# TOPICS IN SIAMOU TENSE AND ASPECT 

by

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#### Abstract

This dissertation examines the syntax and semantics of tense and aspect in Siamou (Niger-Congo, Kru), a language of Burkina Faso. Its purpose is twofold. First, it provides a description of the tense/aspect system of Siamou; to date, this part of the grammar has not been systematically investigated. Second, it tests and sharpens formal syntactic and semantic tools relating to tense and aspect on Siamou data. It shows that applying standard analyses to a previously unanalyzed tense/aspect system is effective. For example, existing tests for perfective and imperfective aspect are able to diagnose two of Siamou's aspectual morphemes. However, it also points out some key areas that need work, including how Siamou past tense implicatures arise, and what kind of modality Siamou future expressions encode.

Chapter 1 provides background information on tense and aspect, describes the methodology used, and introduces topics covered in this dissertation. Chapter 2 provides an overview of properties of Siamou that are relevant to the description and analysis of tense and aspect in this language. Chapter 3, which is a morpho-syntactic description and analysis of the Siamou aspectual phrase, establishes that Siamou has a set of six aspectual suffixes that partition into three tonal classes: a low tone class, which includes $-L,-\dot{e}$, and -nèn, a mid tone class, which includes $-n$ and $-a$, and a high-low tone class, which includes $-b \hat{\varepsilon}$. This is followed by a theoretical chapter which develops a set of semantic diagnostics for perfective and imperfective aspect. Chapter 5 uses those diagnostics to show that one of the aspectual markers, the low tone suffix, encodes perfective aspect while another, the mid tone nasal consonant suffix, encodes imperfective aspect. Chapter 6 investigates the semantics of the right-edge particle $i n$, and argues that its primary meaning is past tense. I show that this particle also gives rise to a number of implicatures that are consistent with its primary meaning. Finally, chapter 7 examines Siamou's future expressions (ri. . .-a, bè. . .-a, and bè. . .-bê). I show that the future meaning makes use of three syntactic positions: finiteness, modality, and prospective aspect.


## Preface

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## List of Abbreviations

## Siamou

1
2
3
CL
COP
CMPL
DEF1
DEF2
DEM
DIM
EMPH
EP
FIN
IMP
INCEP
IMPF
LOG
MOD
NEG
NFP
NOM
NPI
ORD
POSS
PL
PRFV
PRSP1
PRSP2
PST
Q
QUOT
REL
RFLX
SG
STAT
SUF
v1
v2
first person
second person
third person
classifier
copula
completive
definite (particle)
definite (suffix)
demonstrative
diminutive
emphatic
epenthetic consonant
finite particle
imperative
inceptive
imperfective
logophor
modal
negative
non-finite particle
nominal
negative polarity item
ordinal
possessive
plural
perfective
prospective aspect 1
prospective aspect 2
past
question particle
quotative particle
relative particle
reflexive
singular
stative
suffix
verb stem variation 1
verb stem variation 2

## Other languages

A

ABL
ASSOC
AUX
B

CL3
DEC
DET
EVN
F
FUT
FV
INC
INDEF
INFER
INT
LOC
O
P
PART
PASS
PERF
PRES
PROG
PRSP
QU
REC
REM
T
V
future
tense
verb
marks transitive subjects and subjects of some intransitive verbs in Paraguayan Guaraní
ablative
associative auxiliary
marks possessors and
subjects of some intransitive
verbs in Paraguayan Guaraní
class 3 prefix
declarative
determiner
event foregrounding suffix
feminine
final vowel
incompletive
indefinite
inferential
intensive
locative
object
post-position
particle
passive
perfect
present
progressive
prospective
question
recent past
remote past

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4. He occasionally warmed my shoes in the oven before I left for class.
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## 1. Introduction and Literature Review

### 1.1 Why Tense and Aspect Matter

### 1.1.1 Why Tense and Aspect Matter: The Theoretical Stakes

Remember the last conversation you had? What was it about? For me, it was a discussion about the garden with my husband. We had had a frost warning the previous night, so we had covered the tomatoes and peppers in the garden with sheets to keep them from freezing. This is usually a sign that it is time to take in the garden for winter, so we were planning what we were all going to bring in to the garage on Saturday - all the tomatoes and peppers, and so on. The potatoes and carrots could wait because they were safe underground, and carrots are better after a frost anyway. . .

None of what we were talking about had to do with what was happening around us at the time. We were finishing up supper and getting ready to go out for the evening, but in our minds, we were already in the garden, filling the wheelbarrow with produce. Language is what allowed us to be there together. This is because human language has a property called "displacement" (Hockett 1960, von Fintel and Heim 2011). This property means it is possible for us to discuss things that are not in the here and now. It allows us to communicate a remembrance of past events, and an anticipation of future events. Without it, we would be stuck with only what was in front of us at the moment.

One of the main tools languages use for displacement is tense. Tense allows us to specify the temporal location of a certain time in relation to the time when we are talking. In natural language, this takes the form of past, present or future tense.

In the conversation about the garden, not only are we locating events in time, but we are doing something else as well. To see this, look at the following examples. When I was describing the incident in the garden, I said we had covered the tomatoes and peppers (1a), not that we were covering them (1b). This is because from my perspective, the event was already completed when we were sitting at the table. If I had said (1b), I would have communicated that we were still in the process of covering the garden.

1. a. We had cover-ed the tomatoes and peppers.

TEMPORAL ASPECT: non-overlapping time intervals
b. \# We were cover-ing the tomatoes and peppers.

Later, I said we were finishing up supper (2a), not that we had finished up supper (2b) because from my perspective, we were still in the process of eating when we were sitting at the table. If I had said (2b), that would have meant that we were already finished eating.
2. a. We were finish-ing up supper.

VIEWPOINT ASPECT: overlapping time intervals
b. \# We had finish-ed up supper.

When events are presented from a certain point of view, this is called aspect. The examples above use different grammatical markers, such as (have) -ed or (be) -ing to specify aspect. Therefore, this kind of aspect is sometimes called grammatical aspect. I adopt the proposal of Liao (2005), who claims that grammatical aspect can be divided into two types: temporal aspect and viewpoint aspect. Temporal aspect has to do with non-overlapping time intervals, which includes perfect and prospective aspect. Viewpoint aspect has to do with overlapping time intervals, which includes perfective, imperfective and progressive aspect. The sentence in (1a) is an example of temporal aspect (perfect), and the sentence in (2a) is an example of viewpoint aspect (progressive).

Sometimes, instead of grammatical markers, it is the words themselves that describe the situations that organize time differently. Some situations are stable over time, as in (3a), where have a frost warning describes a state that holds over time. In contrast, other situations have the possibility of changing over time, as in (3b), where covering the tomatoes and peppers describes an event that is constantly changing.

## 3. a. We had had a frost warning. <br> b. We had covered the tomatoes and peppers.

The state of having a frost warning just is- there is a frost warning. However, covering the tomatoes and peppers is a process that involves bringing a pile of sheets up from the basement, dragging them to the garden, unfolding them, and so on. The difference between states and events is part of an area of study that linguists call lexical aspect.

### 1.1.2 How Tense and Aspect Are Deployed in Siamou: The Empirical Stakes

Linguists are involved in a search for uniformity and diversity across languages. To understand how language works, it is important to know what languages have in common, and also in what ways they are different. Our knowledge of tense and aspect is gathered from looking at a variety
of languages. The more languages are studied, the more we can refine and develop this knowledge. This thesis is about how tense and aspect works in Siamou: how it is like other languages (uniformity) and how it is different (diversity).

As an example of a way in which languages are diverse, here is a basic contrast between two unrelated languages: English and Siamou. In English, sentences must be marked for tense, but not aspect. This means that you can say (4a) with past tense ate, but not (4b) with unmarked eat. Although there is no aspect marking in (4a), it is still grammatical.
4. a. Yesterday I ate breakfast.
b. ${ }^{1} \quad *$ Yesterday I eat breakfast.

In Siamou, it is the opposite: tense is not obligatory, but aspect is. The utterance in (5a) has no tense marking, and yet it is grammatical because the verb is marked (with a low tone) for perfective aspect. The utterance in (5b) has no aspect marking and it is ungrammatical.
$\begin{array}{llllllll}\text { 5. } & \text { a. } & \text { Dír } & \text { lé } & \text { ń } & \text { ni } & \text { le } & \text { dì. } \\ & & \text { yesterday } & \text { morning } & \text { 1SG } & \text { FIN } & \text { food } & \text { eat.PRFV }\end{array}$
Yesterday morning I ate food.
French: J'ai mangé de la nourriture hier matin. (C)
$\begin{array}{llllll}\text { b. } & \text { Dír } & \text { lé } \varepsilon & \text { ń } & \text { ni } & \text { le } \\ \text { yesterday } & \text { morning } & \text { di. } \\ & \text { SG } & \text { FIN } & \text { food } & \text { eat }\end{array}$
Another way in which Siamou differs from many other languages has to do with future expressions. In English, it is completely senseless to say something like (6).
6. \# He will climb the mountain, but he won't.

In Siamou, this kind of utterance is odd, but it makes sense in the right context. Example (7) can be said in a context where the speaker knows that the person they are talking about is intending to climb a certain mountain, but he (the speaker) intends to stop him.

[^0]$\begin{array}{llllllll}\text { 7. } & \text { À } & \text { bè } & \text { dú-a } & \text { fóro } & \text { à } & \text { káal=1 } & \text { ninatyé, } \\ & 3 \text { SG } & \text { MOD } & \text { climb-PRSP2 } & \text { till } & \text { DEF1 } & \text { hill=DEF2 } & \text { top }\end{array}$
kè à bè dú-a bo.
but 3 SG MOD climb-PRSP1 NEG
He will climb to the top of the hill, but he won't climb
French: 11 montera sur la colline jusqu'au sommet, mais il montera pas. (C)
This is similar in some ways to the following English utterance.
8. Now that she can eat, she can't eat.

This sentence can be said in reference to a person who was forbidden to eat for a day in order to have a medical procedure done. After the procedure, she is allowed to eat, but she feels sick and has no appetite. The first can has to do with permission, and the second can has to do with physical ability. This tells us that even though on the surface it may seem that the Siamou phrase $\grave{A} b \grave{e} d u-a$ has the same meaning as the English phrase He will climb, they are actually different from each other in a very important way.

To show how unrelated languages sometimes display uniformity, let us take an example from the category of viewpoint aspect. In English, utterances like (9a) and (9b) have a very clear contrast. The first one means that the rain started falling after I was done picking tomatoes, but the second one means that the rain started falling while I was still picking. This is an aspectual contrast.
9. a. I picked tomatoes, and then it rained.
b. I was picking tomatoes and then it rained.

Siamou, although unrelated to English, makes exactly the same kind of contrast. In (10a), the verb is marked with perfective aspect and it expresses a meaning similar to (9a). The verb in (10b) is marked with imperfective aspect, and it expresses a meaning similar to (9b).
10. a. Ń n' à yenìníin=î tónn, nò ki tónn. 1SG FIN DEF1 tomato.PL=DEF2 gather.PRFV rain FIN fall I gathered the tomatoes and then it rained.
French: J'ai ramassé la tomate et la pluie a tombé. (C)
context: I finished gathering the tomatoes before it rained.
inappropriate context: I was still gathering the tomatoes when it started to rain.
b. Ń n' à yenìníin=î tómy-n ín, nò ki tónn. 1SG FIN DEF1 tomato.PL=DEF2 gather-IMPF PST rain NFP fall I was gathering the tomatoes and then it rained. French: Je ramassais la tomate et la pluie a tombé. (C) context: I was still gathering the tomatoes when it started to rain. inappropriate context: It started raining after I finished gathering the tomatoes.
consultant comment: They (i.e. gathering tomatoes and rain falling) happened at the same time.

When completely unrelated languages pattern in the same way, and the same pattern is found over and over again in many languages, this may provide a pointer towards what is universal to all languages.

Siamou also contributes to our knowledge of lexical aspect. The contrast between states and events is believed to be universal. Siamou also has a stative/eventive contrast. However, in Siamou this contrast does not extend into the verbal domain. It appears that Siamou completely lacks stative verbs. Instead, stative readings are expressed in other ways, either with utterances that do not have verbs (11), or with event verbs that have an implied result state (12). In (12), the event verb jen (to heat), is inflected with perfective aspect (jèn).

```
11. Klô ń to.
    hunger 1SG to
    I am hungry.
    Literally: Hunger is to me.
```

12. À nun=̂̂ jên.
DEF1 water=DEF2 heat.PRFV
The water is hot.
Literally: The water is heated.
French: L'eau est chaude. (C)

The next section (1.2) describes the methodology used to collect data for this thesis, and the conventions used to present this data. Then, section 1.3 shows how the topics introduced above are organized into chapters.

