná} \)  ‘You (pl) did not undress.’

\( \text{bə fōdō} \)  \( k \text{ ná} \)  ‘They did not undress.’

\( \text{ń kidē} \)  \( k \text{ ná} \)  ‘I did not watch.’

\( \text{ú kidē} \)  \( k \text{ ná} \)  ‘You (sg) did not watch.’

\( \text{ő kidē} \)  \( k \text{ ná} \)  ‘S/he did not watch.’

\( \text{gi kidē} \)  \( k \text{ ná} \)  ‘We did not watch.’

\( \text{i kidē} \)  \( k \text{ ná} \)  ‘You (pl) did not watch.’

\( \text{bə kidē} \)  \( k \text{ ná} \)  ‘They did not watch.’

\( \text{ń sálā} \)  \( k \text{ ná} \)  ‘I did not greet (them).’

\( \text{ú sálā} \)  \( k \text{ ná} \)  ‘You (sg) did not greet (them).’

\( \text{ő sálā} \)  \( k \text{ ná} \)  ‘S/he did not greet (them).’

\( \text{gi sálā} \)  \( k \text{ ná} \)  ‘We did not greet (them).’

\( \text{i sálā} \)  \( k \text{ ná} \)  ‘You (pl) did not greet (them).’

\( \text{bə sálā} \)  \( k \text{ ná} \)  ‘They did not greet (them).’

In the examples in (91) and (94), the tone patterns of the negative clauses are essentially the same as those in non-negative irrealis clauses except for the leftward spreading of the subject pronoun tone. A sample derivation (with a H-toned stem) is in (95):

\begin{itemize}
  \item \( \text{(95) a. [ k i ] [ m a ] [ b i l a ] [ n a ] } \)  Output of Syllabification  
  \hspace{1cm} \mu \mu \mu \mu \mu  
  \hspace{1cm} H \ H \ H \ H  
  \item \( \text{b. [ k i ] [ m a ] [ b i l a ] [ n a ] } \)  Second Mora H Docking  
  \hspace{1cm} \mu \mu \mu \mu \mu  
  \hspace{1cm} H \ H \ H \ H  
  \item \( \text{c. [ k i ] [ m a ] [ b i l a ] [ n a ] } \)  First Mora H Docking  
  \hspace{1cm} \mu \mu \mu \mu \mu  
  \hspace{1cm} H \ H \ H \ H  
\end{itemize}
As shown above, the set of rules proposed in previous sections, with the addition of Irrealis H Spreading (2), can account for tone in non-future negative clauses not marked with TAM markers.

### 7.2.2.2 Negative Clauses with TAM Markers

The negative examples given up until now have been the negations of unmarked clauses. Clauses containing TAM markers can, of course, also be negated. In such cases, whether or not the verb stem carries grammatical tone depends on whether the TAM marker in question is a TAM marker that does not trigger grammatical tone (in which case, there is no grammatical tone on the stem), or a TAM marker that does trigger such a tone (in which case the verb stem exhibits grammatical tone, in the same pattern that has been exemplified in other irrealis forms above). That is, when there is a TAM marker, the verb stem tone is the same as in realis clauses marked with that TAM marker.

The imperfective marker that is used in irrealis clauses is [nà] (as shown in Chapter 4, [ti] would be ungrammatical here). This marker will be used to exemplify the behavior of cliticizing TAM markers. Recall from Chapter 6 that in positive clauses marked with [nà] (i.e. clauses with subject focus), there is no grammatical H tone on the verb stem. In contrast, in the non-TAM-marked irrealis clauses shown above, including
the negative clauses, a grammatical H tone was present on the verb stem. Negative clauses marked with [nà] are given in (95). Note that there is no grammatical H tone on the verb stem here, but that [nà], which is lexically toneless, as shown in Chapter 6, has a H tone here. One example where the first negation marker does not elide and one where it does is given for each type of subject marker (i.e. H-toned and toneless):

(95) a. kí má ná bidá ná ‘I am not throwing (it) away.’
k á ná bidá ná ‘You (sg) not throwing (it) away.’
k à ná bidá ná ‘S/he is not throwing (it) away.’
ki bà ná bidá ná ‘They are not throwing (it) away.’
b. ki má ná bìlá ’ná ‘I am not refusing.’
k á ná bìlá ’ná ‘You (sg) not refusing.’
k à ná bìlá ’ná ‘S/he is not refusing.’
ki bà ná bìlá ’ná ‘They are not refusing.’
c. ki má ná kàŋk ’ná ‘I am not normally strong.’
k á ná kàŋk ’ná ‘You (sg) are not normally strong.’
k à ná kàŋk ’ná ‘S/he is not normally strong.’
ki bà ná kàŋk ’ná ‘They are not normally strong.’
d. kí mó ná dàmpól ’ná ‘I am not licking.’
k á ná dàmpól ’ná ‘You (sg) are not licking.’
k à ná dàmpól ’ná ‘S/he is not licking.’
ki bà ná dàmpól ’ná ‘They are not licking.’
e. kí má ná tsipirà ná ‘I am not turning around.’
k á ná tsipirà ná ‘You (sg) are not turning around.’
k à ná tsipirà ná ‘S/he is not turning around.’
ki bà ná tsipirà ná ‘They are not turning around.’
f. kí má ná faári’ ’ná ‘I am not bothering (someone).’
k á ná faári’ ’ná ‘You (sg) are not bothering (someone).’
k à ná faári’ ’ná ‘S/he is not bothering (someone).’
ki bà ná faári’ ’ná ‘They are not bothering (someone).’
g. kí má ná dà ná ‘I am not normally there.’
k á ná dà ná ‘You (sg) are not normally there.’
k à ná dà ná ‘S/he is not normally there.’
ki bà ná dà ná ‘They are not normally there.’
h. kí má ná ’kpa’ ’ná ‘I am not arriving.’
k á ná ’kpa’ ’ná ‘You (sg) are not arriving.’
k à ná ’kpa’ ’ná ‘S/he is not arriving.’
ki bà ná ’kpa’ ’ná ‘They are not arriving.’
i. kí má ná bóò ná ‘I am not preparing food.’
k á ná bóò ná ‘You (sg) are not preparing food.’

190 This lexical tonelessness can be seen in examples such as [à nà jɛ], ‘s/he was searching’.
They are not preparing food.

I am not going out.

You (sg) are not going out.

S/he is not going out.

They are not going out.

I am not laughing.

You (sg) are not laughing.

S/he is not laughing.

They are not laughing.

I am not reciting.

You (sg) are not reciting.

S/he is not reciting.

They are not reciting.

I am not fighting.

You (sg) are not fighting.

S/he is not fighting.

They are not fighting.

I am not normally good.

You (sg) are not normally good.

S/he is not normally good.

They are not normally good.

I am not running.

You (sg) are not running.

S/he is not running.

They are not running.

I am not getting lost.

You (sg) are not getting lost.

S/he is not getting lost.

They are not getting lost.

I am not cleaning.

You (sg) are not cleaning.

S/he is not cleaning.

They are not cleaning.

I am not stirring.

You (sg) are not stirring.

S/he is not stirring.

They are not stirring.

I am not hurrying.

You (sg) are not hurrying.

S/he is not hurrying.

They are not hurrying.
The fact that there is no downstep between a H-toned imperfective marker and a preceding H-toned subject marker in these example shows that Irrealis H Spreading applies here as expected.

Another point about this data that is perhaps not expected is that the imperfective marker, which is lexically toneless, surfaces with a H tone in every example in (95), even after a toneless subject marker. A similar phenomenon occurs with non-negative irrealis constructions, as is shown with the future imperfective constructions in (96). Note that the imperfective marker has a long vowel in the future. It is not yet clear why this is so, but the phenomenon will be discussed further shortly. The focus here is first on the tone pattern of the TAM marker:

(96) a. ŋ tì ' má nàà bidá191
   ŋ tá ' á nàà bidá  ‘I will be throwing (it) away.’
   à tà â nàà bidá  ‘You (sg) will be throwing (it) away.’
   gi tì gi nàà bidá  ‘We will be throwing (it) away.’
   i tí i nàà bidá  ‘You (pl) will be throwing (it) away.’
   bà tì bà nàà bidá  ‘They will be throwing (it) away.’

b. ŋ tì ' má nàà bilá
   à tà â nàà bilá  ‘S/he will be refusing.’

191 The reader may wonder why there is a downstep between the future marker and the irrealis subject marker, given that Irrealis H Spreading (2) is a bidirectional spreading rule. This unexpected downstep will be accounted for in the following section.

c. ŋ tì ' má nàà kàŋk
   ò tì â nàà kàŋk  ‘I will normally be strong.’
   à tà â nàà kàŋk  ‘S/he will normally be strong.’

d. ŋ tì ' mó nàò ðòmpá
   ò tò â nòò ðòmpá  ‘I will be licking.’
   à tò â nàò ðòmpá  ‘S/he will be licking.’

e. ŋ tì ' má nàà tsípírâ
   à tà â nàà tsípírâ  ‘I will be turning around.’
   f. ŋ tì ' má nàà fàáríi
   à tà â nàà fàáríi  ‘I will be bothering (someone).’
   à tò â nàà fàáríi  ‘S/he will be bothering (someone).’

g. ŋ tì ' má nàà dà
   à tà â nàà dà  ‘I will normally be there.’
   à tò â nòò dòò  ‘S/he will normally be there.’

h. ŋ tì ' má nàà kpà
   à tà â nàà kpà  ‘I will be arriving.’
   i. ŋ tì ' má nàà bòò
   à tà â nàà bòò  ‘S/he will be arriving.’

j. ŋ tì ' má nòò dòò
   ò tò â nòò dòò  ‘I will be going out.’
   à tò â nàà dòò  ‘S/he will be going out.’

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From (95) and (96), (in comparison with the data presented in the previous section), it is clear that there is a grammatical H tone which is part of the irrealis construction, and is thus present in both negative clauses and future clauses. When there is no TAM marker in an irrealis clause, this H tone surfaces on the verb stem, associating by Second Mora H Docking or First Mora H Docking, as shown above. When there is a TAM marker, however, this ‘irrealis H tone’ (as I will call this grammatical H) associates instead to the TAM marker, specifically to the first mora of the TAM marker.

Recall from Chapter 6 that cliticizing TAM markers form a word with a preceding realis subject marker. It appears from the data in (95) and (96) that [nà], a cliticizing TAM marker, also forms a word with a preceding irrealis subject marker, and that the irrealis H tone associates to that word by Second Mora H Docking. It seems that the irrealis H tone links to the first full word in the irrealis construction, and that an irrealis subject marker on its own is not a full word (which is why the tone is found on the verb stem in irrealis clauses without TAM markers).\(^{192}\) In other words, the forms in (95) and (96) are as expected given the presence of an irrealis H tone and the fact that cliticizing TAM markers join with preceding subject markers to form words.

Interestingly, the same pattern occurs in irrealis clauses marked with non-cliticizing TAM markers, meaning that, unlike in realis clauses, the two types of TAM

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\(^{192}\) Another possible analysis is that there is no cliticization here, but instead the irrealis H tone associates to the first mora of the first word after the irrealis subject marker (which would be either a TAM or a verb stem). The problem with this type of analysis is that it would require a restriction against the application of Second Mora H Docking, but only in TAM markers. This type of restriction is difficult to formalize, and it is not clear why it only applies to TAM markers in the irrealis construction (Second Mora H Docking does apparently apply to TAM markers in realis clauses, given the normal form of the lexically H TAM [ʧèé]). This type of analysis is thus more complex and less in line with the previously-discussed structures of Anii than the analysis proposed in the body of the text.
markers behave the same way (with regard to word formation) in irrealis clauses. This is illustrated in (97) with [bɔnà], an underlyingly toneless non-cliticizing TAM marker which has a HL tone pattern in these examples. Note that the stems in this case do have grammatical tone, presumably triggered by [bɔnà], which (unlike the imperfective marker [nà]) normally triggers a grammatical H on a following verb stem:

(97) a. kí má bọnà bídá ɗ ná
k ã bọnà bidá ɗ ná
‘I did not throw (it) away long ago.’
‘S/he did not throw (it) away long ago.’
b. kí má bọnà bìlá ɗ ná
k ã bọnà bìlá ɗ ná
‘I did not refuse long ago.’
‘S/he did not refuse long ago.’
c. kí má bọnà kàŋkiri ná
k ã bọnà kàŋkiri ná
‘I was not strong long ago.’
‘S/he was not strong long ago.’
d. kí má bọnà dàmpàl ɗ ná
k ã bọnà dàmpàl ɗ ná
‘I did not lick long ago.’
‘S/he did not lick long ago.’
e. kí má bọnà tsìpirá ná
k ã bọnà tsìpirá ná
‘I did not turn around long ago.’
‘S/he did not turn around long ago.’
f. kí má bọnà ᵇáráů ɗ ná
k ã bọnà ᵇáráů ɗ ná
‘I did not bother (someone) long ago.’
‘S/he did not bother (someone) long ago.’
g. kí má bọnà dá ɗ ná
k ã bọnà dá ɗ ná
‘I was not there long ago.’
‘S/he was not there long ago.’
h. kí má bọnà kpá ɗ ná
k ã bọnà kpá ɗ ná
‘I did not arrive long ago.’
‘S/he did not arrive long ago.’
i. kí má bọnà bò ɗ ná
k ã bọnà bò ɗ ná
‘I did not prepare food long ago.’
‘S/he did not prepare food long ago.’
j. kí má bọnà dóó ɗ ná
k ã bọnà dóó ɗ ná
‘I did not go out long ago.’
‘S/he did not go out long ago.’
k. kí má bọnà léó ɗ ná
k ã bọnà léó ɗ ná
‘I did not laugh long ago.’
‘S/he did not laugh long ago.’
l. kí má bọnà ᵇéů ɗ ná
k ã bọnà ᵇéů ɗ ná
‘I did not recite long ago.’
‘S/he did not recite long ago.’
m. kí má bọnà bôr ná
k ã bọnà bôr ná
‘I did not fight long ago.’
‘S/he did not fight long ago.’
n. kí má bọnà bôn ná
k ã bọnà bôn ná
‘I was not good long ago.’
‘S/he was not good long ago.’
o. kí má bọnà ᵇúw ná
k ã bọnà ᵇúw ná
‘I did not run long ago.’
‘S/he did not run long ago.’
p. kí má bọnà lìi ná
k ã bọnà lìi ná
‘I did not get lost long ago.’
‘S/he did not get lost long ago.’
q. kí má bọnà pêmpeŋe ná
k ã bọnà pêmpeŋe ná
‘I did not clean long ago.’
‘S/he did not clean long ago.’

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r. ki má bóŋá tôótòó ná  'I did not stir long ago.'
k à bóŋá tôótòó ná  'S/he did not stir long ago.'
s. ki má bóŋá ŋéé ŋéé ná  'I did not hurry long ago.'
k à bóŋá ŋéé ŋéé ná  'S/he did not hurry long ago.'