### 1.2 Collection and Presentation of the Data

Most of the research for this dissertation was conducted during a six-month visit to the province of Kenedougou in Burkina Faso in 2009-2010. Section 1.2.1 introduces the three Siamou
language consultants that I worked with. The following three sections describe three types of data collection: elicitation sessions in 1.2.2, narrative collection in 1.2.3, and Siamou conversations in 1.2.4. Section 1.2 .5 gives an overview of Siamou orthographic conventions that I use, and section 1.2.6 explains the representation of Siamou data. Section 1.2.7 introduces three Siamou linguists with whom I had contact, and who have influenced this dissertation.

### 1.2.1 Language Consultants

There were three main Siamou language consultants that I worked with. 1. Souleymane (Solo) Traoré from the courtyard ${ }^{2}$ Kyensśron in Tin, who now lives in Orodara 2. Zoumana Traoré from Orodara, and 3. Fanta Coulibaly from the courtyard Téndenno in Tin. All three enthusiastically gave permission for me to use their names in this work.

For elicitation, I worked mainly with one consultant: Solo. He is someone with whom I had already established a working relationship on a previous visit to Burkina Faso, and he is familiar with many of the protocols associated with linguistic elicitation. He is a native speaker of Siamou, fluent in Jula (the local trade language) and French, and has some understanding of English from many years of working with English speakers. He is currently involved in Bible translation work with Paul Thiessen, and has contributed extensively to an unpublished SiamouFrench dictionary (Thiessen et al. n.d) He has a deep interest in and understanding of his language, including a thorough awareness of tone.

### 1.2.2 Elicitation Tasks

In the elicitation tasks, the consultant supplied the following:
13. a. Siamou sentences that fit a given context;
b. contexts for a particular Siamou sentence;
c. grammaticality judgements for Siamou sentences;
d. Siamou translations of French sentences;
e. alternatives and/or corrections to Siamou sentences;
f. felicity judgements of Siamou sentences in context.

Since many Siamou verbs neutralize distinctions between the different verb forms (in particular, the infinitive and the perfective), or have distinctions that are difficult for a non-native ear to grasp, I made an effort to use verbs in which all forms were clearly distinct.

[^1]Elicitation was done either in the village of Tin or in the town of Orodara, both of which are Siamou speaking areas, about 15 kilometres apart. Sessions were recorded in .wav files with a Marantz PMD660 solid state recorder using two of three microphones (one for the linguist and one for the consultant): an omni-directional mic, a hand-held cardioid mic, and a lapel mic. The omni-directional mic, although lovely in theory, was much better at recording cicadas, roosters, donkeys, and mopeds than Siamou utterances so it was phased out. I used the hand-held mic (with a mic stand) while Solo used the lapel mic. The recordings were later transferred to a Macbook laptop. All Siamou utterances, along with any related information, were entered into a database using Toolbox (an SIL software program).

When I returned to Canada, I was able to continue with my research by conducting elicitation through email questionnaires. This was a beneficial supplement to in-person elicitation because some elements of the grammar which my ears had missed became more apparent. Email elicitation requires different techniques than in-person elicitation. Since there is often a time lag between the time questions are asked and the time responses are received, it is extra important to make the questions as clear as possible. Depending on availability of internet, a misunderstanding could take weeks to clear up. Some techniques that I learned through trial and error were the following:
14. a. Do not make questionnaires too long. Three pages of well-spaced questions was a good length in my situation.
b. Put lots of empty space between questions so that it is clear when you are transitioning from one to the next.
c. Make the utterances that you are asking about stand out visually using boldface text or something similar.
d. Make it very clear where answers are expected. One way to do this is to draw a blank line after every question to which you would like a response.
e. It is sometimes necessary to ask the same kinds of questions more than once in different ways, especially if the answers are not clear at first. Even slightly rephrasing a question can affect the answers you get.
f. It is often useful to elicit data in stages. The first round of questions might involve asking for translations of utterances in the language of communication (French, in this case). It might also involve constructing Siamou utterances and determining if they are grammatical. Once you have a set of well-formed Siamou utterances, you can construct contexts and find out if the utterances are felicitous in those contexts, or even ask the consultant to supply contexts. Care must be taken with this because grammatical utterances may be rejected as ill-formed initially if no context is provided, but deemed acceptable with an appropriate context.
g. It is sometimes useful to give questions in pairs so that the consultant can contrast one form with another. For example, instead of eliciting a set of perfective utterances and then a set of imperfective utterances, elicit them as minimal pairs: one perfective utterance with a matching imperfective utterance.
h. Sometimes it is helpful to briefly explain your purpose in eliciting certain data. This may prevent the consultant from getting frustrated when, for example, you purposefully ask about a bunch of ungrammatical sentences to get negative data and he begins to feel that all his careful teaching was in vain.

### 1.2.3 Narratives

In addition to the elicitation, I also videotaped about forty traditional Siamou fables, and one description of how to play Awale, a common west African game. These narratives were given by Zoumana Traoré, who has experience telling stories for a local radio station. Each story was recorded first in Siamou and then in French. ${ }^{3}$ The Siamou versions are in the process of being transcribed by Amedou Traoré, a native speaker from Tin. Some of the data from these transcriptions are used in this thesis.

### 1.2.4 Conversations

Finally, I recorded about six hours of Siamou conversation. The conversations were between either me and Solo, me and Fanta, or Fanta and her 15-year-old daughter, Sali.

Aside from formal recording sessions, I also interacted on a personal and casual level with native Siamou speakers. This allowed me to increase my comprehension and production skills, and gave me an opportunity to listen for utterances that I could explore further during elicitation sessions. While in Tin, I stayed at Téndenno, a Siamou courtyard (occupied by an extended family). I had previously lived in this courtyard for nearly one year, and was familiar with the family, and was already somewhat able to converse in Siamou upon my arrival.

### 1.2.5 Orthographic Conventions

For the most part, I use Siamou orthography in this dissertation. This orthography uses many standard IPA symbols, with a number of exceptions. First of all, the consonants $/ \mathrm{gj}, \int, \mathrm{j} /$ are written $j$, sh, $y$ respectively. An example for each of these phonemes is shown in Table 1.1 along with its phonetic transcription and gloss.

[^2]Table 1.1 Siamou Orthographic Conventions $1: j$, sh and $y$

| Siamou word | Phonetic Transcription | Gloss |
| :--- | :--- | :--- |
| a. $j a$ | $/ \mathrm{g} \mathrm{g} /$ | catch/grab |
| b. $s h i$ | $/ / \mathrm{j} /$ | life/knowledge |
| c. $y \partial$ | $/ \mathrm{j} /$ | nest/net |

Secondly, nasalization on a vowel is marked by $\eta$ after the vowel. Word final nasals are written $n$, but the exact nature of their articulation is more complex. I follow Nicolson (2010) and write this phonetically as $/ \bar{\eta} /$. See section 2.1 .3 for more information on nasality. Examples of words with nasalized vowels or nasal consonant codas are given in Table 1.2.

Table 1.2 Siamou Orthographic Conventions 2: $y$ and $n$

| Siamou word | Phonetic Transcription | Gloss |
| :--- | :--- | :--- |
| a. shaך | $/ \int \tilde{a} /$ | to sprout/to hatch |
| b. shan | $/ \mathrm{Ja}^{\eta} /$ | to measure/to compare |

Tones are usually marked with an accent on the vowel of the syllable in which they occur. High tone $(\mathrm{H})$ is marked e.g. $\dot{a}$, low tone $(\mathrm{L})$ e.g. $\dot{a}$. mid tones $(\mathrm{M}, \mathrm{M}(\mathrm{L}), \mathrm{M}(!\mathrm{H}))^{4}$ are unmarked. A high-low contour tone (HL) is marked e.g. $\hat{a}$. A high-downstepped-high contour tone $(\mathrm{H}!\mathrm{H})$ is marked $a ́ a$, and a rising-falling contour (M!HL) by a sequence of two vowels, e.g. $a a$. The double vowel is an orthographic convention and does not necessarily indicate vowel length.

There is another orthographic convention for marking tone in Siamou that may cause confusion. Imperfective forms of $L, M$ and $M(L)$ verbs have a $M$ tone in the imperfective. However, for unknown reasons this tone falls slightly not quite to L, but maybe halfway (Souleymane Traoré p.c). The Siamou orthographic convention is to write these imperfectives with two vowels and mark the second vowel as L (e.g. duùn 'ask.IMPF'). This convention serves to distinguish verb forms from each other that would otherwise be written exactly the same. The L tone marking distinguishes these imperfectives from imperfectives of $M(!H)$ verbs, which are written with two vowels but no L tone (e.g. diin 'extinguish.IMPF'). The double vowel distinguishes these imperfectives from bare verbs that have a surface $M$ tone and end in a nasal consonant (e.g. din 'extinguish'). This information is summarized in Table 1.3. The purpose of

[^3]this discussion is simply to clarify the Siamou orthographic conventions. More information about Siamou tone is given in section 2.2.

Table 1.3 Siamou Orthographic Conventions 3: Tone

| Siamou Tone Marking | Tone |
| :--- | :--- |
| a. $\dot{a}$ | High |
| b. $\dot{a}$ | Low |
| c. $a$ | Mid |
| d. $\hat{a}$ | High-Low |
| e. $a ́ a$ | High-Downstepped High |
| f. $a a$ | Mid-Downstepped High-Low ${ }^{5}$ |
| g. $a \grave{a}$ | Mid (falling slightly) |

Since Siamou has only had an orthography for about ten years, some conventions are still under debate. For example, vowels are predictably nasalized after a nasal onset, but it has not been decided whether or not these vowels should be marked as nasal or not. I have chosen to mark them in this thesis, following current practices.

### 1.2.6 Thesis Conventions for Siamou Data

The Siamou data in this thesis is structured in a certain way. First of all, English glosses are given for each Siamou morpheme. Beneath that, I give an English translation and a French translation, if one exists. Throughout this dissertation, the notation $C$ following a French translation indicates that it was supplied by the consultant. The notation $L$ indicates that it was supplied by the linguist (me). This means that either I initially provided the French utterance and asked for a Siamou translation of it, or that I provided the consultant with a French translation of a previously elicited Siamou utterance, and confirmed that it was correct. Sometimes no French translation is available because elicitation was focused on semantic contexts or grammaticality judgments rather than translation.

Since my research was conducted using French as the language of communication, all English translations are my own. When providing these English translations, I took into account the context(s) in which the Siamou phrase was judged felicitous, the discussion between me and the consultant regarding the Siamou phrase, and the French translation, if there was one.

[^4]
### 1.2.7 Siamou Linguist Connections

During my stay in Burkina Faso, I had contact with three other linguists who have conducted research on the Siamou language: Paul Thiessen (a missionary linguist), Lillian (Haas) Nicolson (a literacy worker and missionary linguist), and Kotolama Traoré (a Siamou speaker-linguist). I first went to Burkina Faso to homeschool Paul and Lois Thiessen's two youngest children in 2003-2004. Paul Thiessen is from my hometown of Blumenort, Manitoba. He has been involved with Siamou for about thirty years, and is currently working on a Siamou translation of the Bible. Lillian Nicolson is a native of Blue Sky, Alberta and has worked on Siamou since 1999. She is well established as part of the Téndenno courtyard, and is a good friend and host when I am in Tin. Kotolama Traoré is from the Siamou town of Bandougou in Burkina Faso, and has two French publications on the topic of the Siamou language (Traoré 1985, 1986).

### 1.3 Overview of the Thesis

The dissertation is structured as follows: Chapter 2 is a descriptive overview of Siamou grammar. Chapter 3 focuses on the morpho-phonology and morpho-syntax of Siamou aspect. Chapter 4 introduces the background on theories of perfective and imperfective aspect, including a set of diagnostics for both. Chapter 5 uses these diagnostics to show that Siamou has a $L$ tone suffix that encodes perfective aspect and a $M$ tone nasal suffix that encodes imperfective aspect. Chapter 6 analyzes the sentence-final particle in as a past tense, with a number of associated implicatures. Chapter 7 is a description and preliminary analysis of Siamou future expressions. Chapter 8 is the conclusion. Since these chapters cover a range of topics, it is possible to read most of them independently, except for chapter 5 which relies heavily on concepts introduced in chapter 4. In the following subsections, I give a preview of the major findings of each of these chapters.

### 1.3.1 The Grammatical Sketch

Chapter 2 provides background information about Siamou grammar and a brief description of Siamou's phonology, including the inventory of consonants and vowels, syllable structure, and tone. This chapter also surveys Siamou syntax, with information about basic word order (SOV), and some detail about the nominal projection and the verbal projection. The discussion of the nominal projection covers pronouns, modifiers, plurality, definiteness, possession and nominalized verbs. The discussion of the verbal projection focuses on functional particles,
including a left-edge quotative particle, seven pre-predicate particles, and four right-edge particles, concluding with a brief description of verb stems. The final portion of this chapter is a short introduction to the Kru language family that shows how Siamou fits in. Siamou is an outlier among the Kru languages both geographically and genetically. This chapter is important because information about Siamou grammar is scarce and difficult to access. This is the first time some of this information has been made available. It is also an important tool for understanding this thesis. The remaining chapters focus on issues pertaining to tense and aspect. The background provided in this chapter is intended to make the data in the following chapters more comprehensible.

### 1.3.2 The Morpho-Phonology and Morpho-Syntax of Aspect in Siamou

Chapter 3 hones in on aspect. Siamou has a set of six aspectual morphemes that are all verbal suffixes. These suffixes are partitioned into three inflectional tone classes: a low tone class, which includes perfective (marked by a low tone suffix - $L$ ), completive -è, and stative -nèn; a mid tone class, which includes imperfective $-n$ and prospective aspect $1-a$; and a high-low tone class, which includes prospective aspect $2-b \hat{\varepsilon}$. There are two possible analyses for the morphosyntax of Siamou aspect. The first, following Kayne's (1994) anti-symmetry theory, is that Siamou has an underlying VO word order and that the verb rises to a higher aspect position while the object rises to an even higher position. The second possibility, which is supported by data from the Kru language family, and which I adopt, is that the underlying word order is OV and that the aspectual suffix attaches to the verb via right-alignment.

Regarding the internal structure of the aspect phrase, data from Siamou is consistent with an independently motivated structure (Tenny 2000, Liao 2005) in which the aspect phrase is divided into a lower aspect head and a higher aspect head. In Siamou, the lower head contains perfective and imperfective aspect, and the higher head contains the remaining aspects: completive $-\dot{e}$, stative $-n \grave{n} n$, prospective aspect $1-a$, and prospective aspect $2-b \hat{\varepsilon}$. Although I have not analyzed the completive and stative suffixes, preliminary results indicate that they both resemble perfects in some ways, which means that they fit into the category of grammatical aspect. The perfective $-L$ and the imperfective $-n$ differ from the other aspect suffixes in that they have less phonological content, and in that they have morphological irregularities, which the other suffixes do not. If there are two levels of aspect, stacking is predicted to occur. Siamou
does not allow stacking of aspectual suffixes on a single verb. However, it appears that stacking may occur in complex structures that involve an auxiliary verb and a nominal form.

This chapter also contains a comparison of Siamou perfective and imperfective aspect with perfective and imperfective aspect in Kru, the language family to which Siamou belongs. Siamou perfectives and imperfectives are similar in many ways to Kru perfectives and imperfectives, including elements such as tone and segmental form. However, while Kru negates perfectives differently than imperfectives, Siamou negates all finite phrases the same way. The final part of this chapter contains an appendix that gives a detailed description of irregular verb forms. This chapter is important because it identifies many of the morphemes that are the focus of the following chapters, in particular the perfective and imperfective. Since these aspectual suffixes are marked mainly suprasegmentally by tone, they are not easy to pick out in a phrase. This chapter is the net that catches the butterflies I wish to study.

### 1.3.3 The Semantics of the Perfective and the Imperfective

Chapter 4 is largely a review of the literature on topics relating to perfective and imperfective aspect with formal definitions and descriptions of tense and aspect, as well as perfective and imperfective aspect. Klein (1994) and Kratzer (1998) have different definitions of perfective aspect that make different predictions, but they have the same definition for imperfective aspect. This chapter provides an overview of lexical aspect, and discusses the interaction of lexical aspect with grammatical aspect. The final section is devoted to collecting a set of diagnostics for perfective and imperfective aspect. These diagnostics are tailored for a language in which the perfective has a default past interpretation and the imperfective has a default present interpretation. For the perfective, it is necessary to show that it is not past tense, and that the default past interpretation is actually expected for perfectives. For the imperfective, it is necessary to show that it is not present tense, and that the default present interpretation is expected for imperfectives. Diagnostics for perfective and imperfective aspect also rely on termination and culmination entailments, and the interpretation of inflected verbs with adverbial modifiers.

### 1.3.4 The Semantics of the Perfective and the Imperfective in Siamou

Chapter 5 uses the diagnostics from chapter 4 to diagnose perfective and imperfective aspect in Siamou, focusing on a subset of the aspectual morphemes from chapter 3: the low tone suffix $-L$,
and the mid tone nasal suffix $-n$. The diagnostics for perfective aspect show that the low tone suffix - $L$ meets the criteria for perfective aspect. These diagnostics also reveal that perfective aspect in Siamou has a strong default past interpretation, but is not past tense. The diagnostics for imperfective aspect show that the mid tone nasal suffix - $n$ meets the criteria for imperfective aspect. Once these morphemes have been identified, they are compared and contrasted with perfective and imperfective aspect in other Kru languages. The final part of this chapter explores an intriguing discovery about the Siamou language that is revealed by these diagnostics: Siamou has no stative main verbs.

### 1.3.5 The Semantics of Past Tense ín and its Implicatures

Chapter 6 focuses on the sentence final particle in. This particle marks past tense, which indicates that the reference time of an utterance precedes its speech time no matter which aspectual suffix it occurs with. Siamou aspect suffixes can be categorized according to whether they have a default past interpretation, a default present interpretation, or a future interpretation. The particle $i n$ always causes these types of utterances to shift their interpretation to the past. The second part of this chapter looks at a number of implicatures of the particle ín. An implicature is a meaning that an utterance has beyond what is actually stated. The implicatures of in include the following readings: remote past, counterfactual, and cessation, and also possibly politeness and doubt. These readings are mostly predicted from the basic past tense meaning of $\mathrm{i} n$. However, the way in which the politeness and doubt readings arise is not clear.

### 1.3.6 The Semantics of Futurity in Siamou

The displacement property of language allows us to speak not only of what has already happened in the past, but about what will happen in the future. Chapter 7 looks at Siamou's three future expressions. These three expressions involve a total of three syntactic positions: an aspectual position (which contains one of two prospective aspect suffixes, $-a$ or $-b \hat{\varepsilon}$ ), a modal position (containing the pre-predicate particle $b \dot{e}$ ) and a finiteness position (containing the pre-predicate particle $r i$ ). These positions are shown in the tree in (15).


Since futurity is tied up with modality, this chapter contains a survey of the literature on modality. This includes a discussion of the ingredients of modality: the modal base, the ordering source and the modal force, as well as two ways that modal expressions can be classified: Kratzer's (1991) and Portner's (2009). It also includes an overview of different ways that modals can be underspecified in languages, and how modality interacts with futurity. I look at four different ways of analyzing "future modals" in various languages. They have been analyzed as pure modals, as a fusion (into a single morpheme) of modality and aspect, as a combination of modality and aspect (using two or more morphemes), and as modals that are either aspectual or non-aspectual. In Siamou, future expressions are best analyzed as a combination of prospective aspect and modality, as evidenced by a number of diagnostics. The final part of this chapter is a first pass at decomposing Siamou's future expressions to justify the tree in (15). This chapter is the final body chapter of this thesis and it is the most speculative and the least conclusive. At the end of this chapter there is a discussion of some outstanding questions and a set of extra data on future expressions that was not included in the analysis, but which may be useful for further work on this topic.

### 1.3.7 Conclusion

Chapter 8 summarizes the findings of this thesis regarding tense and aspect, and it outlines the main outstanding issues. In Siamou, some temporal interpretations arise by default: the perfective has a default past interpretation and the imperfective has a default present interpretation. Siamou future expressions have a prospective aspect component, and a modal
component, but they are not future tense according to the definition of tense used in this dissertation. Siamou perfective aspect meets the criteria for perfective aspect as defined by Klein (1994): it refers to situations in which the reference time is partially contained within the event time. Siamou imperfective aspect meets the criteria for imperfective aspect as defined by both Klein (1994) and Kratzer (1998): it refers to situations in which the reference time is completely contained within the event time. Regarding lexical aspect, an important contribution of this dissertation is the discovery that Siamou lacks stative verbs. Instead, there are a number of other strategies for encoding stativity, including a class of verbs called inchoatives, which have a result state implicature.

The main questions that remain are the following:

1. How can we formally differentiate between the three future expressions, since they all encode both prospective aspect and modality?
2. How can we account for the secondary meanings of politeness and doubt that arise from the past tense particle $i n$ ?
3. This dissertation focused on aspect in main clauses. How do multi-clausal utterances affect the interpretation of aspect in Siamou?
4. What is the syntactic structure of aspect in Siamou? I argued in chapter 3 for an underying SOV analysis, which fits with Kru, but the evidence at this time is not conclusive.
5. What is the significance of the lack of stative main verbs in Siamou? Are there stative auxiliary verbs?
6. What is the nature of the class of verbs called inchoatives?

## 2. Grammatical Sketch of Siamou

The goal of this chapter is to provide an overview of the Siamou language. I begin with the phoneme inventory in 2.1. In 2.2, I introduce the tone inventory. Section 2.3 covers some syntactic information, such as basic word order, and the structure of nominal and verbal projections. Section 2.4 provides background information on Siamou, including demographic and cultural information as well as a review of the literature on Siamou. Section 2.5 is about how Siamou fits into the Kru language family, and section 2.6 concludes. Much of the information in this chapter, except where otherwise specified, has not been presented before and is intended to be a contribution to language documentation.

### 2.1 Phoneme Inventory

In this section, I describe the consonant inventory (2.1.1), the vowel inventory (2.1.2) and give some information about syllable structure (2.1.3).

### 2.1.1 There Are 21 Consonants

Siamou has 21 consonants, as shown in the following table (Traoré 1984, Nicolson 2010). The three consonants in parentheses are very rare.

Table 2.1 Siamou Consonant Inventory ${ }^{6}$

| Manner of Articulation | labial | alveolar | palatal | velar | labiovelar | glottal |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| stops-voiceless <br> - voiced | $\mathrm{p})$ <br> p | t <br> d | $\mathrm{g}^{\mathrm{j}}$ | k <br> $(\mathrm{g})$ | kp <br> gb |  |
| fricatives- voiceless | f | s | f |  |  | $\mathrm{(h)}$ |
| nasals | m | n | n |  | nm |  |
| approximant |  |  | j |  | w |  |
| lateral approximant |  | l |  |  |  |  |
| rhotic trill |  | r |  |  |  |  |

There are labial, alveolar and velar voiced and voiceless stops, a voiced palatal stop and labiovelar double articulated stops, $/ \mathrm{kp} /$ and $/ \mathrm{gb} /$. There are four voiceless fricatives, but no voiced ones, and four nasals, including the double articulation, $/ \mathrm{ym} /$. Two approximants, $/ \mathrm{j} /$ and $/ \mathrm{w} /$ are attested, as well as the lateral approximant $/ \mathrm{l} /$ and the rhotic trill /r/. Traoré (1984) claims

[^5]that [J] is an allophone of /s/, with [J] occurring before high vowels and [s] elsewhere. However, there are some instances of [ $\left.\int\right]$ before low vowels, including in the near minimal pair in (1) (Nicolson p.c).
1.
a. shann
/ ãa $^{\text {n }} /$
measure
b. say
/sã/
pound

The consonants in parentheses ( $/ \mathrm{p}, \mathrm{g}, \mathrm{h} /$ ) are very rare. All of them occur only in onsets. The first, /p/, seems to exist chiefly in borrowed or onomatopoeic words. The second, /g/, has only two instantiations word-initially. However, [g] also occurs as an allophone of $/ \mathrm{k} / \mathrm{in}$ intervocalic position and after voiced consonants (Nicolson 2010). The palatalized stop, $/ \mathrm{g} /$, in contrast with $/ \mathrm{g} /$, is very common. The third consonant, $/ \mathrm{h} /$, may have come about through sound change. It occurs most often in the cluster $/ \mathrm{hl} /$, which may have originally been $/ \mathrm{sl} /$ or $/ \mathrm{t} 1 /$. The clusters (/sl/ and /tl/) are not attested in Siamou, and there is some evidence from irregular verb paradigms to support the sound change theory. In Table 2.2, the bare verbs have either $/ \mathrm{s} / \mathrm{or} / \mathrm{t} /$ in the onset while both the imperfectives have the cluster $/ \mathrm{hl} / .^{7}$ This is a common pattern.