Since both cliticizing and non-cliticizing TAM markers form words with irrealis subject markers, I assume that in irrealis constructions, it is the subject markers that trigger the word formation, whereas with the realis constructions, the TAM markers are the trigger. The fact that the irrealis subject markers are not full words on their own also accounts for the fact that the markers by themselves they do not attract the irrealis H tone, as discussed above. That is, the irrealis H tone associates to the first word of the irrealis construction unless that first word is an irrealis subject marker on its own. If the subject marker is not joined with a following TAM marker (because there is no following TAM marker), the irrealis H surfaces on a following verb stem instead. Presumably, the subject markers can only cliticize to non-stem words.

A sample derivation for an irrealis construction containing a TAM marker is given in (98) with a toneless subject marker (and a toneless verb stem). I give a third-person plural form because there is no vowel elision in that form and a detailed discussion of the rules governing vowel elision is beyond the scope of this dissertation:

(98) a. [k i] [b a n a] [b i d a] [n a]  
    μ  μ  μ  μ  μ  μ  μ 
    H  H  

    Output of Syllabification

b. [k i] [b a n a] [b i d a] [n a]  
    μ  μ  μ  μ  μ  μ  μ  μ 
    H  H  

    Second Mora H Docking
Negative clauses marked with [bʊŋa] would have a similar derivation, with the addition of the grammatical tone triggered by [bʊŋa], as shown in (99):

(99) a. [kɪ][b a bʊŋ a][b i d a][n a]  
\[\mu\mu\mu\mu\mu\mu\mu\]  
\[H\quad H\quad H\]  
Output of Syllabification

b. [kɪ][b a bʊŋ a][b i d a][n a]  
\[\mu\mu\mu\mu\mu\mu\mu\mu\mu\]  
\[\vdots\quad \vdots\quad \vdots\]  
\[H\quad H\quad H\quad H\]  
Second Mora H Docking

c. [kɪ][b a bʊŋ a][b i d a][n a]  
\[\mu\mu\mu\mu\mu\mu\mu\mu\mu\]  
\[\vdots\quad \vdots\quad \vdots\]  
\[H\quad H\quad H\]  
First Mora H Docking

g. [kɪ][b a bʊŋ a][b i d a][n a]  
\[\mu\mu\mu\mu\mu\mu\mu\mu\mu\]  
\[\vdots\quad \vdots\quad \vdots\]  
\[H\quad H\quad H\]  
Surface Form

With a H-toned subject marker, there is no downstep between the subject marker and the H on the TAM marker because of Irrealis H Spreading (2), as shown in (100):
One wrinkle in this analysis of negative clauses marked with TAM markers is the behavior of the perfect marker [ʧèè], which generally has a lexical H tone. In negated clauses, [ʧèè] exhibits the same pattern as [bʊŋà]—there is no sign of the lexical H, which would normally be associated to the second mora of [ʧèè]:

(101)a. ki mó ʧèè bidá' ná  ‘I have not thrown (it) away.’
    k ò ʧèè bidá' ná  ‘S/he has not thrown (it) away.’
b. ki mó ʧèè bilá' ná  ‘I have not refused.’
    k ò ʧèè bilá' ná  ‘S/he has not refused.’
c. ki mó ʧèè kàŋkír ná  ‘I have not been strong.’
    k ò ʧèè kàŋkír ná  ‘S/he has not been strong.’
d. ki mó ʧèè dʒómpol' ná  ‘I have not licked.’
    k ò ʧèè dʒómpol' ná  ‘S/he has not licked.’
Since there is no spreading onto the second mora of [ʧée] in these examples, the associated tone must be the grammatical tone. The lexical H tone of [ʧée], then, must either link to the first mora and then delink, or simply be deleted before it can link. If the lexical tone were still there, it would link to the first mora, i.e. the subject marker. Assuming the lexical tone were not subsequently delinked, this would result in unattested forms such as *[k òʧée bɨʧáárɩ ná], ‘S/he has not thrown (it) away’. Since it is simpler to assume that the tone delinks before association, I assume that the following
rule, where $H_{\text{TAM}}$ is the lexical H of a TAM marker. Note that no linkage structure is given in this rule because it is assumed to apply before the association rules:

\[(102) \quad \text{TAM H Deletion} \]

\[H_{\text{TAM}} \rightarrow \emptyset / \text{Subject Marker} \]

This rule says that the lexical H of a TAM marker deletes when it precedes the irrealis H tone. With the addition of TAM H Deletion, the derivation of a [ʧëé]-marked negative sentence would be as given in (103):

\[(103)a. [k \text{ i}] [b a \text{ʧ} e e] [b i d a] [n a] \quad \text{Output of Syllabification} \]

\[\mu \mu \mu \mu \mu \mu \mu \]

\[H \quad H \quad H \]

\[b. [k \text{ i}] [b a \text{ʧ} e e] [b i d a] [n a] \quad \text{TAM H Deletion} \]

\[\mu \mu \mu \mu \mu \mu \mu \]

\[H \quad H \quad H \]

\[c. [k \text{ i}] [b a \text{ʧ} e e] [b i d a] [n a] \quad \text{Second Mora H Docking} \]

\[\mu \mu \mu \mu \mu \mu \mu \]

\[\ldots \]

\[H \quad H \quad H \]

\[d. [k \text{ i}] [b a \text{ʧ} e e] [b i d a] [n a] \quad \text{First Mora H Docking} \]

\[\mu \mu \mu \mu \mu \mu \mu \]

\[\ldots \]

\[H \quad H \quad H \]

\[e. [k \text{ i}] [b a \text{ʧ} e e] [b i d a] [n a] \quad \text{Surface Form} \]

\[\mu \mu \mu \mu \mu \mu \mu \]

\[H \quad H \quad ! \quad H \]
It is possible that the TAM H Deletion rule could be related to a restriction in the language against multiple H tones in a non-stem word, though it could also just be a fact of the language with no specific motivation. With the addition of TAM H Deletion, then, the set of ordered rules proposed about can account for all the data given thus far.

7.2.2.3 Future Clauses, Negative and Positive

All of the negative examples given so far in this section are non-future clauses. The negation of future clauses has an extra wrinkle to it with regard to syllable weight and tone on the first negation marker. This is illustrated with the examples in (104). Note that these examples can be the negation of clauses with or without the future marker [tɨ] (i.e. the first example in (104a) is the negation of either [má bídá], ‘May I throw (it) away’ or [ɨ tɨ má bídá], ‘I will throw (it) away’). The examples here show just some of the stem types, but they should be enough for the reader to see that the stems bear a grammatical H tone, like that illustrated in many examples above. The facts of interest here are that the first negation marker is H-toned in all these examples, there is a downstep between the first negation marker and the irrealis subject marker, and that there is no elision of the vowel in the first negation marker:

(103)a. ki ' má bídá ' ná  ‘I will not throw (it) away.’
   ká ' á bídá ' ná  ‘You (sg) will not throw (it) away.’
   ká à bídá ' ná  ‘S/he will not throw (it) away.’
   ká gi bídá ' ná  ‘We will not throw (it) away.’
   ki ' bídá ' ná  ‘You (pl) will not throw (it) away.’
   ki bá bídá ' ná  ‘They will not throw (it) away.’

b. ki ' má bilá ' ná  ‘I will not refuse.’
   ká ' á bilá ' ná  ‘You (sg) will not refuse.’
   ká à bilá ' ná  ‘S/he will not refuse.’
   ká gi bilá ' ná  ‘We will not refuse.’
   ki ' bilá ' ná  ‘You (pl) will not refuse.’
   ki bá bilá ' ná  ‘They will not refuse.’

c. ki ' má kánkír ná  ‘I will not be strong.’
   ká ' á kánkír ná  ‘You (sg) will not be strong
   ká á kánkír ná  ‘S/he will not be strong.’
   ká gi kánkír ná  ‘We will not be strong.’
   ki ' kánkír ná  ‘You (pl) will not be strong.’
   ki bá kánkír ná  ‘They will not be strong.’
d. ki ’ má ṭɔ̀mpòjí ná  ‘I will not lick.’
  ká ’ ó ṭɔ̀mpòjí ná  ‘You (sg) will not lick.’
  ko ñ ṭɔ̀mpòjí ná  ‘S/he will not lick.’
  ká gi ṭɔ̀mpòjí ná  ‘We will not lick.’
  ki i ṭɔ̀mpòjí ná  ‘You (pl) will not lick.’
  ki bò ṭɔ̀mpòjí ná  ‘They will not lick.’

e. ki ’ má tɔsìpìrà ná  ‘I will not turn around.’
  ká ’ á tɔsìpìrà ná  ‘You (sg) will not turn around.’
  kà à tɔsìpìrà ná  ‘S/he will not turn around.’
  ká gi tɔsìpìrà ná  ‘We will not turn around.’
  ki i tɔsìpìrà ná  ‘You (pl) will not turn around.’
  ki bá tɔsìpìrà ná  ‘They will not turn around.’

f. ki ’ má tʃàári’ ná  ‘I will not bother (someone).’
  ká ’ á tʃàári’ ná  ‘You (sg) will not bother (someone).’
  kà à tʃàári’ ná  ‘S/he will not bother (someone).’
  ká gi tʃàári’ ná  ‘We will not bother (someone).’
  ki i tʃàári’ ná  ‘You (pl) will not bother (someone).’
  ki bá tʃàári’ ná  ‘They will not bother (someone).’

g. ki ’ má dà’ ná  ‘I will not be there.’
  ká ’ á dà’ ná  ‘You (sg) will not be there.’
  kà à dà’ ná  ‘S/he will not be there.’
  ká gi dà’ ná  ‘We will not be there.’
  ki i dà’ ná  ‘You (pl) will not be there.’
  ki bá dà’ ná  ‘They will not be there.’

h. ki ’ má kpà’ ná  ‘I will not arrive.’
  ká ’ á kpà’ ná  ‘You (sg) will not arrive.’
  kà à kpà’ ná  ‘S/he will not arrive.’
  ká gi kpà’ ná  ‘We will not arrive.’
  ki i kpà’ ná  ‘You (pl) will not arrive.’
  ki bá kpà’ ná  ‘They will not arrive.’

i. ki ’ má bɔo’ ná  ‘I will not prepare food.’
  ká ’ á bɔo’ ná  ‘You (sg) will not prepare food.’
  kà à bɔo’ ná  ‘S/he will not prepare food.’
  ká gi bɔo’ ná  ‘We will not prepare food.’
  ki i bɔo’ ná  ‘You (pl) will not prepare food.’
  ki bá bɔo’ ná  ‘They will not prepare food.’

j. ki ’ má dɔɗ’ ná  ‘I will not go out.’
  ká ’ ó dɔɗ’ ná  ‘You (sg) will not go out.’
  kà ó dɔɗ’ ná  ‘S/he will not go out.’
  ká gi dɔɗ’ ná  ‘We will not go out.’
  ki dɔɗ’ ná  ‘You (pl) will not go out.’
  ki bá dɔɗ’ ná  ‘They will not go out.’

k. ki ’ má ̀leò’ ná  ‘I will not laugh.’
  ká ’ á ̀leò’ ná  ‘You (sg) will not laugh.’
As the examples in (104) illustrate, there is still vowel-quality assimilation in the first negation marker, but there is no longer vowel elision like there was in non-future forms. Additionally, recall that in the non-future forms, the first negation marker only surfaced with a H tone before H-toned subject markers. In the forms in (104), however, the first negation marker is always H-toned. Another fact of note is that in future negative clauses, there is a downstep between the negation marker and a H-toned subject pronoun, which does not occur in non-future negative clauses. Compare (105a), a list of non-future negative forms, to the future forms in (105b):

(105)a. ká à léo ¹ ná ‘S/he will not laugh.’
ká gi léo ¹ ná ‘We will not laugh.’
kí i léo ¹ ná ‘You (pl) will not laugh.’
kí bà léo ¹ ná ‘They will not laugh.’
l. kí ¹ má tàeu ¹ ná ‘I will not recite.’
kó ¹ ó ñeú ¹ ná ‘You (sg) will not recite.’
kó à ñeú ¹ ná ‘S/he will not recite.’
kó gi ñeú ¹ ná ‘We will not recite.’
kí ñeú ¹ ná ‘You (pl) will not recite.’
kí bò ñeú ¹ ná ‘They will not recite.’
m. kí ¹ má bòr ná ‘I will not fight.’
kó ¹ ó bòr ná ‘You (sg) will not fight.’
kó à bòr ná ‘S/he will not fight.’
kó gi bòr ná ‘We will not fight.’
kí i bòr ná ‘You (pl) will not fight.’
kí bà bòr ná ‘They will not fight.’
n. kí ¹ má bònh ná ‘I will not be good.’
kó ¹ ó bònh ná ‘You (sg) will not be good.’
kó à bònh ná ‘S/he will not be good.’
kó gi bònh ná ‘We will not be good.’
kí i bònh ná ‘You (pl) will not be good.’
kí bà bònh ná ‘They will not be good.’
This data suggests that there are actually two irrealis H tones in the future negative forms, one that surfaces on the verb stem, and one that surfaces on the negation marker. Recall that both non-future negative clauses (as shown above) and non-negative future clauses (as shown above and discussed further below) have an irrealis H tone that in each case surfaces on the verb stem. I assume that this grammatical tone has a meaning related to ‘irrealis-ness’. Crucially, there are two of these irrealis H tones in the future negative clauses, perhaps because those clauses are in some sense doubly irrealis. When there is only one irrealis H tone, it associates to the verb stem (or to a preceding TAM marker). When there are two, however, as shown in (104) and (105b), one irrealis H associates to the verb stem, and the other to the first negation marker, presumably because that marker is the first word in the clause.

The data in (104) (and (105b)) also illustrate something else about the structure of future negative clauses with regard to the application of the Irrealis H Spreading (2) rule. If that rule applied as expected (as it did in non-future negative clauses), a downstep would not be expected between the first negation marker and the subject marker in forms like [kí 'má bidá 'ná], ‘I will not throw (it) away’, from (105b) above. Since Irrealis H Spreading (2) is a mirror image rule, there cannot be a restriction that applies to one spreading direction and not the other.

There are two ways to solve this problem. One option, of course, is to say that Irrealis H Spreading (2) is not in fact a mirror image rule, but is rather two separate rules. In this type of analysis, the leftward-spreading rule would be blocked by a preceding H tone, and the rightward-spreading rule would apply whether or not there is a following H tone.

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193 If a TAM marker were present, this tone would likely surface on the TAM marker, as with the non-future forms above, but I do not have extensive examples of future negative clauses with TAM markers in my data. Some examples I do have are presented at the end of this section and in Appendix A.
tone. This analysis, however, would require two rules where the mirror image analysis only requires one. Another option to account for the downstep in these forms, then, is to assume that Irrealis H Spreading (2) does indeed apply as expected, but that it the H tone does not spread leftward onto the first negation marker because there is something that intervenes.