Table 2.2 Sound Change from /s/ to $/ \mathrm{h} /$

| Gloss | Bare Verb | Imperfective |
| :--- | :--- | :--- |
| take | s $\dot{\varepsilon}$ | hláan |
| shoot (an arrow) | t'́ | hláan |

Additional evidence for $/ \mathrm{h} /$ arising from sound change comes from words where $/ \mathrm{s} / \mathrm{or} / \mathrm{f} /$ are in free variation with $/ \mathrm{h} /(2)$.
2.
a. saay/haay
also
b. flo/hlo
truth

### 2.1.2 There Are 7 Oral Vowels and 4 Nasal Vowels

Siamou has 11 phonemic vowels, shown in Table 2.3. There are seven oral vowels, and four nasal vowels (Traoré 1984, Nicolson 2010). The vowels /u, o, e/ cannot be nasalized.

[^6]Table 2.3 Siamou Vowel Inventory ${ }^{8}$

| Siamou Vowels | oral |  | nasal |  |
| :--- | :--- | :--- | :--- | :--- |
|  | front | back | front | back |
| high | i | u | $\tilde{\text { in }}$ |  |
| mid-high | e | o |  |  |
| mid-low | $\varepsilon$ | $\Omega$ | $\tilde{\varepsilon}$ | $\tilde{\jmath}$ |
| low | a |  | $\tilde{\text { a }}$ |  |

The high vowels are realized as -ATR ([I] and [ J$]$ ) in closed syllables (Nicolson 2010).
According to Traoré (1984) the reduced vowel [ə] frequently occurs in unstressed syllables. In the examples given by Traoré (1984:80), shown in Table 2.4, / $2 /$ appears exclusively in the first syllable.

Table 2.4 Siamou Words with / $2 /$

| Word | Phonological Representation | Gloss |
| :---: | :---: | :---: |
| múkâl | /m'́'kâl/ | tô (corn porridge) |
| kìyenn | /kò'je $\tilde{\mathrm{n}}^{\text {/ }}$ | country |
| gbukel | /gba'kel/ | speech |
| tokpâr | /to'kpâr/ | strong |

From what is currently known, it does not appear that Siamou contrasts vowel length, although syllables with complex tones often sound like they have longer vowels (Nicolson 2010). For example, the vowel of lii (3a) sounds longer than the vowel of $l i(3 b)$ because lii has a contour tone while the tone of $l i$ is level. Currently, this has not been measured.
3.
a. $\quad \begin{aligned} & \text { líi } \\ & \\ & \text { grainery }\end{aligned}$
b. lí
stop (V)

### 2.1.3 Syllable Structure $C(C) V(C)(C)$

With a few exceptions (see below), the most basic Siamou syllable structure is CV (4).
4. CV Syllables
a. du
ask
b. má
other

[^7]Any consonant may occur in onset position. However, the consonant /r/ can not occur wordinitially, except in borrowed words, such as radio. It can occur inter-vocalically, i.e. in onset position word-internally (Nicolson 2010).

Complex onsets are permitted, but with heavy restrictions: they must never be more than two consonants, and the second consonant must always be a liquid $/ 1, \mathrm{r} /$ or an approximant $/ \mathrm{j}, \mathrm{w} /$ (5). There are other (rarely violated) constraints on onset clusters as well. For example, a coronal (alveolar/palatal) stop or nasal (/t, d, g, n, $\mathrm{n} /$ ) can not occur with a liquid (/l, r/). Also, a labiovelar (/kp, gb, $\mathrm{gm} /$ ) can not be followed by a glide (/w, $\mathrm{j} /($ Nicolson 2010).

## 5. CCV Syllables

a. fráa
b. fyع okra (N) track (N)

Coda consonants are permited, but restricted to liquids, $/ 1, \mathrm{r} /$ and a nasal (tentatively transcribed as $/ \mathrm{y} /$ and written $n$ ) (6-7) (Nicolson 2010). The nasal consonant is discussed in more detail below.
6. CVC Syllables
a. $\quad$ bâl $\quad$ curse (V)
b. bur back (N)
c. fên call (V)

## 7. CCVC Syllables

a. bw 1
b. bwàr black (Adj)
c. dyèn boast (V)

Complex codas are formed with a liquid and the coda nasal $n$. This means there are a total of two types of complex coda: $/ 1^{\mathrm{n} /}$ or $/ \mathrm{r}^{\mathrm{p} /}$. These are written $\ln$ or $r n$ in Siamou orthography (8-9).
8. CVCC Syllables
a. doln
b. dirn
$\operatorname{root}(\mathrm{N})$

## 9. CCVCC Syllables

a. kwecl-n
b. bwarn
bag/sack (N)

Syllable nuclei are usually restricted to vowels, but there are a few exceptions. The first person pronouns are syllabic nasals (10). Traoré (1984) also appears to consider /r/ as a possible syllable nucleus, according to the examples in (11). In (11), the top line contains a word as it appears in Traoré (1984), the second line is the current Siamou spelling of the word, and the third line is an English translation.
10.
a. ń 1SG
b. $\hat{n}$
1PL
11.
a. $\quad b \bar{r}$
bur back (N)
b. $d \overline{\tilde{r}}$ dirn $\operatorname{root}(\mathrm{N})$
(from Traoré 1984:22, 86)

For the most part, syllables must have an onset. I counted a total of twenty-two vowelinitial words or suffixes in the Siamou dictionary (Thiessen et al. n.d), mainly grammatical words and suffixes (Table 2.5). There are also a number of proper names that begin with a vowel (e.g. Aisha).

Table 2.5 Siamou Vowel-Initial Morphemes

| Free Morphemes | Bound Morphemes |
| :---: | :---: |
| Determiners | Noun Suffixes |
| à 3SG, DEF1 | -é DIM |
| á 2SG, LOG | -î DEF2 (harmonizing) |
| àn 3SG.POSS | -è PL (harmonizing) |
| án 2SG.POSS | -غ̀ 'voilà' (that there) |
| àkun 3SG.EMPH |  |
| ákún 2SG.EMPH |  |
| àni DEM |  |
| Conjunctions | Verb Suffixes |
| àmi and (used only with numerals) | -a PRSP1 |
| árí like | -è CMPL |
| àyìwà then, as (borrowed from Jula) | -ê IMPERATIVE INTENSIFIER |
| Right-edge particles |  |
| a Q |  |
| ín PST |  |
| 0 COP |  |
| Yes/No |  |
| oo yes |  |
| owo no |  |

The nasal that occurs in coda position has a very reduced quality, making it difficult to hear. It sounds similar to a nasalized vowel, but with a slightly velar place of articulation (Nicolson p.c). This phoneme is written $n$ in Siamou orthography, and $/ \bar{g} /$ in phonetic transcriptions. People working on Siamou have called it a reduced nasal consonant (RNC). ${ }^{9}$ It is contrastive with vowel nasality, which is written $\eta$. The RNC can co-occur with nasal vowels. (If the RNC were simply some kind of late-onset nasality, I do not think co-occurrence would be possible.) With respect to nasals, there are four types of syllable rimes, ${ }^{10}$ listed in (12). The first one is completely oral, and the other three involve either the RNC (12b), a nasalized vowel (12c) or both (12d).
12. a. oral vowel (without RNC) (written V)
b. oral vowel with RNC (written Vn)
c. nasal vowel (without RNC) (written $\mathrm{V} \eta$ )
d. nasal vowel with RNC (written V $\eta n$ )

The following examples show that these four rime types are contrastive. The examples in (13) show that all three kinds of nasalized rimes (12b-d) are contrastive. The examples in (14-16) show that an oral rime is contrastive with all three kinds of nasal rime.
13.

| a. | yéen |  | oral vowel with RNC |
| :---: | :---: | :---: | :---: |
|  | feather |  |  |
| b. | yéeท | [jé! ${ }^{\text {ć }}$ ] | nasal vowel |
|  | young (referring to animals) |  |  |
| c. | yézŋn |  | nasal vowel with RNC |
|  | fish |  |  |

14. 

| a. | wâ <br> cloth | [wâ] | oral vowel |
| :--- | :--- | :---: | :---: |
| b. | wân <br> mother-in-law of wife | [wã] | nasal vowel |

15. a. wò [wò] oral vowel
stirring stick

[^8]b. wòn [wò $\left.{ }^{\eta}\right]$ oral vowel with RNC ditch
16. a. fyè
[fjè ] oral vowel
b. fyènn $\left[f j \tilde{̀}^{n}\right]$
massage.PRFV $\quad$ nasal vowel with RNC

The RNC only occurs in coda position. When re-syllabification puts it in onset position, it is realized as an alveolar nasal, $/ \mathrm{n} /$, as the examples in $(17 \mathrm{a}, \mathrm{b})$ with the copular suffix $-\supset$ show. Syllables without the RNC, whether the vowels are oral or nasal, do not pattern this way ( $17 \mathrm{c}, \mathrm{d}$ ) (Nicolson 2010).
17.

| a. | $\begin{aligned} & \text { ban } \quad \Rightarrow \\ & {\left[\text { ba }^{n}\right]} \\ & \text { poison } \end{aligned}$ | ba-no <br> [banっ] <br> It is a poison. | oral vowel with RNC |
| :---: | :---: | :---: | :---: |
| b. | kpenn $\Rightarrow$ | kpen-no | nasal vowel with RNC |
|  | [ $\mathrm{kp} \tilde{\varepsilon}^{\mathrm{g}}$ ] | [kpẽno] |  |
|  | hand | It is a hand. |  |
| c. | ba $\quad \Rightarrow$ | ba-o | oral vowel |
|  | [ba] | [bas] |  |
|  | yam | It is a yam. |  |
| d. | táay $\quad \Rightarrow$ | táay-o | nasal vowel |
|  | [tấ!ấ] | [tắ!ão] |  |
|  | rock | It is a rock. |  |

### 2.2 Tone Melody Inventory

This section has three parts. The first section, 2.2.1, introduces the eight tone melodies of Siamou. Section 2.2.2 shows how the three tone melodies that usually surface as M tone differ from each other (the $\mathrm{M}, \mathrm{M}(!\mathrm{H})$ and $\mathrm{M}(\mathrm{L})$ tone melodies). Finally, section 2.3 introduces the three inflectional tone classes of Siamou aspect: L, M and HL. The descriptive generalizations in 2.2 are mostly from Thiessen (2005), Thiessen et al. (n.d) and Nicolson (2010).

### 2.2.1 Siamou Tone Melodies

Siamou has three main tones: high (H), mid (M), and low (L). There is also another tone, which at this point is understood to be a downstepped high tone $(!\mathrm{H})$. The ! H tone has a pitch that is
lower than a H tone, but higher than a M tone. However, it does not seem to have the same status as the $\mathrm{H}-, \mathrm{M}$ - and L tone levels because it never occurs on its own: there is no ! H tone melody group. These tones are the "ingredients" of Siamou's tone melodies.

Every syllable has one of eight tone melodies. ${ }^{11}$ These tone melodies can be categorized as either level tone melodies, "extended" tone melodies, or contour tone melodies. Level tone melodies are made up of only one tone. There are three level tone melodies: H, M, and L.

Extended tone melodies are tone melodies that are usually level, but have underlying complexity, which I explore further in 2.2.2. There are two extended tone melodies: $\mathrm{M}(\mathrm{L})$ and $\mathrm{M}(!\mathrm{H})$. Both of these tone melodies usually surface as mid tone, but not always. They also sometimes affect the tone of following syllables.

Contour tone melodies are tone melodies that are made up of more than one tone. Siamou has three contour tone melodies: HL (a tone that starts high and falls to low), H ! H (a tone that starts high and falls slightly), and M!HL (a tone that starts as mid, rises slightly and then falls).

Table 2.6 gives the names of each tone melody and their phonetic realization in terms of numerals, with 1 being the highest tone and 5 being the lowest. A sequence of numerals marks a contour tone.

Table 2.6 Siamou Tone Melodies

| Tone Melody | Phonetic Realization | Category |
| :--- | :--- | :--- |
| H | 1 (or 2) | Level |
| L | 4 (or 45) |  |
| M | 3 |  |
| M(L) | 3 or 4, and may affect tone of the following syllable | Extended |
| M $(!$ H $)$ | 3 or 32 and may affect tone of the following syllable |  |
| HL | 14 (or 24$)$ | Contour |
| H!H | 12 |  |
| M!HL | 324 or $323^{12}$ |  |

Two level tone melodies are shown first: H and L. Next, there are three tone melodies (M, $\mathrm{M}(!\mathrm{H})$, and $\mathrm{M}(\mathrm{L})$ ) which are all realized as a level M tone in isolation, but which may be

[^9]distinguished in certain contexts, which are discussed below (section 2.2.2). The final three tone melodies are contours. There are two falling contours ( HL and $\mathrm{H}!\mathrm{H}$ ) and one convex (risingfalling) contour (M!HL). Interestingly, there are no surface rising tones in Siamou.

There is no full set of words contrasting all eight tone melodies. However, Table 2.7 shows a set of words that contrast the first seven tone melodies. If no word or morpheme is available for a particular category, it is marked with a line ---.

Table 2.7 Tone Contrasts for [kpar] ${ }^{13}$

| Tone Melody | Morpheme | Gloss |
| :--- | :--- | :--- |
| H | kpár | bone |
| L | kpàr | mat |
| M | kpar | angle |
| M(L) | kpar | umbilical cord |
| M(!H) | kpar | monkey |
| HL | kpâr | expensive |
| H!H | kpáar | back of head |
| M!HL | --- | --- |

The eighth tone melody M!HL is shown in Table 2.8 to be contrastive.
Table 2.8 Tone Contrasts for [bar] ${ }^{14}$

| Tone Melody | Morpheme | Gloss |
| :--- | :--- | :--- |
| H | --- | --- |
| L | bàr | strap |
| M | bar | hernia |
| M(L) | --- | --- |
| M(!H) | bar | rabbit |
| HL | bâr | work |
| H!H | --- | --- |
| M!HL | baar | conversation |

All eight tone melodies are realized on nouns, verbs and adjectives. However, not all melodies are equally robust in each category. In order to determine the frequency of each tone melody, I looked at all the single syllable nouns and verbs in the Siamou dictionary (Thiessen et al. n.d). This information is shown in Table 2.9. Data for adjectives and other grammatical categories is not available at this time.

[^10]Table 2.9 Tone Melody Frequency

| Tone Melody | Verb Frequency |  | Noun Frequency |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Number | Percentage | Number | Percentage |
| H | 72 | $\mathbf{2 6 . 9 \%}$ | 58 | $10.8 \%$ |
| L | 37 | $13.8 \%$ | 82 | $15.2 \%$ |
| $\mathbf{M}$ | 39 | $14.6 \%$ | 123 | $\mathbf{2 2 . 9 \%}$ |
| M(L) | 53 | $\mathbf{1 9 . 8 \%}$ | 22 | $4.1 \%$ |
| $\mathbf{M ( ! H )}$ | 29 | $10.8 \%$ | 60 | $11.1 \%$ |
| HL | 24 | $8.9 \%$ | 76 | $\mathbf{1 4 . 1 \%}$ |
| H!H | 11 | $4.1 \%$ | 102 | $\mathbf{1 9 . 0 \%}$ |
| M!HL | 3 | $\mathbf{1 . 1 \%}$ | 15 | $\mathbf{2 . 8 \%}$ |
| Total | 268 | $100 \%$ | 538 | $100 \%$ |

This information is shown graphically in Figure 2.1. From the chart, we see that H and $\mathrm{M}(\mathrm{L})$ are the most common categories for verbs, while M and $\mathrm{H}(!\mathrm{H})$ are the most common categories for nouns. M!HL tone melody words are rare in both categories. Several of the members of the M!HL group, including all three verbs, are borrowed from two-syllable Jula words (Thiessen et al. n.d).


Figure 2.1 Noun and Verb Frequency across Tone Melody Groups

The following subsections take a more detailed look at the level tones (2.2.1.1), extended tones (2.2.1.2) and contour tones (2.2.1.3).

### 2.2.1.1 Level Tone Melodies

This section covers the three level tone melodies: H, M, and L.

### 2.2.1.1.1 H Tone Melody Group

The first tone melody group is the H tone group. This group has more one-syllable verbs than any other group ( $26.9 \%, 72 / 268$ ), and it has numerous one-syllable nouns ( $10.8 \%, 58 / 538$ ), as well as other grammatical categories, some of which are shown in Table 2.10.

Table 2.10 H Tone Melody Group

| Word | Gloss | Category |
| :--- | :--- | :--- |
| a. tí | tree | noun |
| b. tín | weave | verb |
| c. má | other | adjective |
| d. --- | --- | postposition |
| e. mí | be.there | particle |
| f. -é | DIM | suffix (on noun) |

### 2.2.1.1.2 L Tone Melody Group

The next group contains syllables with a L tone. This group contains many nouns and a moderate number of verbs $(13.8 \%, 37 / 268)$. There are also a number of particles and suffixes that have a L tone ( $15.2 \%, 82 / 538$ ).

Table 2.11 L Tone Melody Group

| Word | Gloss | Category |
| :--- | :--- | :--- |
| a. b̀̀ | arm | noun |
| b. kòl | sew | verb |
| c. dyàn | other | adjective |
| d. --- | --- | postposition |
| e. bè | MOD | particle |
| f. -è | CMPL | suffix (on verb) |

### 2.2.1.1.3 M Tone Melody Group

The M tone group has more nouns in it than any other group $(22.9 \%, 123 / 538)$, and it has a moderate number of verbs as well ( $14.6 \%, 39 / 268$ ).

Table 2.12 M Tone Melody Group

| Word | Gloss | Category |
| :--- | :--- | :--- |
| a. t $\varepsilon$ l | proverb | noun |
| b. sa | lock | verb |
| c. t $\varepsilon 1$ | tasteless | adjective |
| d. to | to/against | postposition |
| e. ri | FIN | particle |
| f. -a | PRSP1 | suffix (on verb) |

### 2.2.1.2 Extended Tone Melodies

This section covers the two extended tone melodies: $M(L)$ and $M(!H)$.

### 2.2.1.2.1 M(L) Tone Melody Group

The $\mathrm{M}(\mathrm{L})$ tone group contains syllables that are M tone in most contexts, which means that they are indistinguishable from the $M$ tone group. However, in some contexts the $M(L)$ tone melody surfaces as L tone (see 2.2.2, see also Déchaine 1993 for discussion of ambitonal tone classes in Igbo). This group has many verbs ( $19.8 \%, 53 / 268$ ), but very few nouns $(4.1 \%, 22 / 538)$.

Table 2.13 M(L) Tone Melody Group

| Word | Gloss | Category |
| :--- | :--- | :--- |
| a. nun | water | noun |
| b. nєn | put | verb |
| c. dwan | small | adjective |
| d. m | inside | postposition |
| e. --- | --- | particle |
| f. --- | --- | suffix |

### 2.2.1.2.2 M(!H) Tone Melody Group

Like the $\mathrm{M}(\mathrm{L})$ group, the $\mathrm{M}(!\mathrm{H})$ group also contains syllables that are usually M tone. In some contexts, they surface as a M tone followed by a lowered H tone (written !H). This group has a moderate number of nouns $(11.1 \%, 60 / 538)$ and verbs $(10.8 \%, 29 / 268)$.

Table $2.14 \mathrm{M}(!\mathrm{H})$ Tone Melody Group

| Word | Gloss | Category |
| :--- | :--- | :--- |
| a. nan | wood | noun |
| b. ny\&l | ask | verb |
| c. nar | sharp | adjective |
| d. ta | on | postposition |
| e. --- | --- | particle |
| f. -ton | ORD | suffix (on numeral) |

### 2.2.1.3 Contour Tone Melodies

This section covers the three contour tone melodies: HL, H!H, and M!HL.

### 2.2.1.3.1 HL Tone Melody Group

The HL tone melody group contains a contour tone that falls from high to low. There are many nouns in this group ( $14.1 \%, 76 / 538$ ), but only a few verbs $(8.9 \%, 24 / 268)$.

Table 2.15 HL Tone Melody Group

| Word | Gloss | Category |
| :--- | :--- | :--- |
| a. bâ | river | noun |
| b. mwôn | swear | verb |
| c. ̂̂ | white | adjective |
| d. nyân | ahead/before | postposition |
| e. nâ | EMPH | particle |
| f. $-\hat{1}$ | DEF2 | suffix (on noun) |

### 2.2.1.3.2 H!H Tone Melody Group

The $\mathrm{H}!\mathrm{H}$ tone melody group is also a falling tone, but it only falls slightly. ${ }^{15}$ This group has many nouns ( $19 \%, 102 / 538$ ), but very few verbs $(4.1 \%, 11 / 268)$.

Table 2.16 H!H Tone Melody Group

| Word | Gloss | Category |
| :--- | :--- | :--- |
| a. yé n | feather | noun |
| b. tíin | load (onto the head) | verb |
| c. yé $\varepsilon$ y | young (of animals) | adjective |
| d. fléen | on | postposition |
| e. wa | and/what about | particle |
| f. -mun | STATIC (?) | suffix (on verb (?)) |

[^11]
### 2.2.1.3.3. M!HL Tone Melody Group

The final tone melody group is the most controversial. Most discussions of Siamou tone do not mention it (Thiessen 2005, Nicolson et al. n.d). In the dictionary, it is referred to as a "modulated" tone. Here I have labeled it M!HL, since that seems to be the most common of the modulated tones. However, this "group" actually encompasses a number of different complex contour tones, but a rising-falling tone is the most common (Nicolson p.c). There are very few nouns $(2.8 \%, 15 / 538)$ and even fewer verbs $(1.1 \%, 3 / 268)$ in this category. Many of them are borrowed.

Table 2.17 M!HL Tone Melody Group

| Word | Gloss | Category |
| :--- | :--- | :--- |
| a. flos | basket | noun |
| b. ke\&ln | study/read/teach | verb |
| c. jaal | evil | adjective |
| d. --- | --- | postposition |
| e. --- | --- | particle |
| f. --- | --- | suffix |
| g. kiin | seven | numeral |

### 2.2.2 The Three "Mid" Tones

Words with $\mathrm{M}, \mathrm{M}(\mathrm{L})$, and $\mathrm{M}(!\mathrm{H})$ tone melodies all surface as M in many contexts. This means that in these contexts, the difference between these tone melodies is neutralized, and it is impossible to differentiate between them (Thiessen 2005). One such context is uninflected verbs, which are used in imperatives. The examples below show pairs of uninflected verbs that belong to different tone melody groups, but which are indistinguishable in the given context: they all bear a M tone. In (18), the verb gbal ('separate') is homophonous with the verb gbal ('unearth'), even though the first one belongs to the M tone melody group and the second belongs to the $\mathrm{M}(!\mathrm{H})$ tone melody group. Similarly, in (19), kyay ('help'), which is part of the M group is homophonous with kyay ('scratch'), which is part of the $\mathrm{M}(\mathrm{L})$ group. In (20), fli ('survive', $\mathrm{M}(!\mathrm{H}))$ and $f l i($ 'open', $\mathrm{M}(\mathrm{L}))$ are also homophonous in the imperative.
18.

| a. | À | gbal. |
| :--- | :--- | :--- |
|  | 3SG separate |  |
|  | Spread it. |  |
|  | French: Ecartes-le (C) |  |

b. $\grave{\mathrm{A}}$ gbal.

3SG unearth
Unearth it.
French: Déterres-le (C)
19. a. À kyay.

3SG help
Help him/it.
French: Aide-le (C)
b. $\grave{\mathrm{A}}$ kyay.

3SG scratch
Scratch him/it.
French: Gratte-le. (C)
20.
a. $\quad \grave{\mathrm{A}} \quad \mathrm{ki} \quad$ fli. 3SG NFP survive
May it survive.
French: Que ça soit survivant. (C)
$\begin{array}{llll}\text { b. } & \text { À } & \text { ki } & \text { fli. } \\ & \text { 3SG } & \text { NFP } & \text { open }\end{array}$
May it open.
French: Que ça soit ouvert. (C)

Similarly, nouns from these three tone melody groups are indistinguishable in many contexts, such as when they precede a L tone verb, as in (21).
21.
a. $\grave{\mathrm{A}}$ ri kpar 3SG FIN corner (M) She took a corner. French: Elle a pris un angle. (C)
$\begin{array}{llll}\text { b. } & \text { À } & \text { ri } & \text { kpar } \\ & \text { 3SG } & \text { FIN } & \text { monkey }(\mathrm{M}(!\mathrm{H})\end{array}$ She took a monkey.
French: Elle a pris un singe. (C)
$\begin{array}{llllll}\text { c. } & \text { À } & \text { ri } & \text { kpar } & \text { gbj̀n. } & \text { tone melody: } \mathrm{M}(\mathrm{L}) \\ & \text { 3SG } & \text { FIN } & \text { umbilical cord }(\mathrm{M}(\mathrm{L}) & \text { take.PRFV } & \\ & \text { She took an umbilical cord. } & \\ & \text { French: Elle a pris un cordon ombilical. (C) }\end{array}$

We know that the $\mathrm{M}, \mathrm{M}(!\mathrm{H})$ and $\mathrm{M}(\mathrm{L})$ tone melody groups are distinct because they sometimes pattern in different ways. However, it does not appear that there is any one context in
which all three groups are distinct. Rather, one context serves to distinguish the M class from $M(!H)$ and $M(L)$, another context distinguishes $M(!H)$ from $M$ and $M(L)$, and a third context distinguishes $\mathrm{M}(\mathrm{L})$ from M and $\mathrm{M}(!\mathrm{H})$. Below, I discuss three contexts that allow us to differentiate verbs that belong to these groups, and two contexts that allow us to differentiate nouns that belong to these groups.