I posit, therefore, that there is a future morpheme that consists of a mora with no segmental material. This morpheme comes before the irrealis subject marker, and is assumed to have future meaning because it is also present in positive future clauses, as is discussed below. The presence of this mora can account for the unexpected downsteps in (104), and also provides an explanation for why there is no elision of the vowel of the negation marker in these forms. If the environment for elision is the presence of two vowels on adjacent moras (with no consonant between), then an intervening floating mora, would mean the conditions for elision would not be met and elision would therefore not occur. A derivation showing how the presence of a morpheme consisting of a floating mora could account for the data above is given in (106) using the sentence [kì́ má bìdá́ ná], ‘I will not throw (it) away.’ The verb stem here is toneless:

(106)a. [ k i ] [ m a ] [ b i d a ] [ n a ]
   \[ \mu \mu \mu \mu \mu \mu \]
   H    H    H    H

   Output of Syllabification

b. [ k i ] [ m a ] [ b i d a ] [ n a ]
   \[ \mu \mu \mu \mu \mu \mu \]
   H    H    H    H
   Second Mora H Docking

c. [ k i ] [ m a ] [ b i d a ] [ n a ]
   \[ \mu \mu \mu \mu \mu \mu \]
   \[ \mu \mu \mu \mu \mu \mu \]
   \[ \mu \mu \mu \mu \mu \mu \]
   \[ \mu \mu \mu \mu \mu \mu \]
   H    H    H    H
   First Mora H Docking
The floating mora here is not linked to any segmental material, just like the mora left without segmental material after glide deletion, as was shown in Chapter 6 (Section 6.2.3). I therefore assume that the mora here is not pronounced, but I do not assume it deletes, just as with the segment-less mora remaining after glide deletion.

Interestingly, there is also an unexpected downstep in non-negative future clauses, as was briefly mentioned above. The data was presented in Section 7.2.1, and some of it is given again in (107) below. The data in (107) consists of [tɨ]-marked positive future clauses. Only the first- and third-person singular forms are repeated here:

(107)a. ǹ tɨ i má bída  ‘I will throw (it) away.’
   à tà à bída    ‘S/he will throw (it) away.’

b. ǹ tɨ i má bilá  ‘I will refuse.’
   à tà à bilá    ‘S/he will refuse.’

c. ǹ tɨ i má kāŋkíɾ  ‘I will be strong.’
   à tà à kāŋkíɾ    ‘S/he will be strong.’

d. ǹ tɨ i má dʒámptáɭ  ‘I will lick.’
   à tə à dʒámptáɭ ‘S/he will lick.’

e. ǹ tɨ i má tspípáɭ  ‘I will turn around.’
   à tà à tspípáɭ    ‘S/he will turn around.’

f. ǹ tɨ i má ʧāáɭɨɭ  ‘I will bother (someone).’
   à tà à ʧāáɭɨɭ    ‘S/he will bother (someone).’
Note that in each of these cases, there is a downstep between the H-toned future marker and the H-toned irrealis subject marker, but not between the H-toned subject marker and the following verb stem. As in the negated future clauses, these facts can be accounted for by assuming that there is a floating mora (i.e. a future morpheme) that immediately precedes the irrealis subject marker. There is a grammatical tone on the verb stems in these examples, but there is no other grammatical tone—since these clauses are not negative, there is only one irrealis H tone here. The future marker [tɨ], however, is present, in addition to the future morpheme consisting only of a mora.

A derivation of the clause [n ti’ má bídá], ‘I will throw (it) away’, is in (108):
One final set of data that should be presented about future clauses illustrates the
tonal patterns found in such clauses containing TAM markers. The only such clauses for
which I have a reasonable amount of data are those marked with the imperfective marker
[ña] Future positive imperfective clauses are given in (109) (repeated from (96) above),
and their negations in (110):
(109) a. ǹ ti' má nåà bidá
   ŏ tá' á nåà bidá
   à tá' á nåà bidá
   gi tí gi nåà bidá
   i tí i nåà bidá
   bà tí bà nåà bidá
b. ǹ ti' má nåà bilá
   à tá' á nåà bilá
c. ǹ ti' má nå à kàŋkír
   à tá' á nå à kàŋkír
d. ǹ ti' mó nóò ḏjèmpál
   ò tô ' ò nóò ḏjèmpál
e. ǹ ti' má nåà tsípirà
   à tá' á nåà tsípirà
f. ǹ ti' má nåà ḏfaárö
   à tá' á nå à ḏfaárö
g. ǹ ti' má nåà dá
   à tá' á nåà dá
h. ǹ ti' má nåà kpá
   à tá' á nå à kpá
i. ǹ ti' má nåà bòò
   à tá' á nå à bòò
j. ǹ ti' mó nóò ḏóó
   ò tô ' ò nóò ḏóó
k. ǹ ti' má nå à lèò
   à tá' á nå à lèò
l. ǹ ti' mó nóò ḏéù
   ò tô ' ò nóò ḏéù
m. ǹ ti' mó nóò bór
   ò tô ' ò nóò bór
n. ǹ ti' mó nóò bón
   ò tô ' ò nóò bón

(110) a. ǹ ri' má nåà bidá ná
   ká' á nåà bidá ná
   ká à nåà bidá ná
   ká gi nåà bidá ná
   kí i nåà bidá ná
   kí bà nåà bidá ná
b. ǹ ri' má nå à bilá' ná
   ká à nåà bilá' ná
c. ǹ ri' má nå à kàŋkír ná
   ká à nå à kàŋkír ná

'I will be throwing (it) away.'
'You (sg) will be throwing (it) away.'
'S/he will be throwing (it) away.'
'We will be throwing (it) away.'
'You (pl) will be throwing (it) away.'
'They will be throwing (it) away.'
'I will be refusing.'
'S/he will be refusing.'
'I will normally be strong.'
'S/he will normally be strong.'
'I will be licking.'
'S/he will be licking.'
'I will be turning around.'
'S/he will be turning around.'
'I will be bothering (someone).'
'S/he will be bothering (someone).'
'I will normally be there.'
'S/he will normally be there.'
'I will be arriving.'
'S/he will be arriving.'
'I will be preparing food.'
'S/he will be preparing food.'
'I will be going out.'
'S/he will be going out.'
'I will be laughing.'
'S/he will be laughing.'
'I will be reciting.'
'S/he will be reciting.'
'I will be fighting.'
'S/he will be fighting.'
'I will normally be good.'
'S/he will normally be good.'

'I will not be throwing (it) away.'
'You (sg) will not be throwing (it) away.'
'S/he will not be throwing (it) away.'
'We will not be throwing (it) away.'
'You (pl) will not be throwing (it) away.'
'They will not be throwing (it) away.'
'I will not be refusing.'
'S/he will not be refusing.'
'I will not be (regularly) strong.'
'S/he will not be (regularly) strong.'
d. ki’má nòò ḏòmpòl’ ná ‘I will not be licking.’
    kò̀̀ò nòò ḏòmpòl’ ná ‘S/he will not be licking.’

e. ki’má nàà tsìpirà ná ‘I will not be turning around.’
    kà̀ à nàà tsìpirà ná ‘S/he will not be turning around.’

f. ki’má nàà ṭ’àáří’ ná ‘I will not be bothering (someone).’
    kà̀ à nàà ṭ’àáří’ ná ‘S/he will not be bothering (someone).’

g. ki’má nàà dà ná ‘I will not be there (regularly).’
    kà à nàà dà ná ‘S/he will not be there (regularly).’

h. ki’má nàà kpà’ ná ‘I will not be arriving.’
    kà à nàà kpà’ ná ‘S/he will not be arriving.’

i. ki’má nàà bòò’ ná ‘I will not be preparing food.’
    kà à nàà bòò’ ná ‘S/he will not be preparing food.’

j. ki’má nòò dìì’ ná ‘I will not be going out.’
    kò̀̀ò nòò dìì’ ná ‘S/he will not be going out.’

k. ki’má nàà lèò ná ‘I will not be laughing.’
    kà à nàà lèò ná ‘S/he will not be laughing.’

l. ki’má nòò ḋéù’ ná ‘I will not be reciting.’
    kò̀̀ò nòò ḋéù’ ná ‘S/he will not be reciting.’

m. ki’má nòò bòò ná ‘I will not be fighting.’
    kò̀̀ò nòò bòò ná ‘S/he will not be fighting.’

n. ki’má nòò bòò’ ná ‘I will not be (regularly) good.’
    kò̀̀ò nòò bòò’ ná ‘S/he will not be (regularly) good.’

In both sets of examples, the irrealis H tone surfaces on the first mora of the imperfective marker, as expected from the discussion of TAM-marked irrealis clauses above. Negative and future clauses marked with other TAM markers have not yet been fully investigated, though a few examples from my data are given in Appendix A.

As this section has shown, the tone pattern on negative clauses, with or without TAM markers, can be accounted for with the same set of ordered rules that can account for tone on non-negative clauses, with the assumption that there is a future morpheme consisting of a segment-less mora that is found before the irrealis subject pronouns in clauses with future temporal reference. Additionally, it was demonstrated here that an irrealis grammatical H tone can be present due to negation, or to future temporal reference, or both.
7.2.3 Conclusions and Discussion

This section has presented grammatical tone in irrealis clauses. This tone behaves similarly to the grammatical tone that is present on verb stems in realis clauses marked with non-cliticizing TAM markers, except for the fact that Second Mora H Docking does not apply to the irrealis tone when it surfaces on TAM markers. The behavior of tone on irrealis subject markers has also been presented here, as well as the interaction between irrealis subject marker tones and the irrealis H tone.

All of the data presented thus far in this chapter has discussed one particular type of grammatical tone pattern, i.e. a single H tone that (often) associates to the verb stem. This pattern is the most common grammatical tone pattern in Anii, though it is not clear that all single-H grammatical tone patterns in Anii have the same meaning—there seems to be more than one morpheme consisting of a single H tone. From the data presented thus far, it seems likely that there are two different grammatical tones at work here, i.e. a tone marking clause or verb phrase subordination, and a tone marking ‘irrealis-ness’. The grammatical H in the types of clauses in (111a) seems phonologically to behave similarly as that in the clauses in (111b), but there are slight differences, as pointed out above, and it is not clear that the two tones have the same meaning. Note that [ŋǝ], ‘see’, is a toneless verb stem, as is [ɲèm], ‘drink’:

\[(111)\]a. ń bʊŋə ɲò  
  ń pi ɲò  
  ń jèjè kókó à ɲèm  
  b. má ɲò  
  ń tì má ɲò  
  kì má ɲò ’ná  
  kì ’má ɲò ’ná  

‘I saw long ago.’  
‘I came to see.’  
‘I looked for gruel to drink.’  
‘May I see.’  
‘I will see.’  
‘I did not see.’  
‘I will not see.’

It is clear that there is one grammatical H whose meaning is related to verb phrase concatenation or subordination (i.e. that found in realis clauses). These are the examples in (111a). The final example in (111a) is given to illustrate that this truly is about verb phrases, not just verbs, since the object [kókó], ‘gruel’, is present in the construction.
As for the grammatical H tones in (111b), it is not obvious that these grammatical H tones are present due to clause structure. They may instead have a more semantic interpretation. As the first example in (111a) shows, this type of tone is present even in sentences consisting only of a subject marker and a verb stem, and there is no element of this clause that is clearly being subordinated (or even concatenated). Instead, as I argued above, this grammatical H tone appears to be an indicator of irrealis meaning. I say irrealis because it apparently marks either the future or negation—or both. One grammatical H is present in each of the middle examples in (111b), likely marking future meaning in the second example, and negative meaning in the first. Most crucially, it two grammatical H tones are present in the final example, as was argued above, with one on the verb stem as expected, and the second on the first negation marker (i.e. the first word in the sentence). It seems likely that one of those H tones marks negation, and the other future meaning.

Thus, while the subordination H tone and the irrealis H tone appear to be very similar regarding their phonological behavior, they likely have different meanings. Further research is needed into the semantics of these tones, and into Anii syntax in order to confirm this hypothesis, so further discussion of this issue must be left to future research.

There is at least one more type of grammatical tone in Anii that has not yet been presented. This tone pattern behaves differently (phonologically) from the grammatical tones discussed thus far, and is found on grammatically-reduplicated forms, as will be presented in the following section.

7.3 Tone with Grammatical Reduplication

In addition to the lexical verb stem reduplication discussed in Chapter 6, Anii also has a grammatical reduplication process, used to express contrastive verb focus. Unlike lexical reduplication, this grammatical reduplication process is fully productive in the synchronic language, and can occur with any verb stem (even lexically-reduplicated verb stems, as will be discussed at the end of this section).
The tone pattern of grammatically-reduplicated clauses is illustrated with toneless CVCV verb stems in (112). The important fact to note here is that there are no H tones on the lexically toneless stems (as expected), but the following reduplicants surface with a H on both moras. In contrast with all the examples given previously, note also that none of the subject markers in (112) have H tone:

(112)a. ŋ bidá bidá    ‘I threw (it) away.’
   ŋ bidá bidá    ‘You (sg) threw (it) away.’
   à bidá bidá    ‘S/he threw (it) away.’
   gi bidá bidá   ‘We threw (it) away.’
   i bidá bidá    ‘You (pl) threw (it) away.’
   bá bidá bidá   ‘They threw (it) away.’

b. ŋ bonja bonja    ‘I turned my head.’
   ŋ bonja bonja    ‘You (sg) turned your head.’
   à bonja bonja    ‘S/he turned his/her head.’
   gi bonja bonja   ‘We turned our heads.’
   i bonja bonja    ‘You (pl) turned your heads.’
   bá bonja bonja   ‘They turned their heads.’

c. ŋ dônô dönô    ‘I made a field by burning.’
   ŋ dönô dönô    ‘You (sg) made a field by burning.’
   à dönô dönô    ‘S/he made a field by burning.’
   gi dönô dönô   ‘We made a field by burning.’
   i dönô dönô   ‘You (pl) made a field by burning.’
   bá dönô dönô   ‘They made a field by burning.’

d. ŋ jidé jidé    ‘I stopped.’
   ŋ jidé jidé    ‘You (sg) stopped.’
   à jidé jidé    ‘S/he stopped.’
   gi jidé jidé    ‘We stopped.’
   i jidé jidé    ‘You (pl) stopped.’
   bá jidé jidé    ‘They stopped.’

e. ŋ kârâ kârâ    ‘I got dressed.’
   ŋ kârâ kârâ    ‘You (sg) got dressed.’
   à kârâ kârâ    ‘S/he got dressed.’
   gi kârâ kârâ    ‘We got dressed.’
   i kârâ kârâ    ‘You (pl) got dressed.’
   bá kârâ kârâ    ‘They got dressed.’

f. ŋ kõlõ kõlõ    ‘I coughed.’
   ŋ kõlõ kõlõ    ‘You (sg) coughed.’
   à kõlõ kõlõ    ‘S/he coughed.’
   gi kõlõ kõlõ    ‘We coughed.’

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You (pl) coughed.
They coughed.
I am being quiet.
You (sg) are being quiet.
S/he is being quiet.
We are being quiet.
You (pl) are being quiet.
They are being quiet.