For verbs, inflected forms serve as diagnostic contexts. Verbs inflected with the HL tone prospective aspect 2 suffix -bê serve to distinguish $M$ verbs from the other two. Verbs inflected with the $M$ tone imperfective suffix $-n$ (or the prospective aspect 1 suffix $-a$ ) distinguish $M(!H)$ verbs from the other two. And verbs inflected with the $L$ tone perfective suffix $-L$ (or the low tone stative suffix -nغ̀n, or the low tone completive suffix -è) show that $\mathrm{M}(\mathrm{L})$ verbs are distinct from the other two (Thiessen 2005). This is summarized in Table 2.18.

Table 2.18 Differentiating Mid Tone Verbs

|  | Context 1: HL <br> Prospective Aspect 2 -b $\hat{\varepsilon}$ | Context 2: M <br> Imperfective -n <br> Prospective 1 $-a$ | Context 3: L <br> Perfective - $L$ <br> Stative - $n \grave{n}$ <br> Completive - $\grave{e}$ |
| :--- | :--- | :--- | :--- |
| M | distinct |  |  |
| $\mathrm{M}(!\mathrm{H})$ |  | distinct |  |
| $\mathrm{M}(\mathrm{L})$ |  |  | distinct |

For nouns, there are two relevant contexts. When nouns occur before a H tone verb, the M tone group patterns differently than the other two. When nouns occur before the M tone copula $-\supset$, the $\mathrm{M}(!\mathrm{H})$ group patterns differently than the other two (Thiessen 2005). For nouns, I am not aware of a context in which $M(L)$ patterns differently than the other two. However, the $M(L)$ group is differentiated in this case because it behaves like a $\mathrm{M}(!\mathrm{H})$ noun in context 1 and like a M noun in context 2. Table 2.19 summarizes these details.

Table 2.19 Differentiating Mid Tone Nouns

|  | Context 1: -H <br> Noun- H Verb | Context 2: -M <br> Noun- Copula | Context 3: -L? <br> No Data |
| :--- | :--- | :--- | :--- |
| M | distinct |  |  |
| $\mathrm{M}(!\mathrm{H})$ |  | distinct |  |
| $\mathrm{M}(\mathrm{L})$ |  |  |  |

Only two contexts are necessary to confirm a three-way split. However, the third context (which is only available for verbs, according to what is currently known) is useful to show that $M(L)$ is not simply indeterminate between $M$ and $M(!H)$, but actually forms a separate tone melody group.

First I look at the three contexts for verbs. The first context is shown in (22). When inflected with the HL tone prospective aspect 2 suffix $-b \hat{\varepsilon}, \mathrm{M}$ verbs have a $\mathrm{M}-\mathrm{L}$ tone melody (22a), while $M(!H)$ verbs and $M(L)$ verbs have a M-!HL tone melody (22b-c). The surface tones are written above the verb and its suffix.
22. a.

M-L
gbal-bè.
separate-PRSP2
She's going to spread it.
French: Elle va l'écarter. (C)
b.


She's going to unearth it.
French: Elle va le déterrer. (C)
c.

| À | b $^{\prime}$ | à | M-! $\mathbf{H L}$ <br> gbe-b $\hat{\boldsymbol{\varepsilon}}$. |
| :--- | :--- | :--- | :--- |
| 3SG | MOD | 3SG | drink-PRSP2 |

bare verb: gbe tone melody: $\mathrm{M}(\mathrm{L})$

She's going to drink it.
French: Elle va le boire. (L)
The second context involves verbs inflected for imperfective aspect. In this case, $M$ and $M(L)$ verbs have a slightly falling $M$ tone (23a-b), while $M(!H)$ verbs have a $M!H M$ tone (23c). ${ }^{16}$
23. a.

|  |  |  | M <br> À <br> kyaày-n. |
| :--- | :--- | :--- | :--- |
| 3SG | FIN | à | 3SG |

bare verb: kyan tone melody: M

She is helping him.
French: Elle est en train de l'aider. (C)

[^12]b.

| ̀ |  |  | M <br> Ayà̀n-n. |
| :--- | :--- | :--- | :--- |
| 3SG | riN | à | 3SG |
| scratch-IMPF |  |  |  |

bare verb: kyan tone melody: $\mathrm{M}(\mathrm{L})$

She is scratching him.
French: Elle est en train de le gratter. (C)
c.

|  |  |  | M!HM | bare verb: kyenl tone melody: $\mathrm{M}(!\mathrm{H})$ |
| :---: | :---: | :---: | :---: | :---: |
| À | r' | à | kyeenl-n. |  |
| 3SG | FIN | 3 SG | skin-IMPF |  |
| She is engraving it. |  |  |  |  |
| French: Elle est en train de le graver. (C) |  |  |  |  |

The third context involves perfective verb forms. In this case, $M$ and $M(!H)$ verbs have a $M$ tone (24a-b), while $M(L)$ verbs have a $L$ tone (24c). This same pattern can be observed on verb roots preceding the ( L tone) completive and stative suffixes.
24.
a.

|  |  |  | $\mathbf{M}$ |
| :--- | :--- | :--- | :--- |
| À | r' $^{\prime}$ | à | fliy. |
| 3SG | FIN | 3SG | flatter.PRFV |

She manipulated/tricked/flattered him.
French: Elle l'a manivellé/trompé/flatté. (C)
b.

## M

$\begin{array}{lll}\text { À } & \text { ri } & \text { flع. }{ }^{17} \\ \text { 3SG } & \text { FIN } & \text { survive.PRFV }\end{array}$
She survived.
French: Elle a survécu. (C)
c.

| À | $r$ | à |
| :--- | :--- | :--- |
| 3SG | FIN | 3 3SG |

L
flì.
open.PRFV
bare verb: flin
tone melody: M
bare verb: fli
tone melody: $\mathrm{M}(!\mathrm{H})$
bare verb: fli
tone melody: $\mathrm{M}(\mathrm{L})$

She opened it.
French: Elle l'a ouvert. (C)
Next I look at the two contexts that differentiate mid tone nouns. The first context is preceding a $H$ tone verb. In this case, $M$ nouns surface as $M$, and they have no effect on the tone of the following verb: it remains $H$, as in (25a). Both $M(L)$ and $M(!H)$ nouns, on the other hand, cause the H verb to be realized as ! H , as shown in (25b-c). ${ }^{18}$ In this context, the nouns

[^13]themselves are all realized as $M$. The effect of $M(L)$ and $M(!H)$ nouns is to lower the tone of the following verb from H to ! H (Thiessen 2005).
$25 .{ }^{19}$
a.

|  | M |
| :--- | :--- |
| Ń | tan |
| 1SG | sugar.pea |

H

I gathered sugar peas.
b.

|  | M |
| :--- | :--- |
| N | ton |
| 1SG | iron |

I gathered pieces of metal.
c.

|  | M |
| :--- | :--- |
| N | $\mathrm{bin}^{3}$ |
| 1SG | seed |

kró. tone melody of tan: M gather.PRFV
! H
kró. tone melody of ton: $\mathrm{M}(\mathrm{L})$ gather.PRFV
! H
kró. tone melody of bin: $\mathrm{M}(!\mathrm{H})$ gather.PRFV grif gathered seeds.

The second context that differentiates mid tone nouns is the position preceding the copula っ. As above (25), nouns in this context all surface as M. Following both $M$ and $M(L)$ nouns, the tone of the copula is realized as $\mathrm{M}(26 \mathrm{a}-\mathrm{b})$. However, after $\mathrm{M}(!\mathrm{H})$ nouns, it is realized as a !HM contour (26c).
26.

| a. | M | M | tone melody of yin: M |
| :---: | :---: | :---: | :---: |
|  | Yin | --. |  |
|  | name | COP |  |
|  | It is a name. |  |  |
| b. | M | M | tone melody of dar: $\mathrm{M}(\mathrm{L})$ |
|  | Dar | --. |  |
|  | tail | COP |  |
|  | It is a tail. |  |  |
| c. | M | ! ${ }^{\text {M }}$ | tone melody of kar: $\mathrm{M}(!\mathrm{H})$ |
|  | Kar scorpion | --. |  |
|  |  | COP |  |
|  | It is a scorpio |  |  |

[^14]
### 2.2.3 Three Inflectional Tone Classes: Low, Mid, High-Low

Of the eight tone melodies introduced in 2.2.1, only a subset are used in the aspectual paradigm. Siamou has six aspectual suffixes: perfective, stative, completive, imperfective, prospective aspect 1 and prospective aspect 2 . These suffixes may bear one of three tone melodies: L (perfective $-L$, completive $-\grave{e}$ and stative $-n e ̀ n$ ), M (imperfective $-n$ and prospective aspect $1-a$ ) and HL (prospective aspect $2-b \hat{\varepsilon}) .{ }^{20}$ These aspectual suffixes are the focus of chapter 3.

The perfective is marked by a $L$ tone suffix. The completive is marked by the suffix $-\dot{e}$, and the stative by the suffix -nèn. These three suffixes make up the L tone aspectual class.

The M tone class has two members: the imperfective, which is a M tone nasal consonant suffix, $-n$, and the prospective aspect 1 , which is the M tone suffix $-a$.

One aspectual suffix has a HL tone melody. This is the prospective aspect $2,-b \hat{\varepsilon}$.
Table 2.20 lists Siamou's eight tone melodies, all of which occur on verbs, and shows three tone melodies that are used in the aspectual paradigm.

Table 2.20 Aspectual Tone Melodies

| Tone Melodies | with Verbs | with Aspectual Suffixes |
| :--- | :--- | :--- |
| H | $\checkmark$ | - |
| L | $\checkmark$ | $\checkmark$ |
| M | $\checkmark$ | $\checkmark$ |
| M(!H) | $\checkmark$ | - |
| M(L) | $\checkmark$ | - |
| HL | $\checkmark$ | $\checkmark$ |
| H!H | $\checkmark$ | - |
| M!HL | $\checkmark$ | - |

### 2.3 Basic Syntax

In this section, I cover general syntactic information about Siamou in order to provide a frame of reference for the topics discussed in later chapters. Section 2.3.1 is about Siamou word order, 2.3.2 is about the ordering of lexical heads, and 2.3.3 and 2.3.4 are about the extended nominal and extended verbal projections, respectively.

[^15]
### 2.3.1 Basic Word Order Is S (Particle) OV

The basic word order of Siamou clauses is S (Particle) O V (27).
27. $\mathbf{S}$ Part O V

À ri le dì.
3SG FIN food eat.PRFV
S/he ate food.
The particle may be one (or more) of seven, which are introduced in 2.3.4.2. The default particle seems to be ri, which may be simply a marker of finiteness. This particle is often dropped in casual speech, resulting in an SOV word order (28).
28.

| $\mathbf{S}$ | $\mathbf{O}$ | $\mathbf{V}$ |
| :--- | :--- | :--- |
| À | le | dì. |
| 3SG | food | eat.PRFV |

### 2.3.2 The Basic Syntax of Lexical Categories

Lexical heads in Siamou always follow their complement. This includes NPs, VPs, and PPs. Not included in this list are AdjPs. However, so far I have no evidence to show that Siamou adjectives can take complements.