I heard.
You (sg) heard.
S/he heard.
We heard.
You (pl) heard.
They heard.

With H-toned verb stems, the base exhibits lexical tone (but, as with the toneless stems, no grammatical tone). The reduplicant again is completely H-toned, but no subject markers are H-toned in these forms. (113) illustrates:

(113)a. ǹ bilá ı bilá  ‘I refused.’
   ò bilá ’bilá  ‘You (sg) refused.’
   à bilá ı bilá  ‘S/he refused.’
   gi bilá ı bilá  ‘We refused.’
   i bilá ı bilá  ‘You (pl) refused.’
   bà bilá ı bilá  ‘They refused.’

b. ǹ bódó ı bódó  ‘I climbed.’
   û bódó ı bódó  ‘You (sg) climbed.’
   ò bódó ı bódó  ‘S/he climbed.’
   gi bódó ı bódó  ‘We climbed.’
   i bódó ı bódó  ‘You (pl) climbed.’
   bà bódó ı bódó  ‘They climbed.’

c. ǹ bôñó ı bôñó  ‘I finished.’
   û bôñó ı bôñó  ‘You (sg) finished.’
   ò bôñó ı bôñó  ‘S/he finished.’
   gi bôñó ı bôñó  ‘We finished.’
   i bôñó ı bôñó  ‘You (pl) finished.’
   bà bôñó ı bôñó  ‘They finished.’

d. ǹ drèdè ’drèdè  ‘I visited (it).’
   û drèdè ’drèdè  ‘You (sg) visited (it).’
   ò drèdè ’drèdè  ‘S/he visited (it).’
   gi drèdè ’drèdè  ‘We visited (it).’
The stems in (113) exhibit lexical tone, while the reduplicants exhibit the same surface tone pattern as the reduplicants of toneless stems.

This general pattern is further illustrated with a wider variety of stem types in the representative examples below:

(114) **Bisyllabic, Consonant Final, Toneless:**

a. ñ kàŋkì kàŋkì  ‘I am strong.’
   à kàŋkì kàŋkì  ‘S/he is strong.’

b. ñ sèŋkèr  sèŋkèr  ‘I separated.’
   ò sèŋkèr  sèŋkèr  ‘S/he separated.’

(115) **Bisyllabic, Consonant Final, H-Toned**

a. ñ dàŋmpòl  dàŋmpòl  ‘I licked.’
   ò dàŋmpòl  dàŋmpòl  ‘S/he licked.’
b. ñ tūtūr ’I pushed.’
à tūtūr ’S/he pushed.’

(116) *Trisyllabic, Trimoraic Toneless*

a. ñ tsipirà tsipirá ‘I turned.’
à tsipirà tsipirá ‘S/he turned.’
b. ñ tsàŋkàrò tsàŋkàrò ‘I leaned.’
à tsàŋkàrò tsàŋkàrò ‘S/he leaned.’

(117) *Bisyllabic, Quadrimoraic, H-Toned*

ñ tʃārɩ tʃārɩ ‘I bothered (someone).’
à tʃārɩ tʃārɩ ‘S/he bothered (someone).’

(118) *Monomoraic, CV Structure, Toneless*

a. ñ dʒí dʒí ‘I ate.’
à dʒí dʒí ‘S/he ate.’
b. ñ jɔ jɔ ‘I knew.’
à jɔ jɔ ‘S/he knew.’

(119) *Monomoraic, CV Structure, H-Toned*

a. ñ kpá kpá ‘I arrived.’
à kpá kpá ‘S/he arrived.’
b. ñ tɔ tɔ ‘I endured.’
à tɔ tɔ ‘S/he endured.’

(120) *Bimoraic, CVV Structure, Toneless*

a. ñ bɔɔ bɔɔ ‘I prepared food.’
à bɔɔ bɔɔ ‘S/he prepared food.’
b. ñ fàà fàà ‘I diminished.’
à fàà fàà ‘S/he diminished.’

(121) *Bimoraic, CVV Structure, H-Toned*

a. ñ dòó dòó ‘I went out.’
à dòó dòó ‘S/he went out.’
b. ñ sàá sàá ‘I waited.’
à sàá sàá ‘S/he waited.’

(122) *Monomoraic Diphthongs, Toneless*

a. ñ kɔɔ kɔɔ ‘I threw (it).’
à kɔɔ kɔɔ ‘S/he threw (it).’
b. mà leò lèò ‘I laughed.’
à leò lèò ‘S/he laughed.’
(123)  *Monomoraic Diphthong, H-Toned*

\[
mǝ \text{'I recited.'} \\
\dot{m}ǝ \text{'S/he recited.'}
\]

(124)  *CVC Stems, Toneless*

a. ǹ fār ē>fār  ‘I styled hair.’
   à fār ē>fār  ‘S/he styled hair.’

b. ǹ fōl ē>fōl  ‘I slept.’
   à fōl ē>fōl  ‘S/he slept.’

(125)  *CVC Stems, H-Toned*

a. ǹ kpār  \text{ kpār  ‘I grew.’}
   à kpār  \text{ kpār  ‘S/he grew.’}

b. ǹpām  \text{ pām  ‘I got stuck.’}
   à pām  \text{ pām  ‘S/he got stuck.’}

There are two aspects of the data above that need to be accounted for. First, of course, the grammatical tone on the reduplicant (H tone on every mora, in all cases) must be analyzed. Second, the puzzle of why none of the subject markers have H tone on the surface in these forms must be solved.

Since the reduplicant has the same tone pattern in all cases, with no obvious effect of stem tone patterns, it seems that the grammatical reduplication process reduplicates all of the segmental phonology of the stem, but none of the tone pattern. Additionally, there is clearly a grammatical tone pattern that links to the reduplicant. There also seems to be a spreading rule at work, since in all cases, no matter what the length of the stem, all of the moras of the reduplicant are H-toned.

One way to analyze these forms is to assume that there is a grammatical H tone that is part of this reduplication construction, and that that tone either links to the first mora of the reduplicant and spreads rightward, or links to the final mora and spreads leftward. This type of analysis would require either a special association rule linking the grammatical H to the final mora of the reduplicant, or a restriction on the application of Second Mora H Docking within the reduplicant, to allow the H tone to link to the first mora of the reduplicant instead of the second.
There is also another possibility for the analysis of the tone on the reduplicant, which is that the grammatical tone pattern here is actually a HH pattern. If there are two H tones that link to the reduplicant, then the same association rules that apply to other tone patterns could apply to the grammatical tone here. This type of analysis would require an extra fusion rule that would not be needed if there were only one H tone on the reduplicant, but has the advantage of not requiring special provisions regarding tone association. Though it is hard to compare the relative complication of an extra fusion rule in comparison with a restriction on the application of a tone association rule, it seems that on the whole, analyzing the reduplication grammatical tone as being a HH pattern is not more complicated than the alternatives. This type of analysis also has the advantage of being a better fit with the analysis that has been developed thus far.

I assume, then, that the grammatical tone on the reduplicant is a HH pattern, and that it is linked to the reduplicant by the expected association rules. In addition to these association rules, then, there must also be a spreading rule that causes unbounded H spreading within the reduplicant (to account for the fact that even quadrimoraic reduplicants are completely H-toned). The rule of lexical H spreading proposed above cannot apply here because this tone is clearly grammatical, not lexical. The necessary spreading rule is given in (126), where $\mu_r$ represents a reduplicant mora:

\[ \begin{array}{c} \mu_r \\ \mu_r \\ H \end{array} \]

(126) **Reduplicant H Spreading**

(126) says that a H tone attached to a reduplicant mora spreads to an adjacent toneless reduplicant mora. This rule applies iteratively since all the reduplicants in this grammatical reduplication construction are completely H-toned.

Given that there are initially two H tones associated to the reduplicant in this construction, and that there is no downstep between them, there must be a fusion rule that applies within the reduplicant. Such a rule is given in (127), where $\mu_r$ is again a reduplicant mora:
This rule says that when there are H tones on adjacent reduplicant moras, the first spreads onto the second mora and the second delinks.

The rules in (126) and (127), in combination with the previously-proposed association rules, can account for the grammatical tone found on the reduplicant in the grammatical reduplication construction. The only aspect of this construction that has not been accounted for, then, is the lack of subject marker tone. There are at least two ways to account for the lack of tone on subject markers in these clauses. It could be that the subject marker tones are not present in this construction (which would be possible only if the subject marker tones are grammatical, not lexical). It is also possible that the tones are underlyingly present, but do not surface. This could occur if there is a rule that delinks the lexical H tones from H-toned subject markers, if they delete before tone association, or if there is a restriction of some kind that prevents them from associating. Whatever is happening, it must be a feature of these grammatically-reduplicating forms, since there are no other known forms in which the subject marker tones are not present.

The simplest solution here is to assume that the tones were never present in the first place. This means that the subject-marker tones must in fact be grammatical tones (marking non-third-person subjects), and that there is something about the reduplication construction which causes the grammatical tones not to be present. Perhaps the subject marker tones are not present in this case because the focus is on the verb in the reduplication construction.

A derivation of a grammatically-reduplicated form with the analysis proposed thus far is given in (128) with the toneless stem [biˈda], ‘throw away’. Reduplicant H Spreading does not apply here because the reduplicant is only two moras long, but it would apply with longer reduplicants:
The addition of TAM markers does not affect the tone of this grammatical reduplication construction except that with TAM markers that normally trigger a following grammatical tone, that tone is present on the stems in the reduplication construction, as well. For the most part, the subject markers surface with no tone, the TAM markers have only the expected lexical tone, and all the reduplicant moras are H-

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194 The one exception to this claim may be the imperfective marker (which is [nà] in this case because these are focused clauses). It seems to be the case that both the subject marker and the TAM marker are consistently H-toned in grammatically-reduplicated clauses marked with [nà]:

- ná fūbā fūbā ‘I am changing.’
- ú ná fūbā fūbā ‘You (sg) are changing.’
- á ná fūbā fūbā ‘S/he is changing.’
- gi ná fūbā fūbā ‘We are changing.’
- i ná fūbā fūbā ‘You (pl) are changing.’
- bá ná fūbā fūbā ‘They are changing.’

It is not clear why there would be a H tone on all subject markers and TAMs here, when there is no evidence of such a tone in any other forms. I was only able to check these forms with one consultant, and it is possible she was thinking of some subordinate clause form rather than a main clause form.
toned. (129) illustrates the forms with a cliticizing marker, and (130) and (131) with non-cliticizing ones:

(129)a. ñ tí bidá bidá  ‘I finally threw (it) away.’
   à tí bidá bidá  ‘S/he finally threw (it) away.’
 b. ñ tí bilá bilá  ‘I finally refused.’
   à tí bilá bilá  ‘S/he finally refused.’
 c. ñ tí kángkír kángkír  ‘I was finally strong.’
   à tí kángkír kángkír  ‘S/he was finally strong.’
 d. ñ tí ḋômpál ḋômpál  ‘I finally licked.’
   à tí ḋômpál ḋômpál  ‘S/he finally licked.’
 e. ñ tí tśipirá tśipirá  ‘I finally turned around.’
   à tí tśipirá tśipirá  ‘S/he finally turned around.’
 f. ñ tí ʧàári’ì ʧàári’ì  ‘I finally bothered (someone).’
   à tí ʧàári’ì ʧàári’ì  ‘S/he finally bothered (someone).’
 g. ñ tí dá dá  ‘I was finally there.’
   à tí dá dá  ‘S/he was finally there.’
 h. ñ tí ’kpá’ kpá  ‘I finally arrived.’
   à tí ’kpá’ kpá  ‘S/he finally arrived.’
 i. ñ tí bò’ bó’  ‘I finally prepared food.’
   à tí bò’ bó’  ‘S/he finally prepared food.’
 j. ñ tí dò’ dò’  ‘I finally went out.’
   à tí dò’ dò’  ‘S/he finally went out.’
 k. ñ tí ʧà’ ʧà’  ‘I finally laughed.’
   à tí ʧà’ ʧà’  ‘S/he finally laughed.’
 l. ñ tí ’ʧá’ ’ʧá’  ‘I finally recited.’
   à tí ’ʧá’ ’ʧá’  ‘S/he finally recited.’
 m. ñ tí bò’ bò’  ‘I finally fought.’
   à tí bò’ bò’  ‘S/he finally fought.’
 n. ñ tí ’bón’ ’bón’  ‘I was finally good.’
   à tí ’bón’ ’bón’  ‘S/he was finally good.’

(130)a. ñ bòńa bidá bidá  ‘I threw (it) away long ago.’
   à bòńa bidá bidá  ‘S/he threw (it) away long ago.’
 b. ñ bòńa bilá bilá  ‘I refused long ago.’
   à bòńa bilá bilá  ‘S/he refused long ago.’
 c. ñ bòńa kángkír kángkír  ‘I was strong long ago.’
   à bòńa kángkír kángkír  ‘S/he was strong long ago.’
 d. ñ bòńa ḋômpál ḋômpál  ‘I licked long ago.’
   à bòńa ḋômpál ḋômpál  ‘S/he licked long ago.’

when these examples were elicited. This issue requires more research, so I will not speculate further here, but simply make the facts available.
(131)a. ñ fëë bidá 'idá
   à fëë bidá 'idá
   'I had thrown (it) away.'
   'S/he has thrown (it) away.'

b. ñ fëë 'bilá 'bilá
   à fëë 'bilá 'bilá
   'I have refused.'
   'S/he has refused.'

c. ñ fëë kàŋkìì kàŋkìì
   à fëë kàŋkìì kàŋkìì
   'I have been strong.'
   'S/he has been strong.'

d. ñ fëë 'dämpål 'dämpål
   à fëë 'dämpål 'dämpål
   'I have licked.'
   'S/he has licked.'

e. ñ fëë tshipirà tshipirà
   à fëë tshipirà tshipirà
   'I have turned around.'
   'S/he has turned around.'

f. ñ fëë 'tñårìì 'tñårìì
   à fëë 'tñårìì 'tñårìì
   'I have bothered (someone).'
   'S/he has bothered (someone).'

   /à fëë 'dòó 'dòó
   'I have gone out.'
   'S/he has gone out.'

g. ñ fëë 'dà 'dà
   à fëë 'dà 'dà
   'I have been there.'
   'S/he has been there.'

h. ñ fëë 'kpà 'kpà
   à fëë 'kpà 'kpà
   'I have arrived.'
   'S/he has arrived.'

i. ñ fëë bòò 'bòò
   à fëë bòò 'bòò
   'I have prepared food.'
   'S/he has prepared food.'

j. ñ fëë 'dòó 'dòó
   à fëë 'dòó 'dòó
   'I have gone out.'
   'S/he has gone out.'

k. ñ fëë 'léó 'léó
   à fëë 'léó 'léó
   'I have laughed.'
   'S/he has laughed.'
l.̀ ̀fɛɛ́ ́fɛɛ́ ́fɛɛ́
    ̀fɛɛ́ ́fɛɛ́ ́fɛɛ́
    ‘I have recited.’
    à ̀fɛɛ́ ́fɛɛ́ ́fɛɛ́
    ‘S/he has recited.’
m.̀ ̀fɛɛ́ ́bɔ́r bɔ́r
    ̀fɛɛ́ ́bɔ́r bɔ́r
    ‘I have fought.’
n.̀ ̀fɛɛ́ ́bɔ́n bɔ́n
    ̀fɛɛ́ ́bɔ́n bɔ́n
    ‘S/he has fought.’

A derivation of a grammatically reduplicated form with a non-cliticizing TAM marker is given in (132):

\[(132)\]

a. \[[n] [b ʊ ŋ a] [b i d a] [b i d a]\] Output of Syllabification

\[
\begin{array}{ccccccc}
\mu & \mu & \mu & \mu & \mu & \mu & \mu \\
H & H & H
\end{array}
\]

b. \[[n] [b ʊ ŋ a] [b i d a] [b i d a]\] Second Mora H Docking

\[
\begin{array}{ccccccc}
\mu & \mu & \mu & \mu & \mu & \mu & \mu \\
H & H & H
\end{array}
\]

c. \[[n] [b ʊ ŋ a] [b i d a] [b i d a]\] First Mora H Docking

\[
\begin{array}{ccccccc}
\mu & \mu & \mu & \mu & \mu & \mu & \mu \\
H & H & H
\end{array}
\]

d. \[[n] [b ʊ ŋ a] [b i d a] [b i d a]\] Reduplicant H Fusion

\[
\begin{array}{ccccccc}
\mu & \mu & \mu & \mu & \mu & \mu & \mu \\
H & H & H
\end{array}
\]

e. \[[n] [b ʊ ŋ a] [b i d a] [b i d a]\] Surface Form

\[
\begin{array}{ccccccc}
\mu & \mu & \mu & \mu & \mu & \mu & \mu \\
H & H & H
\end{array}
\]

With longer reduplicants, Reduplicant H Spreading would apply before Reduplicant H Fusion, and Reduplicant H Fusion would apply multiple times.
There is one more detail about these grammatically reduplicated forms that must be addressed. Recall that grammatical reduplication can apply to lexically-reduplicated stems. The data is in (133), where it is clear that the lexically H-toned reduplicants have an unexpected downstep in them, in the same place in which a downstep is present in the stems. Lexically toneless stems are in (133a) and H-toned stems in (133b):

(133)
a. ǹ tòòtòò tòótóó ‘I stirred.’
   ǝ tòòtòò tòótóó ‘S/he stirred.’
   ǹ jééjéé jééjéé ‘I strolled.’
   ǝ jééjéé jééjéé ‘S/he strolled.’

b. ǹ páá páá ! páá páá ‘I joked.’
   á páá páá ! páá páá ‘S/he joked.’
   ǹ ñcción! ñcción ‘I hurried.’
   ǝ ñcción! ñcción ‘S/he hurried.’

There is no way to account for the data in (133b) with the rules proposed here. All that can be said is that there must be some kind of identity requirement between the stems and the grammatical reduplicants that leads to the presence of a downstep in the middle of the reduplicants in the forms in (133b), but the lack thereof in (133a).

This section has shown that with just two rules specific to the grammatical reduplication process (i.e. Reduplicant H Spreading and Reduplicant H Fusion), most of the data presented in this section can be accounted for by the set of ordered rules already proposed in other sections. The grammatical reduplication of lexically-reduplicated forms cannot be analyzed with these rules, but it is not surprising that such forms would represent exceptions to the rules.

7.4 Conclusions Regarding Grammatical Tone

In Chapters 6 and 7, I have presented detailed data illustrating many of the possible tone patterns in Anii. I have also proposed an analysis to account for those patterns. All the known grammatical tone patterns within the Anii verb complex have been presented and analyzed in these chapters. The following set of only nine rules (in
addition, of course, to the prosodification structure derived by the rules proposed in Chapter 5 and some restrictions regarding rule application), in approximately this order, can account for all of the tone patterns in the Anii clauses presented here:

(134) TAM H Deletion
Second Mora H Docking
First Mora H Docking
Mora Insertion
H Spreading (2) (lexical tone only)
Irrealis H Spreading (2)
Reduplicant H Spreading
H Fusion (2)
Reduplicant H Fusion

This short list of rules can thus account for the vast majority of known tone patterns within the Anii verb complex

As has been illustrated, tone docking in Anii (at least within the verb complex) is extremely predictable (except for certain specific cases where the association rules are blocked), with both grammatical and lexical tones linking to the second mora of a word where possible, and to the first mora if there is no second mora, or if a H tone is already linked to the second mora. The other proposed rules are more specific, in that they only apply in particular constructions or particular types of words (i.e. stems or reduplicates). The analysis presented here represents the first theoretical analysis of any aspect of Anii tone, and can provide the basis for future research into other tonal behaviors in Anii.

Additionally, the tone patterns presented here have provided evidence for unusual syllable weight patterns in Anii verb stems. Throughout these chapters, it has been shown that monophthongal CVV forms are bimoraic, while diphthongs are all monomoraic, and that consonant-final forms are monomoraic after initial moraification and syllabification, but bimoraic on the surface because of a WBP rule. This three-way weight-related contrast illustrates that languages can exhibit more variation with regard to

195 It is possible that imperative clauses also have grammatical tone, but based on the data currently available to me on this subject, there does not in fact appear to be any specific grammatical tone pattern on Anii imperatives (at least not on non-negative imperatives). Further data needs to be collected to determine this for sure. It is also clear that there are syntactically-conditioned H tones in Anii, which have not been fully investigated here pending more in-depth research on Anii syntax.
syllable-weight phenomena than many scholars have previously assumed. The existence of data of this kind also suggests that phonological theory needs to address issues of prosodification more fully in order to develop theoretical tools that can account for all of the cross-linguistic variation that is present, including the unusual syllable structure of languages like Anii.
Chapter 8
Conclusions

This dissertation has presented an in-depth study of the temporal and aspectual semantics and the verbal tonology of Gisuda Anii. This work is the first in-depth study of any aspect of the grammar of any dialect of Anii. Section 8.1 summarizes the findings reported in this dissertation, while Section 8.2 discusses the broader implications of those findings and suggests directions for future research.

8.1 The Findings of this Dissertation

What is known about the history and basic structure of Gisuda Anii was presented in Chapter 1. Of particular interest in comparing Anii grammar to that of other African languages are the [ATR]-based vowel harmony system and the noun-class agreement system. The rest of the dissertation focused on the two main areas of study, temporal and aspectual semantics, and verbal tonology.

8.1.1 Temporal and Aspectual Semantics

Turning to the semantics of temporal and aspectual reference in Anii, the data and analysis presented in Chapters 2-4 reinforce the claim made by many authors (cf. Bohnemeyer and Swift 2004) that Aktionsarten, or lexical aspect, must be taken into account when analyzing systems of temporal and aspectual reference. Fieldwork-based semantics is still an emerging field, and a common practice has been to assume that a given clause in a fieldwork language has the same Aktionsart as its translation into more widely-spoken language such as English or French. One interesting aspect of the work presented here, then, is the demonstration in Chapter 2 that there are analytical advantages to finding language-internal diagnostics for Aktionsarten rather than relying on translations.
Another contribution of this dissertation is the analysis of Anii clauses that have no overt tense or aspect marking (‘unmarked clauses’). It was shown in Chapter 3 that these clauses have restricted temporal and aspectual interpretations, despite the fact that they are not marked with overt TAM marking. Aktionsarten influence these interpretations. Unmarked clauses with eventive predicates can have only past temporal reference and perfective aspectual reference, while the only possible interpretations for unmarked clauses with stative predicates is that they have past or present temporal reference and (episodic) imperfective aspectual reference.

Additionally, Chapter 3 demonstrated that the marker [tɩ] is an imperfective marker, denoting either habitual or episodic imperfective aspectual reference. [tɩ]-marked clauses with eventive predicates can have past or present (not future) temporal reference, and only imperfective (episodic or habitual) aspectual reference, while such clauses with stative predicates can have either past or present temporal reference, but only habitual aspectual reference. It was argued that the fact that [tɩ]-marked clauses with stative predicates cannot have episodic imperfective aspectual reference is due to a blocking effect. Specifically, since unmarked clauses with stative predicates have episodic imperfective aspectual reference, [tɩ]-marked clauses with stative predicates cannot have such an interpretation. There is no such blocking effect in clauses with eventive predicates because unmarked clauses with such predicates have perfective, not imperfective, aspectual reference.

Chapter 3 also briefly illustrated how future temporal reference is expressed in Anii, demonstrating that there are at least two elements that could contribute some type of future meaning to a clause. One is the marker [ti], and the second is a particular construction containing a certain type of subject marker and a grammatical high tone on the verb stem. The structure of this second element, which I termed an ‘irrealis construction’ because it is used in future and negative clauses, is investigated further in Chapter 7, but more data is needed to fully understand its semantics. At the end of the chapter, a formal analysis was proposed that can account for all the empirical generalizations about non-future perfective and imperfective clauses presented in Chapter 3, including the effects of Aktionsarten. Of particular interest in the analysis is the fact
that this analysis demonstrated that Deo’s (2009) proposal as to the cross-linguistic meaning of imperfective markers can successfully account for the Anii data, though it was developed using data from languages that are typologically quite different from Anii.

Chapter 4 investigated the meanings of several additional TAM markers. The marker [ʧéé] was shown to be a perfect marker that is compatible with past, present or future temporal reference. Building on the analysis of unmarked clauses given in Chapter 3, I then built up an analysis of [ʧéé]-marked clauses based on Ruppe’s (2012) modification of Dowty’s (1979) Extended Now analysis of the English perfect.

The documentation and analysis of the far-past marker, [bʊŋà], provided in Chapter 4, is of particular typological interest. Far-past markers in other languages have been variously claimed to be past tense markers, or even pluperfects (cf. Plungian and van der Auwera 2006), but this dissertation provides evidence that [bʊŋà] is neither a tense nor an aspect, but instead is a Temporal Remoteness Morpheme (TRM). The existence of TRMs is proposed in Cable (2013), who postulates that the past and future markers in Gĩkũyũ (Kikuyu) are different from tenses, aspects and modality/evidentiality markers, and yet that they do affect the temporal and aspectual interpretation of the clauses that they mark. Cable (2013) suggested that perhaps the multiple past and future markers characteristic of many African languages, which have been previously analyzed as tenses, may in fact be TRMs. The analysis presented here is an extension of Cable’s hypothesis that suggests that it is also possible for a language to have only one TRM, as is claimed to be the case for Anii.

Chapter 4 also briefly presented data on three other markers in order to give a fuller picture of the semantics of the Anii verb system. The first of these markers is [tì], which was shown to be present in clauses denoting either the expected culmination or the actual culmination of a series of eventualities. The marker [jè], on the other hand, is used (according to the evidence given in Chapter 4) when the speaker of a clause is insisting, contrary to the hearer’s expectations, that a given eventuality has occurred or will occur. The final marker that was presented in Chapter 4 is [nà], an imperfective marker, that is in complementary distribution with [tì], the imperfective marker analyzed in detail in Chapter 3. At the end of Chapter 4, some data on the distribution of the two imperfective
markers was provided. It was shown that [nà] is used with subject, object or verb focus, as well as in negative or future sentences, relative clauses, and in the discussion of hypothetical situations, and that [tì] is used to mark imperfective aspectual reference in other types of clauses.

Thus, the temporal and aspectual semantics of unmarked clauses and clauses marked with three TAM markers (i.e. [tì], [ʧɛɛ] and [bɔŋə]) were analyzed in depth in this dissertation. Additionally, a few other markers were described to provide a more complete picture of temporal and aspectual reference in Anii. This dissertation represents the first in-depth investigation and the first formal analysis of any aspect of the semantics of Anii. It is hoped that the data and analysis presented here will serve as a basis for future research on other aspects of Anii temporal and aspectual (and perhaps modal) semantics, as will be discussed in Section 8.2.

8.1.2 Syllable Structure and Tonology

With regard to tonology within the Anii verb complex, Chapters 5-7 of this dissertation documented and analyzed both lexical and grammatical tone patterns. One important aspect of the tone patterns presented here is that they reveal the unusual syllable structure of Anii. For example, as was illustrated in Chapter 5, all diphthongs in Anii are monomoraic, but there is a length contrast between monomoraic and bimoraic monophthongs. Though all diphthongs in Anii do end in high vowels, the difference in moraicity between diphthongs and monophthongs cannot be explained by analyzing the final element of the diphthongs as glides rather than vowels. This type of analysis was shown not to account for the Anii data because, as tone association data presented throughout this dissertation illustrates, there is a contrast in Anii between glides and high vowels even when they are in the same position in a syllable. This contrast was therefore argued to be featural, and Anii glides were shown to behave like other consonants, rather than like structural variants of high vowels.

Besides providing general background on tone analysis and data relating to syllable structure, Chapter 5 proposed a set of prosodification rules to account for Anii syllable structure. The typologically unusual behavior of Anii diphthongs led me to the
proposal that the difference between long and short phonemes should be represented as underlying moraicity not only for consonants (as has been common practice), but also for vowels. A standard assumption has been to assume that all vowels are either underlyingly moraic, or automatically project a mora, but such an analysis cannot account for the Anii facts. The proposal here instead suggests that the treatment of vowel and consonant length can be unified in a way that can account for languages like Anii as well as for more common ones in which all vowels are moraic. The question of how to account for syllabic consonants in this proposal, however, is still an open one, as will be discussed in Section 8.2.

Chapters 6 and 7 focused on the presentation and analysis of tone patterns on Anii verb stems, subject markers, TAM markers and negation markers. It was shown that there is striking consistency as to the type of tone pattern found in Anii verb complexes. That is, the patterns are shown to consist of only one H or two H tones, which link either to the second mora of a word, or to the first mora if for some reason the second mora is not available (either because there is not second mora, or because there is another H tone already there). All of the tone data presented in this dissertation can be accounted for with two association rules (one for the second mora attachment, and one for the first), and a handful of other rules, as discussed in the following paragraphs.

The beginning of Chapter 6 established some basic facts about tone and syllable weight in Anii. It was shown that Anii has a two-way surface contrast between H and L tones, but that only H tones are underlyingly present. Since none of the rules posited here ever make reference to the existence of phonological L tones in Anii, I assume that the apparent surface low tones are just the phonetic pronunciation of phonologically toneless TBUs. Additionally, the beginning of Chapter 6 illustrated that the mora is the TBU in Anii, and that coda consonants are not moraic at all unless they are word-final, in which case they are underlyingly non-moraic, but receive a mora in the course of the derivation. Data presented in Chapters 6 and 7 showed that word-final consonants become moraic after tone association, but before the application of other tonal rules.