### 2.3.2.1 VP Has Complement-Head Ordering

The head of a VP ( $d i$, 'eat') follows its DP complement (le, 'food'), shown in (29).
29. a. DP V le [di]
food eat eat food
b. DP V nun [gbs]
water drink

### 2.3.2.2 NP Has Complement-Head Ordering

The head of an NP (ymelon, 'king') follows its DP complement (yméen kìyeŋnî, 'our region') (30). ${ }^{21}$

[^16]30.

| a. | DP | N | ŋmézn | kìyenn=1 | [ nmelon ] |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 1 PL | region= $=$ EF2 | king |
|  |  |  | our reg |  |  |

b. DP $\mathbf{N}$ mún
$[\mathrm{t} \quad]=\hat{\jmath}$
1SG.EMPH
father=DEF2
my father

### 2.3.2.3 PP Has Complement-Head Ordering

The head of a PP (wóse, 'with') follows its DP complement (mún, 'me') (31).
31.

| a. | DP | $\mathbf{P}$ | mún <br> 1SG.EMPH <br> with me | [wóse] <br> with |
| :--- | :--- | :--- | :--- | :--- |
| b. | DP | $\mathbf{P}$ | à | 3SG <br> to him $/ \mathrm{her} /$ it |
| to |  |  |  |  |

Although lexical categories are uniform with respect to head-complement ordering, functional categories display mixed properties: some are head-initial and some are head-final in surface structure. This is true for both the nominal and verbal domains. The structures of the nominal and verbal projections are discussed in 2.3.3 and 2.3.4, respectively.

### 2.3.3 The Extended Nominal Projection

The tree below represents the structure of Siamou's nominal projection to the best of my current understanding. At the very bottom is the noun, bisháayn ('child'). It takes an optional kase phrase (KP) complement, which is a possessor. At the next level is the adjective phrase (tiin tiin 'small'). Above this is the plural enclitic $-\dot{e}$, and then the definite enclitic $-\hat{l}$. One step higher is the demonstrative suffix -ni, and then the definite particle $\grave{a}$. The highest level contains the possessive particle $\grave{n}$.
32.


Each level of this tree is discussed in the following subsections, along with a few other topics that are not part of the tree. The first section is about pronouns (2.3.3.1). Subsequent sections cover bare nouns (2.3.3.2), adnominals (2.3.3.3), plurality (2.3.3.4), definiteness (2.3.3.5), possessives (2.3.3.6), and nominalized verbs (2.3.3.7).

### 2.3.3.1 Pronouns

There are two sets of pronouns. I am calling one set the emphatic pronouns (Table 2.21), and the other set regular pronouns (Table 2.22; following Thiessen (2005)), but I do not know the rules that govern the choice of one type of pronoun over the other. The regular pronouns are usually a shortened version of the emphatic pronouns.

Table 2.21 Emphatic Pronouns

|  | Singular |  |  | Plural |  |
| :--- | :--- | :--- | :--- | :--- | :---: |
|  | Form | Tone Melody | Form | Tone Melody |  |
| First Person | mún | H | yméєn | H!H |  |
| Second Person | ákún | H-H | yíkun | H-M |  |
| Third Person | àkun | L-M | yìkun | L-M |  |

Table 2.22 Regular Pronouns

|  | Singular |  | Plural |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Form | Tone Melody | Form | Tone Melody |
| First Person | ń | H | $\hat{n}$ | HL |
| Second Person | á | H | yíi | H!H |
| Third Person | à | L | yì | L |

These pronouns do not inflect for grammatical function, so the same form is used in subject and object position, as well as postpositional object position. In (33), I show the first person singular pronoun $n$ in subject position (33a), in object position (33b) and as the object of a preposition (33c). It has the same form in all positions.
33. a. $\mathbf{N}$ ni kar ŋmón.

1SG FIN scorpion see.PRFV
I saw a scorpion.
b. À-ni $j o=\hat{0}$ ri ń fénn dé Ye-Lóe. ${ }^{22}$ DEF1-DEM guy=DEF2 FIN 1SG call.PRFV QUOT Ye-Lóe
That man called me "Ye-Lóe."
French: Cet homme m’a appelé que "Ye-Lóe" (C)
$\begin{array}{llllll}\text { c. } & \text { Jir } & \text { à } & \text { kel-nèn } & \text { ń } & \text { se. } \\ & \text { someone } & 3 \text { SG } & \text { talk-STAT } & 1 \mathrm{SG} & \text { to }\end{array}$
Someone already spoke to me about it.
French: Quelqu'un m'a déjà parlé. (C)
The second person singular pronoun, $\dot{a}$, also functions as a third person singular reflexive pronoun and logophor. In (34), I show $a$ as a second person pronoun (34a), a reflexive (34b) and a logophor (34c).
34.
$\begin{array}{ll}\text { a. } & \quad \mathbf{A} \\ & \text { 2SG }^{\text {S }}\end{array}$
dòn-nèn
Tòl
in a ?
2SG go-STAT Orodara PST Q

Were you in Orodara?/Had you gone to Orodara?
French: Tu était à Orodara?/ Est-ce que tu était parti à Orodara? (C)

[^17]$\begin{array}{llllllll}\text { b. } & \text { À } & \text { r' } & \text { á } & \text { tyعl-n } & \text { à } & \text { bw }=\hat{\jmath} & \text { mo. } \\ & \text { 3SG } & \text { FIN } & \text { 3SG.RFLX } & \text { wash-IMPF } & \text { DEF1 } & \text { shower=DEF2 } & \text { in }\end{array}$ S/he washes him/herself in the shower. French: Il se lave dans la douche. (L)

| c. | À | $\mathrm{r}^{\prime}$ | à | ló | $\mathrm{d}^{\prime}$ | á | ri | kóəy-n | Tòl. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | FIN | 3SG | say.PRFV | QUOT | LOG | FIN | go-IMPF | Orodara |

He said (it) that he (himself) is going to Orodara.
French: Il a dit qu'il parte à Orodara. (C)
The second person plural pronoun, yii also functions as a third person reflexive (35a) and reciprocal pronoun (35b) and logophor (35c).
35.

| a. |  |  | yii | tyel | $1-n$ | à | $\text { bw } \hat{\imath}=\hat{\jmath}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3PL | FIN |  |  | sh-IMPF | DEF1 | shower= | DEF2 in |
|  | They are washing themselves in the shower. |  |  |  |  |  |  |  |
|  | French: Elles sont en train de se laver dans la douche. (C) |  |  |  |  |  |  |  |
| b. ${ }^{23}$ | Yì | yí |  | fulon | à | nêl | ta. |  |
|  | 3PL |  |  | greet.PRFV | DEF | road | on |  |
|  | They greet each other on the road. |  |  |  |  |  |  |  |
|  | French: Ils se saluent sur la route. (C) |  |  |  |  |  |  |  |
| c. | Yì | r' | à | ló d | d' y'í | ri | kóวŋ-n | Tò |
|  | 3PL | FIN | 3SC | say.PRFV Q | QUOT LOG | PL FIN | go-IMPF | Orodara |
|  | They said (it) that they (themselves) are going to Orodara. French: Elles ont dit qu'elles partent à Orodara. (C) |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

The third person singular pronoun $\grave{a}$ also functions as the definite particle. ${ }^{24}$ I will talk about this more in 2.3.3.5 when I look at definiteness.

Notice that the second and third person pronouns have the same segmental form, but different tone melodies. This is true for both the singular ( $(\dot{a}, \grave{a})$ and plural pronouns (yíi, yi). Also, the singular and plural first person pronouns have the same segmental form but different tone melodies ( $n, \hat{n}$ ). ${ }^{25}$

[^18]
### 2.3.3.2 Bare Nouns: $\mathbf{N}$

The simplest DP is a bare noun (36). The most salient interpretation for a bare noun is singular and indefinite. However, bare nouns are usually number neutral, which means that they may be interpreted as plural in certain contexts, as I discuss below when I talk about pluralization.
36.
a. $\quad \mathrm{N}$
bisháayn
child
a child/(children)
b. N
wâ
cloth
cloth/(cloths)

### 2.3.3.3 Adnominals: N AP

Adjunct modifiers generally occur to the right of the noun in Siamou (37). (This is different from complements, which occur to the left of the noun, as I showed in (30).)
37.

| a. | N | AdjP | bisháann <br> child <br> a small child | tíin <br> small |
| :--- | :--- | :--- | :--- | :--- |
| b. | N | AdjP | wâ <br> cloth <br> black cloth | bwàr <br> black |

### 2.3.3.4 Plurality: Enclitic =è

Plurality may be overtly marked as an enclitic that attaches to $\mathrm{NP},{ }^{26}$ but it does not always need to be marked because the bare noun itself can cover plural reference. The plural enclitic is a low tone mid-front vowel, -è (as argued in Toews (2008) following Nicolson (2010)). ${ }^{27}$ It occurs in this form $(-\dot{e})$ when the base it attaches to ends in a liquid. ${ }^{28}$ If the base ends in a vowel or a nasal consonant, then it causes some phonological changes to the base. These changes usually include vowel fronting and tone changes, and dropping of the nasal coda consonant, if there is one.

[^19]These changes are not completely consistent, so please do not let any exceptions in the examples below confuse or anger you.
38.
a. $\mathrm{N} \quad \mathrm{NUM}$
bishéèn
child.PL
children
$\begin{array}{lllll}\text { b. } & \mathrm{N} & \mathrm{NUM} & \begin{array}{l}\text { w } \hat{\varepsilon} \\ \text { cloth.PL } \\ \text { cloths/clothes }\end{array} & \text { (from wâ 'cloth') } \\ \text { c. } & \mathrm{N} & \mathrm{NUM} & \begin{array}{l}\text { bóòl } \\ \text { hammer.PL } \\ \text { hammers }\end{array} & \text { (from bóol 'hammer') }\end{array}$

Note that the nasal consonant $(n)$ is gone. The vowel changes from $/ \mathrm{a} /$ to the front vowel, $/ \varepsilon /$, and the tone of the final syllable changes from HM (written áa) to HL (written $\dot{\varepsilon} \dot{\varepsilon}$ ).

The plural enclitic attaches to the NP, not to N (Traoré 1985), as shown in (39).
39.


Therefore, if the noun is modified, the plural marking attaches to the adjective phrase (40a-b), not the noun (40c). If the adjective is distributive (i.e. applying to each child individually), it is reduplicated, as in (40b).
40.

| a. | N | AdjP | Num | dukusèn wasp lots of wasps | tyé́y <br> many | $\begin{aligned} & \text { ś= }=\grave{\boldsymbol{\varepsilon}} \\ & \text { very=PL } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| b. | N | AdjP | Num | bisháayn child small children | tíin <br> small | $\begin{aligned} & \text { tíin=ê } \\ & \text { small=PL } \end{aligned}$ |

$\begin{array}{lll}\text { c. } & \text { bishéż } \quad \text { tíin tíin } \\ \text { child.PL } & \text { small small } \\ \text { intended reading: small children }\end{array}$
The plural enclitic is not obligatory. In the right context, a bare noun can be interpreted as plural. For example, in (41), the modifiers force the noun to be interpreted as plural.
41. a. bisháaŋn ty tén sóo
child many very
lots of children
b. bébéع món fú
sheep CL.thing ten
ten sheep

### 2.3.3.5 Definiteness: $\mathfrak{a}$. . . $=\hat{\imath}$

Definiteness is marked by the left-edge particle $\grave{a}$ together with the enclitic $=\hat{\imath}(42) .{ }^{29}$ The definite enclitic, like the plural enclitic, attaches to the NP (43a-b), not N (43c). ${ }^{30}$
42.

Def1 N Def2
à bisháayn= $\mathbf{i}$
DEF1 child=DEF2
the child
43.
a. Def1 N
AdjP Def2 à
bisháayn
tíin= $\mathbf{1}$
DEF1 child small=DEF2 the small child
b. Def1 N AdjP Def2 à bisháayn jir tyáar=î DEF1 child CL.person three=DEF2 the three children

[^20]c.

* à bisháayn=î tíin DEF1 child=DEF2 small intended reading: the small child

Generally, both the particle and the suffix are required to mark definiteness, as in (42). However, I know of at least two DPs in which the particle occurs without the suffix (44). ${ }^{31}$
44.
a. Def1 N

| à | húnmo |
| :--- | :--- |
| DEF1 | here |
| here |  |

b. Def1 N
à di
DEF1 home home

The definite enclitic occurs without the definite particle in possessed DPs. (See 2.3.3.6.)
The definite enclitic attaches outside the plural enclitic and harmonizes with it (45a). If the definite enclitic came first, the plural enclitic would harmonize with the definite enclitic and it would be *tiin-î-î. The correct structure of (45a) is shown in (45b) and the incorrect one in (45c).
45.


[^21]

Demonstratives are marked as a suffix (-ni) on the definite particle (46).