The rest of Chapter 6 presented lexical tone on Anii verb stems, first demonstrating that there are two categories of verb stem in Anii, i.e. those that have a
lexical H tone and those that do not. The lexical tone patterns were illustrated on many types of verb stem (i.e. bimoraic, monomoraic, trimoraic and quadrimoraic, both vowel-final and consonant-final, and with stems that were (at least historically) lexically reduplicated). The H tone found on lexically H verb stems was shown to spread unboundedly rightwards. Chapter 6 also explored the interaction of verb stem lexical tone with the H tone that accompanies first- and second-person realis subject markers, but sometimes surfaces on a following TAM marker. The behavior of this subject marker tone illustrated that there are two different types of TAM markers in Anii, one set that cliticize to a preceding subject marker, and another set (those that historically may have been verb stems in their own right) that do not cliticize.

The phenomenon of downstep was also exemplified and analyzed in Chapter 6. Downstep in Anii occurs between adjacent H tones at a morpheme boundary. It was argued that the simplest analysis of downstep in the data presented here is that downstep is the phonetic pronunciation of adjacent H tones. In Chapter 7, it was shown that if there is more than one H tone within a single morpheme, there is a rule that creates a single doubly-linked H tone in the place of two singly-linked H tones. This type of rule (there are two proposed in this analysis) accounts for the fact that there is never downstep within morphemes in Anii.

Chapter 7 in general focused on grammatical tone patterns. The most common type of grammatical tone in Anii is a single H tone that likely has a meaning related to clause or verb phrase concatenation or subordination. This type of tone appears on verb stems in clauses marked with a particular type of TAM marker (i.e. those, like [ʧɛɛ] and [bʊŋà], that were (probably) historically verb stems in their own right), and in at least one type of subordinate clause. Another type of grammatical tone occurs in irrealis clauses, where it surfaces either on the verb stem, or on a TAM marker if one is present. This type of grammatical tone (referred to as the ‘irrealis tone’) is phonologically very similar to the tone marking concatenation or subordination, but there seem to be some small differences. The interaction of the irrealis tone with the tone of irrealis subject markers, and with various future morphemes was also explored in Chapter 7.
There is another grammatical tone pattern that was described in Chapter 7, namely the grammatical tone that is present in cases of grammatical reduplication. This reduplication construction occurs in clauses with contrastive verb focus. The grammatical tone pattern in this case was demonstrated to consist of two H tones, and to be subject to the same association rules and similar spreading and fusion rules as the grammatical H tones previously described. The grammatical tone of the subject markers also is not present in this construction. I know of no tone patterns within the verb complex that were not presented and analyzed here.

This dissertation represents the first study of tone in Anii to ever be carried out. Certain aspects of this study, such as an understanding of Anii syllable structure and the knowledge that Anii does not have specified L tones, are necessary background to any future tone study. It will be interesting to see how the other discoveries made here (for example, the patterns of tone attachment and the behavior of downstep) apply to tone in other aspects of Anii, such as noun phrases. The following section discusses how this work can serve as a basis for future research, on Anii or on other tone languages.

8.2 Broader Implications and Future Directions

Since Anii has been very little studied, there are many ways in which the data and analysis presented in this dissertation could be expanded on in order to gain a fuller understanding of the Anii language. Additionally, there are several aspects of the structure of Anii that were presented here that raise broader theoretical questions that should be addressed further in future research. This section discusses both of these aspects.

8.2.1 Future Directions in the Study of Anii

One clear future direction for linguistic analysis of the Anii language is the further study of the various constructions used in future clauses. More data on the semantics of the different elements of future clauses, as well as how they combine, will allow for a clearer understanding of how future temporal reference is expressed in Anii. Further
research will also clarify the semantics behind the different forms in what I have discussed here as a realis/irrealis distinction. Additionally, there are many other TAM markers that have not been analyzed in detail, including [tì], [jè], and many others. Analyzing such markers will likely lead to an understanding of the function of modality in Anii, since I suspect that many of them are modals.

Many of the uncertainties that remain about the analysis presented here are related to syntax. More data on the use and distribution of the imperfective marker [nà], for example, will allow for a clearer understanding of the role syntactic structure plays in the choice of imperfective marker. Another area where a fuller knowledge of syntax will allow for a more complete understanding of the language is in the study of the function of some of the grammatical H tones described above, specifically those whose meaning seems related to concatenation or subordination.

Of course, there are many areas of Anii outside of the verb complex that have not been adequately dealt with here. For example, the study of tone in clauses with full noun subjects and objects is an area of interest, as is the study of tone on nouns in general. And, of course, because there has been so little linguistic work on Anii, the study of any other area of the language would likely yield interesting insights, both into the structure of Anii, and potentially into linguistic theory in general.

8.2.2 Broader Implications

There are two main areas in which the data presented here is of particular interest with regard to linguistic theory in general. As mentioned above, the analysis of [bʊŋà] as being a past TRM, and the only past marker in Anii, is an unusual analysis, but one that may work for other languages other than Anii. There are many markers in many languages that have been claimed to be past tenses, and yet seem to be different in some way from ‘standard’ tenses (cf. Plungian and van der Auwera 2006, Cable 2014). What the analysis of [bʊŋà] presented here illustrates is that it is important to investigate the semantics of such markers in detail, in order to determine whether they are in fact tenses—and in order to better understand what tenses do, and what options are available in human language for expressing the time at which an eventuality occurred.
Regarding syllable weight, the possibility of uniting the analysis of long vowels and geminate consonants is an intriguing one. Recall that in Anii, vowel length must be treated as underlying moraicity, and not every vowel projects a mora. Since consonant length is also often treated this way (cf. Baal, Odden and Rice 2012), it is tempting to suggest, as I have done above, that phoneme length should be analyzed cross-linguistically as being related to underlying moraicity. The one issue with this type of analysis as proposed here is that it does not differentiate between geminate consonants and syllabic consonants. Anii does not have geminate consonants, but, as has been shown above, it does have syllabic consonants, which must be analyzed as being moraic at a very early stage in the derivation, since they project syllables and are available for tone association. In a language with both geminate consonants and moraic consonants, it is possible that both types of consonants should be analyzed as being underlyingly moraic, and the difference between them be related to syllable projection.

Anii is not a good test case for the question of the prosodification of consonants, since Anii does not have geminate consonants, but what the analysis of Anii does show is that the details of prosodification should not be taken for granted. That is, the cross-linguistic study of the formal mechanisms of moraification and syllabification is an important one. Future work stemming from this dissertation, then, could be testing whether the application of the prosodification analysis proposed here is possible for other languages, particularly languages with geminate consonants.

Since there has been very little previous linguistic study of Anii, only very limited data on any aspect of Anii grammar was available to linguists before this study. The fact that the data presented here has potentially wide-ranging implications for certain aspects of linguistic theory reinforces the importance of linguistic fieldwork. If linguistic theory is intended to account for the whole range of human language, it cannot be developed without detailed documentation of the widest variety of languages possible. To that end, this dissertation has provided one more small piece in the complicated puzzle of understanding human language.


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APPENDIX A:
List of Anii Clause Types

This appendix lists the basic elements of the clause types that are analyzed in this dissertation, as well as the possible word orders. Since this dissertation does not discuss clauses with full nouns as subjects, or with direct objects, I leave out those clause types. As was discussed in Section 1.5, the basic word order in Anii is SVO, and I know of no exceptions in main clauses. Subordinate clauses are not addressed here. First, I will list all the elements of the clauses, including two groups of subject markers (realis and irrealis, see Section 3.3.1 for discussion), two groups of TAM markers (cliticizing and non-cliticizing, see Section 6.4 for discussion), negation markers and verb stems (not listed). Most of the possible combinations are listed, but this list in not intended to be exhaustive. Some examples of clauses with TAM markers not discussed elsewhere in the dissertation are towards the end of the appendix, followed by general clause schemata.

Clause Elements:

Subject Markers:

<table>
<thead>
<tr>
<th>Group 1 (realis)</th>
<th>Group 2 (irrealis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ń 1.SG</td>
<td>má 1.SG</td>
</tr>
<tr>
<td>ó 2.SG</td>
<td>á 2.SG</td>
</tr>
<tr>
<td>à 3.SG</td>
<td>á 3.SG</td>
</tr>
<tr>
<td>gì 1.PL</td>
<td>gì 1.PL</td>
</tr>
<tr>
<td>i 2.PL</td>
<td>i 2.PL</td>
</tr>
<tr>
<td>bà 3.PL</td>
<td>bà 3.PL</td>
</tr>
</tbody>
</table>

TAM Markers(parentheses indicate markers not discussed in detail in this dissertation)

<table>
<thead>
<tr>
<th>Cliticizing (c.)</th>
<th>Non-cliticizing (n.c.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>tì IMPF</td>
<td>bònà PST (‘far past’)</td>
</tr>
<tr>
<td>nà IMPF</td>
<td>gèé PERF (‘perfect’)</td>
</tr>
<tr>
<td>tì ‘culmination’</td>
<td>jè ‘insistance’</td>
</tr>
<tr>
<td>tì FUT</td>
<td>(kòò) ‘again’</td>
</tr>
<tr>
<td>(tà) if?</td>
<td>(fòò) emphasis?</td>
</tr>
</tbody>
</table>

etc.
Negation Markers

kV (first negation marker, sentence initial)
ná (second negation marker, sentence final)

Notes

- All the sentences given below use the lexically toneless verb stem fōbà, ‘change’
- Each type of clause is given with a H-toned and a toneless subject marker. Only one possible translation is given for each.
- Positive clauses and their corresponding negations are linked by sharing the same number. There are some cases where different positive clauses have the same negation.

Anii Clause Structures With Markers Analyzed in this Dissertation

Positive Clauses

Realis

1. ń fōbà  ‘I changed.’
2. à fōbà  ‘S/he changed.’
3. ń tī fōbà  ‘I am changing.’
4. à tī fōbà  ‘S/he is changing.’
5. ń ’ tī fōbà  ‘I finally changed.’
6. à tī fōbà  ‘S/he finally changed.’
7. ń bōnjā fōbā  ‘I changed long ago.’
8. à bōnjā fōbā  ‘S/he changed long ago.’
9. ń ḏē e fōbā  ‘I have changed.’
10. à ḏē e fōbā  ‘S/he has changed.’
11. ń jē fōbā  ‘I even changed.’
12. à jē fōbā  ‘S/he even changed.’
13. ń bōnjā tī fōbā  ‘I was changing long ago.’
14. à bōnjā tī fōbā  ‘S/he was changing long ago.’
15. ń ḏē e tī fōbā  ‘I had been changing.’
16. à ḏē e tī fōbā  ‘S/he had been changing.’
17. ń bōnjā tī fōbā  ‘I finally changed long ago.’
18. à bōnjā tī fōbā  ‘S/he finally changed long ago.’
19. ń ḏē e bōnjā fōbā  ‘I had changed long ago.’
20. à ḏē e bōnjā fōbā  ‘S/he had changed long ago.’
21. ń ḏē e bōnjā tī fōbā  ‘I had been changing long ago.’
22. à ḏē e bōnjā tī fōbā  ‘S/he had been changing long ago.’
23. ń nā fōbā  ‘I changed.’
24. à nā fōbā  ‘S/he changed.’
Irrealis

25. má fóbá  ‘May I change.’
26. à fóbá  ‘May s/he change.’
27. má nàà fóbá  ‘May I be changing.’
28. à nàà fóbá  ‘May s/he be changing.’
29. má tí fóbá  ‘May I eventually change.’
30. à tí fóbá  ‘May s/he eventually change.’
31. má tí ná fóbá  ‘May I eventually be changing.’
32. à tí ná fóbá  ‘May s/he eventually be changing.’
33. ǹ tí ‘má fóbá  ‘I will change.’
34. à tà à fóbá  ‘S/he will change.’
35. ǹ tí ‘má náà fóbá  ‘I will be changing.’
36. à tà à náà fóbá  ‘S/he will be changing.’
37. ǹ tí ‘má tí fóbá  ‘I will eventually change.’
38. à tà à tí fóbá  ‘S/he will eventually change.’
39. ǹ tí ‘má tí ná fóbá  ‘I will eventually be changing.’
40. à tà à tí ná fóbá  ‘S/he will eventually be changing.’
41. ǹ tí ‘má jéè fóbá  ‘I will have changed.’
42. à tà à jéè fóbá  ‘S/he will have changed.’

Negative Clauses (all irrealis)

1. kí má fóbá ‘ná  ‘I did not change.’
2. k à fóbá ‘ná  ‘S/he did not change.’
3. kí má nàà fóbá  ‘I am not changing.’
4. k à ná fóbá ná  ‘S/he is not changing.’
5. kí má tí fóbá ná  ‘I finally did not change.’
6. k à tí fóbá ná  ‘S/he finally did not change.’
7. kí má bónà fóbá ‘ná  ‘I did not change long ago.’
8. k à bónà fóbá ‘ná  ‘S/he did not change long ago.’
9. kí má jéè fóbá ‘ná  ‘I have not changed.’
10. k à jéè fóbá ‘ná  ‘S/he has not changed.’
11. kí má jé fóbá ‘ná  ‘I did not even change.’
12. à jé fóbá ‘ná  ‘S/he did not even change.’
13. kí má bónà ná fóbá ná  ‘I was not changing long ago.’
14. k à bónà ná fóbá ná  ‘S/he was not changing long ago.’
15. kí má jéè ná fóbá ná  ‘I had not been changing.’
16. k à jéè ná fóbá ná  ‘S/he had not been changing.’
17. kí má bónà tí fóbá ná  ‘I did not finally change long ago.’
18. k à bónà tí fóbá ná  ‘S/he did not finally change long ago.’
19. kí má jéè bónà fóbá ‘ná  ‘I had not changed long ago.’
20. k à jéè bónà fóbá ‘ná  ‘S/he had not changed long ago.’
21. kí má jéè bónà ná fóbá ná  ‘I had not been changing long ago.’
22. k à jéè bónà ná fóbá ná  ‘S/he had not been changing long ago.’
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>25. kɨ má fóbá ná</td>
<td>‘May I not change.’</td>
<td></td>
</tr>
<tr>
<td>26. kà à fóbá ná</td>
<td>‘May s/he not change.’</td>
<td></td>
</tr>
<tr>
<td>27. kɨ má ná fóbá ná</td>
<td>‘May I not be changing.’</td>
<td></td>
</tr>
<tr>
<td>28. kà à ná fóbá ná</td>
<td>‘May s/he not be changing.’</td>
<td></td>
</tr>
<tr>
<td>29. kɨ má tɩ fóbá ná</td>
<td>‘May I not eventually change.’</td>
<td></td>
</tr>
<tr>
<td>30. kà à tɩ fóbá ná</td>
<td>‘May s/he not eventually change.’</td>
<td></td>
</tr>
<tr>
<td>31. kɨ má tɩ nà fóbá ná</td>
<td>‘May I not eventually be changing.’</td>
<td></td>
</tr>
<tr>
<td>32. kà à tɩ nà fóbá ná</td>
<td>‘May s/he not eventually be changing.’</td>
<td></td>
</tr>
<tr>
<td>33. kɨ má fóbá ná</td>
<td>‘I will not change.’</td>
<td></td>
</tr>
<tr>
<td>34. kà à fóbá ná</td>
<td>‘S/he will not change.’</td>
<td></td>
</tr>
<tr>
<td>35. kɨ má ná fóbá ná</td>
<td>‘I will not be changing.’</td>
<td></td>
</tr>
<tr>
<td>36. kà à ná fóbá ná</td>
<td>‘S/he will not be changing.’</td>
<td></td>
</tr>
<tr>
<td>37. kɨ má tɩ fóbá ná</td>
<td>‘I will not eventually change.’</td>
<td></td>
</tr>
<tr>
<td>38. kà à tɩ fóbá ná</td>
<td>‘S/he will not eventually change.’</td>
<td></td>
</tr>
<tr>
<td>39. kɨ má tɩ nà fóbá ná</td>
<td>‘I will not eventually be changing.’</td>
<td></td>
</tr>
<tr>
<td>40. kà à tɩ nà fóbá ná</td>
<td>‘S/he will not eventually be changing.’</td>
<td></td>
</tr>
<tr>
<td>41. Data unavailable</td>
<td>‘I will not have changed.’</td>
<td></td>
</tr>
<tr>
<td>42. Data unavailable</td>
<td>‘S/he will not have changed.’</td>
<td></td>
</tr>
</tbody>
</table>

**Extra Examples**

**Cliticizing TAM**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ñ tá fóbá...</td>
<td>‘If I change...’</td>
<td></td>
</tr>
<tr>
<td>ì tá fóbá...</td>
<td>‘If you (sg) change...’</td>
<td></td>
</tr>
<tr>
<td>à tá fóbá...</td>
<td>‘If s/he changes...’</td>
<td></td>
</tr>
<tr>
<td>gi tá fóbá...</td>
<td>‘If we change...’</td>
<td></td>
</tr>
<tr>
<td>i tá fóbá...</td>
<td>‘If you (pl) change...’</td>
<td></td>
</tr>
<tr>
<td>bà tà fóbá...</td>
<td>‘If they change...’</td>
<td></td>
</tr>
</tbody>
</table>

**Non-Cliticizing TAM**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ñ kòó fóbá</td>
<td>‘I changed again.’</td>
<td></td>
</tr>
<tr>
<td>ì kòó fóbá</td>
<td>‘You (sg) changed again.’</td>
<td></td>
</tr>
<tr>
<td>à kòó fóbá</td>
<td>‘S/he changed again.’</td>
<td></td>
</tr>
<tr>
<td>gi kòó fóbá</td>
<td>‘We changed again.’</td>
<td></td>
</tr>
<tr>
<td>i kòó fóbá</td>
<td>‘You (pl) changed again.’</td>
<td></td>
</tr>
<tr>
<td>bà kòó fóbá</td>
<td>‘They changed again.’</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ñ ŋoó fóbá</td>
<td>‘I really changed.’ (?)</td>
<td></td>
</tr>
<tr>
<td>ì ŋoó fóbá</td>
<td>‘You (sg) really changed.’ (?)</td>
<td></td>
</tr>
<tr>
<td>à ŋoó fóbá</td>
<td>‘S/he really changed.’ (?)</td>
<td></td>
</tr>
<tr>
<td>gi ŋoó fóbá</td>
<td>‘We really changed.’ (?)</td>
<td></td>
</tr>
<tr>
<td>i ŋoó fóbá</td>
<td>‘You (pl) really changed.’ (?)</td>
<td></td>
</tr>
<tr>
<td>bà ŋoó fóbá</td>
<td>‘They really changed.’ (?)</td>
<td></td>
</tr>
</tbody>
</table>
ń ýí fóbá  ‘I changed anyway.’ (?)
ú ýí fóbá  ‘You (sg) changed anyway.’ (?)
à ýí fóbá  ‘S/he changed anyway.’ (?)
gí ýí fóbá  ‘We changed anyway.’ (?)
i ýí fóbá  ‘You (pl) changed anyway.’ (?)
bà ýí fóbá  ‘They changed anyway.’ (?)

Basic Schemata for Anii Clauses:

Realis:
Grp 1 subj. - (TAM n.c.) - (TAM n.c.) - (TAM c.) - ((TAM c.)) - stem
Note: I have never seen more than three TAM markers in one clause, and I have
no examples with more than one cliticizing TAM marker in a realis clause, which
is why the last TAM has double parentheses. There do seem to be set orders
between [ʧèé] and [bʊŋà], perhaps because [bʊŋà] is a TRM. Relative orders
between other non-cliticizing markers are unknown.

Irrealis:
Basic:
Grp 2 subj - ((TAM n.c.)) - (TAM c.) - (TAM c.) - stem
Note: The imperfective is always the closest marker to the stem.

Future:
Grp. 1 subj - (TAM c. (fut)) - Basic Irrealis Order

Negative:
Neg - Basic Irrealis Order - Neg
APPENDIX B:
The Semantics Behind Noun Class Categories

This appendix presents a brief discussion of the possible semantic basis for the classification of Anii noun roots into different noun classes. The semantic categories presented here almost certainly have a historic basis, though further research is needed to determine whether or not these semantic categories have any reality in the minds of modern Anii speakers. Note also that, since some of the categories refer to the physical properties of objects (e.g. being pointy, being flat, etc.), the classification of abstract nouns must involve some level of metaphor. The classification is discussed class by class.

Singular Noun Classes:

Class A: This is the most semantically coherent class, referring exclusively to people. It is also a very small class. Examples include:

- ù-kònò ‘corpse’
- ù-pì ‘child’
- ù-sàmp rè ‘woman’
- ù-sórò ‘person’
- ù-wòr ‘neighbor/acquaintance’

Class Ǝ: Mostly, this class includes nouns referring to people or animals:

- à-làmà ‘scorpion’
- à-fùmì ‘farmer’
- à-ná ‘cow’
- à-nàrà ‘powerful person’
- à-rè ‘man’
- à-sàná ‘stranger/visitor’
- à-sàw ‘hawk’
- à-shá ‘dog’
- ð-súkò ‘horse’
- à-ʧìrì ‘chicken’
The only noun of class Ǝ that I know of that does not refer to a person or animal is [à-ŋɔɩɩ], which means ‘moon’ or ‘month’.

Class B: This class consists almost entirely of consonant-initial loanwords from other languages, including English, French, Arabic and Hausa. I include in the list here only those roots where I know the source of the borrowing or that appear to be borrowed because they are the only non-compound noun roots in Anii containing both [+ATR] and [-ATR] vowels (suggesting they are borrowed):

- bɔŋŋi ‘cash register/cashier’ (from English ‘bench’)
- bɔl ‘ball’ (from English ‘ball’)
- fɔtɔlɔ ‘lamp’
- gbɔgitii ‘bucket/pail’ (from English ‘bucket’)
- gɔtɔ ‘ditch’ (from English ‘gutter’)
- dɔŋgiri ‘mosque’ (unknown origin, known to be borrowed)
- kɛkɛ ‘bicycle’ (from Hausa ‘keke’)
- lɔriri ‘vehicle’ (from English ‘lorry’)
- sɔdɔ ‘soldier’ (from English ‘soldier’)
- sɔɔ ‘bucket’ (from French ‘seau’)

It is likely that all the nouns in this category are borrowed (though the origins of the borrowings are not always known), and new borrowings are put in class B.

Class C: The closest I can come to positing a semantic category for this class is to say that many words of class C refer to things that are arguably enclosures or containers of some sort, or refer to something that has set limits:

- gɔ-bo ‘pot’
- gɔ-falɔ ‘house/compound’ (traditionally enclosed by a wall)
- gɔ-jalɔ ‘boundary/limit/end’
- gɔ-kɔ ‘courtyard’
- gɔ-nɔ ‘mouth’
- gɔ-siwà ‘calebash’ (traditionally used to carry liquids)
- gɔ-jë ‘basket’
- gɔ-tinà ‘country’ (i.e. the land belonging to a particular group)
- gɔ-tófi ‘sandal’
- gɔ-wàrà ‘field’

There are many words in class C, however, for which it is hard to imagine how they are related to the idea of enclosures or containers, for example:

- gɔ-tii ‘hornbill’ (a bird species)
- gɔ-jálì ‘antelope species (small)’
- gɔ-kɔi ‘insect’
- gɔ-léi ‘word/speech’
Class D: Many of the words in this class refer to objects that are in some way pointy, often fat and pointy. This is one of the most semantically transparent classes:

- gi-dànò  ‘tongue’
- gi-dë  ‘yam’
- gi-kàmpì  ‘vaccinations/shots’
- gi-kùnú  ‘okra’
- gi-ná  ‘grass species’
- gi-jìnè  ‘eye’
- gi-pë  ‘stick’
- gi-rò  ‘sorghum’
- gi-sànà  ‘feather/body hair’
- gi-ʧá  ‘bean’

There are certain bodily organs included in this class that may be somewhat pointy, at least in some animals (e.g. [gi-fòlù], ‘heart’ and [gi-pàrì], ‘kidney’). However, there are many words in this class where the meaning of pointiness is not transparently present, though for some such examples, the classification may have come from being closely associated with pointy things:

- gi-djòto  ‘captivity/slavery’
- gi-kàrò  ‘language’
- gi-fò  ‘vegetable’
- gi-jìmì  ‘bile’
- gi-ká  ‘married woman/wife’
- gi-kùlò  ‘married man/husband’

Class E: Many of the nouns that are members of class E refer to long, thin entities (that are not necessarily pointy):

- ü-njìʧá  ‘path’
- ü-bú  ‘snake’
- ü-dò  ‘neck’
- ü-fà  ‘pocket knife/small knife’
- ü-fò  ‘partridge’ (a small bird with a long neck and long tail)
- ü-kèj  ‘foot’
- ü-lò  ‘rope’
- ü-pèlì  ‘road’
- ü-tó  ‘rain’ (i.e. water in a long, thin form)
- ü-tònú  ‘fire/gun’

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The words for rodents with long tails (e.g. [ù-fəlɔ], ‘mouse’ and [ù-ʃɪrɛ], ‘rat’) are also in this category, perhaps because of their tail shape, as are many animals with large horns (e.g. [ù-kò], ‘buffalo’, [ù-ʃɛ], ‘goat’, and [ù-ʃɛlɛ], ‘antelope species (large’)). There are also many nouns in this class, however, that do not transparently refer to long, thin entities (at least not without more knowledge of the cultural context):

- ʊ-ʃɪlɛ ‘sun’
- ʊ-ʃɪlɛ ‘day’

It should also be noted that class E is the class into which one type of nominalized verb, derived from an extremely productive process, is placed (e.g. [kʊɩr] means ‘weave’, and [ʊɩ-ʃɪlɛ] means ‘the act of weaving’)

**Class E:** This class appears to contain many flat entities:

- ɡʊɩ-bɔ ‘leaf/paper’
- ɡʊɩ-dɛɛ ‘field of yamhills’
- ɡʊɩ-fə ‘fishing net/fish trap’
- ɡʊɩ-ʃɛ ‘sun’

Interestingly, there are also a lot of tree-related words in this class, though it is not clear what the semantic connection between trees and flat things might be:

- ɡʊɩ-dà ‘forest’
- ɡʊɩ-fɔlú ‘bamboo’
- ɡʊɩ-gbá ‘Borassus palm tree’ (very tall palms)
- ɡʊɩ-jó ‘tree’
- ɡʊɩ-pà ‘palm nut palm tree’
- ɡʊɩ-rɛ ‘locust bean tree’ (Parkia biglobosa)
- ɡʊɩ-fɛ ‘shea tree’ (Vitellaria paradoxa)

There are also many words in this class whose relation to either trees or flat things is not immediately apparent:

- ɡʊɩ-dà ‘dream’
- ɡʊɩ-dʒɔ ‘gift’
gù-fàlà  ‘merchandise’
gù-fò  ‘pen’ (e.g. for chickens or cows)
gù-kùlù  ‘hole’
gù-ŋònò  ‘older sibling’
gù-pirá  ‘arm’
gù-rèè  ‘giraffe’
gù-rò  ‘rainy season’
gù-sòrò  ‘friendship’
gù-ʧè  ‘termite’
gù-ʧèlé  ‘jealousy’

**Class F:** Class F nouns seem to refer largely to round objects. This is another class where the semantic meaning (roundness in this case) is very strong:

m-bó  ‘yamhill’
n-fú  ‘hat’
ŋ-káw  ‘jar’
ŋ-kiwà  ‘bone’
ŋ-kú  ‘room’ (traditionally round huts)
n-pínà  ‘piece of poop/turd’
n-sílá  ‘egg’
n-súlò  ‘gourd’
ŋ-ʧè  ‘stomach (internal organ)’
ŋ-ʧèlé  ‘penis’
n-tò  ‘pounded yams’ (usually served in balls)

Though many class F nouns are very obviously round, there are a few words of this class which do not transparently refer to round entities:

m-póò  ‘folktale’
ŋ-kímá  ‘sauce’
ŋ-kòlí  ‘proverb’
ŋ-kpálá  ‘time (i.e. instance)’
ŋ-kònà  ‘idol/fetish’
n-sonò  ‘goodness’

**Class G:** This class basically contains mass nouns, I believe, though more analysis is needed to establish this for sure. All the examples found so far are here (and it is possible that in fact class G and class Û are one class):

bù-kò  ‘stuff’
bù-fì  ‘oil’
bù-ʧè  ‘death’
bù-tò  ‘water’
bù-tòŋà  ‘salt’
Plural Noun Classes:

**Class Y:** This class is only used for people, comparable to the semantics of class A:
- bà-djàlà ‘small people’
- bò-djòtò̀ rè ‘captives’ (compound noun)
- bà-fùmì ‘farmers’
- bè-rè ‘men’
- bà-sànà ‘strangers/visitors’
- bò-kònò ‘corpses’
- bà-pì ‘children’
- bà-sò̀rò ‘people’
- bò-wò̀r ‘neighbor/acquaintance’

**Class W:** This class contains two basic categories. First, it is used to refer to many types of animal in the plural. Second, the plurals of loanwords are generally in this category. The first list is of animals:
- i-bò̀rì ‘animals’
- i-bò̀rò ‘elephants’
- i-kònà ‘monkeys’
- i-ná ‘cows’
- i-ràmà ‘ewes’
- i-sàw ‘hawks’
- i-súkò ‘horses’
- i-fùrì ‘chickens’
- i-sì̀ ‘dogs’
- i-tò̀njà ‘guinea fowl (pl)’

As mentioned above, class W also includes the plurals of loanwords:
- i-bò̀nò ‘cash registers/cashiers’ (from English ‘bench’)
- i-bò̀l ‘balls’ (from English ‘ball’)
- i-fò̀tòlà ‘lamps’
- i-gbò̀gìtì ‘buckets/pails’ (from English ‘bucket’)
- i-gò̀tò ‘ditches’ (from English ‘gutter’)
- i-dì̀ngì̀ ‘mosques’ (unknown origin, known to be borrowed)
- i-kèkè ‘bicycles’ (from Hausa ‘keke’)
- i-lò̀rì ‘vehicles’ (from English ‘lorry’)
- i-sò̀ ‘soldiers’ (from English ‘soldier’)
- i-sò ‘buckets’ (from French ‘seau’)

**Class Ù:** As mentioned in Chapter 1, the nouns in class Ù universally (according to my knowledge) have singulars in class C. Thus, the same semantic generalizations apply to class Ù as to class C, i.e. many nouns of class Ù refer to enclosures or containers.

196This is the only noun I know of where the noun class marker is /be-/, it is likely an irregular form of /ba-/, perhaps a historical remnant form of some kind.
bù-bó  ‘pots’
bö-fálá  ‘houses/compounds’ (traditionally enclosed by a wall)
bö-jálá  ‘boundaries/limits/ends’
bù-kà  ‘courtyards’
bù-nó  ‘mouths’
bù-siwá  ‘calebashes’ (traditionally used to carry liquids)
bù-ʃɛ  ‘baskets’
bù-tínà  ‘countries’ (i.e. the lands belonging to particular groups)
bù-tèli  ‘sandals’
bù-wàrà  ‘fields’

Many nouns of class Õ, however, do not refer to enclosures in any way:
bù-tii  ‘hornbill’ (a bird species)
bù-jálí  ‘anteelope species (small)’
bù-kɔi  ‘insect’
bù-lej  ‘word/speech’
bù-ŋà  ‘mirror’
bù-pùi  ‘old woman’

**Class U:** Nouns of class U generally have singulars in classes Ð and E, meaning that class U generally includes nouns referring to long and thin and/or pointed things:
i-ɗànʊ  ‘tongues’
i-ʤè  ‘yams’
i-kúnú  ‘okra pods’
i-ná  ‘grass blades (of a certain species)’
i-pé  ‘sticks’
i-ɲɛfá  ‘paths’
i-bú  ‘snakes’
i-dò  ‘necks’
i-lò  ‘ropes’
i-pèli  ‘roads’

As with most noun classes, there are some nouns that do not easily fit the general semantic profile of class Õ:
i-kɔrő  ‘languages’
i-fà  ‘vegetables’
i-fà  ‘maternal uncles’
i-feló  ‘bags/purses/pockets’
i-làmò  ‘medicines’
i-làndá  ‘cheeks’
**Class T:** Nouns in class T generally have singulars in classes Ė and F, meaning the nouns in this class generally refer to round and/or flat things (or are related to trees):

- à-bó ‘leaves/papers’
- à-põò ‘teeth’
- à-ɲàntò ‘dishes’
- à-ɲé ‘hands’
- à-mànà ‘walls’
- à-pà ‘palm nut palm trees’
- à-káw ‘jars’
- à-kiwà ‘bones’
- à-silá ‘eggs’
- ò-sulò ‘gourds’

If nouns of class G can be coerced into a plural reading, the plurals are in class T:

- ò-fi ‘kinds of oil’
- ò-tó ‘bodies of water’
- ò-tùnà ‘kinds of salt’

There are, however, certain nouns of class T that do not transparently refer to round or flat entities:

- à-dà ‘dreams’
- à-kúlù ‘holes’
- à-ɲ’onò ‘older siblings’
- à-pirá ‘arms’
- à-pàrà ‘folktales’
- à-kìmà ‘saucers’
- à-kóli ‘proverbs’

As this Appendix has shown, there is some semantic basis for the classification of Anii nouns, but it is likely that this is a historical fact, not a feature of the modern language. However, more research into cultural views of certain abstract nouns, as well as more in-depth linguistic research is needed to fully analyze this system.
This appendix provides a list of the 50 predicates which were used as test cases to determine if a given diagnostic for Aktionsarten is useful in Anii. The predicates are divided into three sections: those whose English translations are stative, those whose English translations are atelic events, and those whose English translations are telic events. This structure reflects the original organization of the data presented to consultants, and allows for comparison between the Aktionsarten of the Anii predicates and that of their English counterparts.

Data regarding whether or not a given predicate is acceptable in a given construction is also included. The column headed ɨ laʃɩ m represents the construction “à lèè àmọ ɨ tɨ laʃɩ ɨ wàà má X”, meaning ‘He forced me to X’. If a given predicate was judged acceptable in this construction in all cases, that is marked with the symbol √. If my consultants disagreed as to whether that predicate is acceptable, that is marked with the symbol ?. If the consultants agreed that a given predicate is not acceptable in this construction, it is marked with #. The word ‘inchoative’ means that the predicate is acceptable, but has inchoative meaning. Recall from Chapter 2 that eventive predicates are acceptable in this construction, but stative predicates are not.

The column headed dùr represents the construction “ní X dûr”, meaning ‘I completely finished Xing”. In this case, the same symbols are used, with the addition of using the word ‘multiple’. This indicates that a given predicate is only acceptable in this construction in a context in which there are multiple instances of the eventuality denoted by that predicate. As discussed in Chapter 2, stative and atelic eventive predicates are acceptable in this construction, but telic predicates are only acceptable in cases where there are multiple instances of the event.
The predicates are given here with their stand-alone surface tone transcriptions, and an English translation is provided, as well.

**Predicates whose English translation is stative**

<table>
<thead>
<tr>
<th>Predicate</th>
<th>English Translation</th>
<th>tìlìfi</th>
<th>dùr</th>
</tr>
</thead>
<tbody>
<tr>
<td>dʒiú</td>
<td>be black/dark</td>
<td>inchoative</td>
<td>√</td>
</tr>
<tr>
<td>dʒibá</td>
<td>be small</td>
<td>#</td>
<td>√</td>
</tr>
<tr>
<td>fàná 197</td>
<td>be enough</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>kàŋkir</td>
<td>be hard/strong</td>
<td>#</td>
<td>√</td>
</tr>
<tr>
<td>kilá</td>
<td>be short</td>
<td>#</td>
<td>?  198</td>
</tr>
<tr>
<td>kim</td>
<td>be red/light-colored</td>
<td>inchoative</td>
<td>√</td>
</tr>
<tr>
<td>kò</td>
<td>be dry</td>
<td>#  199</td>
<td>√</td>
</tr>
<tr>
<td>làmá</td>
<td>be tall</td>
<td>#</td>
<td>√</td>
</tr>
<tr>
<td>siŋkilà</td>
<td>be fat</td>
<td>#</td>
<td>√</td>
</tr>
<tr>
<td>tsóm</td>
<td>be good/beautiful</td>
<td>#  200</td>
<td>√</td>
</tr>
<tr>
<td>gēkpé</td>
<td>be wet</td>
<td>#</td>
<td>√</td>
</tr>
<tr>
<td>wòdà gitám</td>
<td>have money</td>
<td>#</td>
<td>?</td>
</tr>
</tbody>
</table>

All of these predicates are unacceptable in the tìlìfi construction unless they can be coerced into an inchoative meaning.

For most consultants, all of these predicates except for fàná, ‘be enough’, which is syntactically strange, are acceptable in the dùr construction.

Of the two where there were questions:

The uncertainty about kilá, ‘be short’, was that for some consultants, it could only be used mockingly.

For the predicate wòdà gitám, ‘have money’, consultants did not agree on whether it was acceptable or not in the dùr construction.

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197 The unacceptability of forms with this predicate may be due to syntactic rather than semantic issues, since this predicate seems to require specific syntactic structures. More research is needed on this topic.

198 The only acceptable context that my consultants came up with here is in mocking someone.

199 One consultant suggested that an inchoative reading might be possible with regard to clothing here, but he was not sure.

200 Possibly acceptable in the sense of ‘be good’, never for any consultants in the sense of ‘be beautiful’.

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Predicates whose English translation is atelic

<table>
<thead>
<tr>
<th>Predicate</th>
<th>English Translation</th>
<th>tilāfì</th>
<th>dūr</th>
</tr>
</thead>
<tbody>
<tr>
<td>bòdo</td>
<td>climb</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>ḥā ḥā</td>
<td>eat (food)</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>ḥām</td>
<td>jump</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>fāná</td>
<td>show/teach</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>fòl</td>
<td>sleep/go to sleep</td>
<td>√</td>
<td>#</td>
</tr>
<tr>
<td>jàlá</td>
<td>sell</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>jèlá àkúrò</td>
<td>sell cloth(s)</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>kòlò</td>
<td>cough</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>lò</td>
<td>speak</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>nòn</td>
<td>write</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>pémpéng</td>
<td>clean/straighten</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>sàrà ḥìŋgìrí nì</td>
<td>walk in/into the mosque</td>
<td>√</td>
<td>?</td>
</tr>
<tr>
<td>fèr</td>
<td>sweep</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>fìw</td>
<td>run</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>fàáriì</td>
<td>bother</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>pàrà</td>
<td>glue/paste</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

All of these predicates are acceptable in the tilāfì construction.

In the dūr construction:

There was some confusion with the predicate sàrà ḥìŋgìrí nì, ‘walk in/into the mosque’, but this may be related to multiple meanings of nì, ‘in/into’.

The interesting predicates here are fòl, ‘sleep’ and ḥām, ‘jump’. If these predicates were in fact atelic in Anii, they would be expected to be acceptable in the dūr construction.

I posit that fòl actually means ‘go to sleep’, not ‘sleep’, as discussed in Chapter 2.

As for ḥām, I put the English predicate ‘jump’ in the atelic category, because I thought of it as sort of ‘jump up and down’, a repeated action. The Anii predicate ḥām seems to refer to only one jump (in fact, it can be reduplicated to ḥām ḥām, which means ‘jump up and down’). Unfortunately, I have not yet tested ḥām ḥām in these Aktionsart diagnostics to see if it behaves as expected for an atelic predicate.

Some consultants had a hard time with the real world possibility of this—they just generally thought it was strange to just walk around inside a mosque, particularly since nì can also mean ‘into’, which was a much more natural interpretation.

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201 Some consultants had a hard time with the real world possibility of this—they just generally thought it was strange to just walk around inside a mosque, particularly since nì can also mean ‘into’, which was a much more natural interpretation.


### Predicates whose English translation is telic

<table>
<thead>
<tr>
<th>Predicate</th>
<th>English Translation</th>
<th>tilàfì</th>
<th>dür</th>
</tr>
</thead>
<tbody>
<tr>
<td>bòdo gòbònò</td>
<td>climb a mountain</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>dà gàtó</td>
<td>cross/leap across a stream</td>
<td>√</td>
<td>?</td>
</tr>
<tr>
<td>dür</td>
<td>extinguish</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>dʒòm lòkò ní</td>
<td>jump into a well</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>fàŋá biikí</td>
<td>show a pen</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>fídá</td>
<td>fall</td>
<td>√</td>
<td>#</td>
</tr>
<tr>
<td>fòbà</td>
<td>change</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>jàlá ʃìkúrò ñdé</td>
<td>sell this cloth</td>
<td>√</td>
<td>multiple&lt;sup&gt;202&lt;/sup&gt;</td>
</tr>
<tr>
<td>kilá gásáná</td>
<td>shorten a journey</td>
<td>√</td>
<td>#</td>
</tr>
<tr>
<td>kpá&lt;sup&gt;203&lt;/sup&gt;</td>
<td>arrive</td>
<td>√</td>
<td>#</td>
</tr>
<tr>
<td>lùgò gitání</td>
<td>hide money</td>
<td>√</td>
<td>#</td>
</tr>
<tr>
<td>pì</td>
<td>come</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>sàrà àfál</td>
<td>walk home</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>sàrà dʒìŋgírí</td>
<td>walk to the mosque</td>
<td>√</td>
<td>#</td>
</tr>
<tr>
<td>sòm ʃìkìmà</td>
<td>dip into the sauce</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>fìr gàkà ñgàdé</td>
<td>sweep this courtyard</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>tiré</td>
<td>sneeze</td>
<td>√</td>
<td>#</td>
</tr>
<tr>
<td>tsì Fìrìnió</td>
<td>go to Frignion</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>tsì gòjá</td>
<td>go to the market</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>fùw àfál</td>
<td>run home</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>fùw gàrè gàdé</td>
<td>run this race</td>
<td>√</td>
<td>multiple</td>
</tr>
<tr>
<td>fùw ìrì inìò</td>
<td>run two kilometers</td>
<td>√</td>
<td>?</td>
</tr>
</tbody>
</table>

All of these predicates are acceptable in the tilàfì construction.

In the dür construction, I suspect that many of the unacceptable predicates could be made acceptable if an acceptable context requiring the ‘multiple’ reading could be found.

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<sup>202</sup> This type of ‘multiple’ reading is only possible because ʃìkúrò ñdé can refer not only to a specific cloth, but to a specific cloth pattern (type of cloth).

<sup>203</sup> There is also an obscure use of kpá where it means something like to disappear into a ditch or a hole.

This reading was said to be acceptable in the dür construction by some speakers, but more research is necessary to completely understand this meaning.
The expected response here, then, is either # or multiple.

With *dà gàtò*, ‘cross the stream’, there was discussion between some consultants as to the size of the stream. All agreed that if the stream is small enough to step or leap across, this predicate is unacceptable with the *dur* construction. If the body of water were larger, and needed a boat to cross (and took a long time to get across), then some (but not all) consultants thought this predicate would be acceptable in the *dur* construction.

With the predicate *dur*, ‘extinguish’, I am unsure why it is acceptable here. Clearly the translation ‘extinguish’ is not close enough to the full meaning of the verb.

With the predicate *sòm ỳkimà*, ‘dip into the sauce’, I believe the confusion is the opposite of that with the ‘jump’ predicate above. That is, I was thinking of dipping once. However, this is the normal way in which Anii people eat food, by repeatedly dipping some kind of starchy food into a sauce. Thus, I suspect that for the Anii, this is a semelfactive predicate, not a one-time telic predicate.

With *fèr gàkà ỳgàdè*, ‘sweep this courtyard’, I am not sure why it is not telic, but sweeping the courtyard is something that Anii women do every morning. This may have something to do with the difference here.

I believe the confusion with *ʧuw ɨrì ɨɲì ʊ*ɨ, ‘run two kilometers’, arose because not all of my consultants accepted *irì* (plural *iri*) as the Anii word for ‘kilometer’, so not everyone agreed that this predicate made sense. The word is one that the elders have recently decided will mean ‘kilometer’, to be used instead of the French word *kilomètre*.

**Final Note:**

There is one other predicate that was initially included in this test group, but was ultimately not useful. This predicate is *lèè*, which can mean ‘do’, or can be used as a copula. Because of this second option, there was considerable confusion in trying to use this predicate in the diagnoses, and it was decided to leave the investigation of this predicate to future research, when clearer contexts can be devised. It appears, though, that *lèè* is generally atelic, and sometimes stative. That is, it is often acceptable in the *tìlàfì* construction and the *dur* construction, but in the *tìlàfì* construction, some consultants were not sure. It may be in fact that there are two lexical entries involved here, one for ‘do’ and one for the copula. This is a matter for future research.

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