46. Def1 Dem N Def2 \begin{tabular}{l}
à-ni

 

bisháayn=î <br>
DEF1-DEM <br>
this child

$\quad$

child=DEF2
\end{tabular}

Demonstratives can occur without a noun. In this case they occur with the definite enclitic (47).

| $47 . .^{32}$ | À-ni=în | ki | gboòngbrê | 0 |
| :--- | :--- | :--- | :--- | :--- |
|  | DEF1-DEM=DEF2 | NFP | problem | COP |

This is a problem.
French: Ça c'est un malheur. (C)

### 2.3.3.6 Possessor: Poss (ì) NP

I assume for now that possessors in Siamou are complements of NP. ${ }^{33}$ All the data is of definite possessed nouns, which appear to be more common than indefinite possessed nouns. Definite possessed nouns occur with the definite enclitic, as in (48) but not with the definite particle, $\grave{a}$ (49). Inalienable possession (relations and body parts) is marked by the possessor followed by the possessed noun.


[^22]49. * à mún to=ô

DEF1 1SG.EMPH father=DEF2
intended reading: my father ${ }^{34}$

Alienable possession is marked by the possessor, followed by the possessive particle $\grave{n}$ followed by the possessed noun (50a, 51a). The structures for these examples are given in (50b) and (51b).
50.

51.

b.


[^23]| i. $\quad$ A mún | to= | ymón. |  |
| :--- | :--- | :--- | :--- |
|  | 3SG | 1SG.EMPH | father=DEF2 |$\quad$ see.PRFV

### 2.3.3.7 Nominalized Verbs

Siamou has an imperfective nominal and a perfective nominal. They are derived from verbs but have some properties of nouns. Table 2.23 and Table 2.24 show examples of perfective nominals and imperfective nominals for each tone group for which I have data. The perfective and imperfective forms of the verbs are given as well for comparison.

Table 2.23 Perfective Nominals ${ }^{35}$

| Bare Verb |  | Perfective |  | Perfective Nominal |  | Gloss |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Form | Tone | Form | Tone | Form | Tone |  |
| búr | H | bré | H | brê | HL | put |
| dè | L | dè | L | --- | --- | wear out |
| gbe | M(L) | yè | L | yè | L | drink |
| táayn | H! H | tâgn | HL | tânn | HL | cook |

Table 2.24 Imperfective Nominals

| Bare Verb |  | Imperfective |  | Imperfective Nominal |  | Gloss |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Form | Tone | Form | Tone | Form | Tone |  |
| búr | H | bréen | HM | brée | HM | put |
| dè | L | d $\varepsilon \varepsilon n$ | M | d $\varepsilon \varepsilon$ | M | wear out |
| gb $\varepsilon$ | M $(\mathrm{L})$ | laàn | M | laa | M | drink |
| táannn | H!H | táagn | HM | táann | HM | cook |

The perfective nominal is characterized by a final $L$ tone, and the imperfective nominal by a final $M$ tone. The same segmental changes that occur in irregular perfective and imperfective verb forms are present here as well (vowel changes, metathesis, glide or lateral epenthesis, etc.) (see 3.6), but the nasal consonant suffix is noticeably absent from the imperfective nominal (unless it is part of the bare verb itself, as in táayn ('cook')).

These forms, like nouns, can occur with the copular suffix. The examples below contrast the perfective and imperfective nominals (52-53).
52. Àníi kye ki tâgn 0

DEM meat NFP cook.PRFV.NOM


This meat is cooked.
53. Àníi kye ki táagn

DEM meat NFP cook.IMPF.NOM
$\stackrel{0}{\mathrm{COP}}$
This meat is for cooking.

[^24]The following examples show a few other contexts in which these nominals are used. Examples (54) and (55) show perfective nominals and (56) and (57) show imperfective nominals.
54. À bè ŋméqn ŋmón ŋméqn bè kpàr brê fon 3SG MOD 1PL see.PRFV 1PL.EMPH MOD mat put.PRFV.NOM place He saw us in a place where we had spread a mat.
55. Dír mún Djòro don=î nukwó bo yesterday 1SG Bobo go.PRFV.NOM=DEF2 please.PRFV NEG Yesterday, my trip to Bobo wasn't pleasant.

57. À blaa-kún-n $\varepsilon$

3SG come.IMPF.NOM-INCEP?-look!
Look- he's coming.

### 2.3.4 The Extended Verbal Projection

The tree in (58) below is a schema that represents my current understanding of Siamou's extended verbal projection.

At the bottom of the tree is the VP with the head (V) and the object (DP). Immediately above that is the first aspect phrase, which contains perfective and imperfective aspect, and then the second aspect phrase which contains stative, completive, prospective aspect 1 and prospective aspect 2. (See 3.3 for arguments that support splitting the aspect phrase into two levels.)

The higher levels of the verbal projection contain a total of twelve functional particles: one clause initial particle, seven pre-predicate particles, and four right-edge particles. No single Siamou sentence contains all these particles. The pre-predicate particles are more restricted than the right-edge particles. No more than two pre-predicate particles can occur in one sentence (see 2.3.4.2.8). The ordering of the particles in this tree is very tentative, and is based on cooccurrence restrictions and ordering relations between them. The following paragraphs discuss the rationale behind the tree in (58).
58.


Above the aspect phrase there is a locative phrase which contains two particles $f \circ n$ 'be here' and $m i ́$ 'be there.' I put these two particles in the same syntactic position because they are in complementary distribution and because they are both locatives. I put them at the bottom of all the functional particles because whenever they occur with another pre-predicate particle they are always to the right of the other particle (e.g. ri fon, wo mi) (see 2.3.4.2.8).

The head right above the locative phrase I have called a functional phrase (FP), for lack of a better name, and it contains the modal particle bè and the negative polarity particle wo. I put
these particles in the same syntactic position because they never co-occur. I put them above the locative phrase because wo precedes $m i$ if they co-occur (wo mí).

The next level up is the finite phrase which contains the non-finite particle $k i$ and the finite particle ri. (The labels for these particles is also tentative.) I put these particles in the same syntactic position because they never co-occur and because they both seem to have something to do with finiteness. If $k i$ or $r i$ occur with another pre-predicate particle, they are always to the left of the other particle (e.g. ki bè, ri bè, ki wo, ri mí).

Above the finite phrase is the TP, which contains the right edge particle in. This particle precedes all other right edge particles (see 2.3.4.3). I placed the TP as close as possible to the finite phrase, since I expect both of them to be part of the IP.

The phrase above TP is the NegP which contains the right edge particle bo (sometimes be) NEG. I put this particle above ín PAST because ín always precedes bo (although see (103a.)).

Above this is the CP, which contains the pre-predicate particle ni 'if/when.' This particle is in complementary distribution with $k i$ and $r i$ in the finite phrase. Nonetheless, I chose to give it its own position because of its function. That is, it seems to fit into the CP better than the IP. Immediately above the CP is another functional phrase that contains two right-edge particles: a polar question particle $a$ and an emphatic particle $n a$. I put these particles in the same position because they never co-occur. I put them above the NegP because they always follow negation (be a, bo na).

The highest level in the tree is the quotative phrase which contains the quotative particle dé. I placed this particle at the top because it precedes all other elements of the phrase. Since I am focusing on functional particles, this tree does not include the subject of the sentence. However, I assume that the subject is generated inside the VP and raises to a position higher in the clause. In Siamou the subject precedes all pre-predicate particles. The only particle that precedes the subject is the quotative dé. Therefore, the subject likely raises as high as the CP.

The subsections below look in more detail at each these functional elements. In 2.3.4.1 I introduce the quotative, dé, in 2.3.4.2 the set of seven pre-predicate particles, and 2.3.4.3 the set of four right-edge particles. The final section, 2.3.4.4, is about some unusual verb stems.

### 2.3.4.1 The Clause-Initial Quotative: dé

The quotative particle dé is used to introduce quoted speech, either direct (59) or indirect (60), as well as thoughts, ideas, observations and the like. For example, the utterance in (61) shows this particle introducing a clause stating something that was not known.
59. À húnmo, jir bwàr kìyenn se, yì $\mathrm{r}^{\prime}$ à $\mathrm{lo}^{36}$ DEF1 here people black country at 3SG FIN 3SG say.PRFV
dé nòsúnkparmón bin saay tyenso Kanada.
QUOT lightening.bolt seed also lots Canada Here in Africa, they say that there's lots of snow ${ }^{37}$ in Canada.
60. Dír ń kzદl-n Adama wóse ín yesterday 1 SG talk-IMPF Adama with PST

| dé | mún | Djòro | kóəyn | gbo | l̀̀ | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| QUOT | 1SG.EMPH | Bobo | go.IMPF.NOM | thing | go.out.PRFV | NEG |

Yesterday I talked with Adama that my trip to Bobo didn't work out.
French: Hier j'ai parlé avec Adama que mon départ à Bobo est annulé.

| 61. | Ń | $\mathrm{b}^{\prime}$ | à | shi | ín |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1SG | MOD | 3SG | knowledge | PST |

dé Ye-Kpèln blaà-n kyánmo, QUOT Lillian come-IMPF now
ń à yéen=nî sa-a ín bo.
1SG DEF1 door=DEF2 lock-PRSP1 PST NEG
If I had known that Lillian was coming now, I wouldn't have locked the door.
French: Si je savais que Lillian venait maintement, je n'allais pas bouclé la porte.

### 2.3.4.2 Pre-Predicate Particles

There are seven pre-predicate particles in the Siamou clause. I list them and their glosses in
Table 2.25 and give a brief summary of each particle below. Then I show which particles can cooccur, and which do not appear to be able to.

[^25]Table 2.25 Pre-Predicate Particles

| Particle | Gloss |
| :--- | :--- |
| nì $^{38}$ | if/when(ever) |
| ki | non-finite particle (NFP) |
| ri | finiteness (FIN) |
| wo | negative polarity item (NPI) |
| bè | modal (MOD) |
| fŋn | be here |
| mí | be there |

### 2.3.4.2.1 nì 'if, when'

The particle $n i ̀$ is usually compatible with a translation of if(62) or when (63).

| 62. | Ń | dénno | à | yi-kóəy-n, | à | nì | b $̀$-nèn | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1SG | go.PRFV? | 3 SG | see-go-IMPF | 3 SG | if | come-STAT | NEG |

I'm going to go see him, if he hasn't come.
French: Je vais le voir, s'il n'est pas venu. (C)
63. Ń nì lò, ń á fén-a.

1SG when arrive.PRFV 1SG 2SG call-PRSP1
When I arrive, I'll call you.

### 2.3.4.2.2 $\boldsymbol{k i}$ 'non-finiteness'

The particle $k i$ is used in a number of non-finite environments, including non-verbal predicates, imperatives, temporal anaphora, and irrealis/modal subordinate clauses.

First of all, $k i$ occurs in copular clauses, which have no main verb (Haas 2004). ${ }^{39}$
Example (64) shows affirmative copular clauses and (65) shows a negative copular clause.
64. Àníi ki myén o? Àníi ki hlay 0.

DEM NFP what COP What is this?

DEM NFP mortar COP
This is a mortar. (Haas 2004)
65. Naàl ki lun-mê 0 bo.
cow.PL NFP fly-thing.PL COP
NEG
Cows are not birds. (Haas 2004)

[^26]Although bare verbs function as imperatives (66), imperatives may also be formed with ki plus a bare verb (67). In this case, a subject is required, and the meaning changes slightly, as in (66-67) (Haas 2004).
66. $\mathrm{B} \varepsilon$ húnmon.
come here
Come here!
French: Viens ici! (L)
67. Á ki be húnmon.

2SG NFP come here
Then come here.
French: Puis il faut venir ici. (C)
$K i$ is used in hortatives (68). It also occurs in sequences of commands (Haas 2004). In (69) the first command is given as a bare verb imperative, and the following commands are $k i$ imperatives.
68. $\hat{\mathrm{N}}$ ki don.

1PL NFP go
Let's go!
French: Allons-nous. (C)
69. Mê mo-wú. Á ki nun tu
thing.PL in-wash 2 SG NFP water draw
Wash the dishes, then draw water
á $\mathbf{k}^{\prime}$ à ló=ô mo-yén.
2SG NFP DEF1 house=DEF2 in-sweep
then sweep the house. (Haas 2004 ${ }^{40}$ )
In Siamou, utterances describing sequences of events often only have temporal marking in the first clause. The remaining clauses contain the particle $k i$ and a bare verb (Haas 2004). The temporality (tense and aspect) of the $k i+$ bare verb clauses is interpreted according to the context. Often they are understood to have the same temporality as the marked verb in the first clause. If the first verb is perfective, all of the following verbs are interpreted as perfectives (70). If the first verb is imperfective, all of the following verbs are interpreted as imperfectives (71),

[^27]and if the first verb is imperative, the following verbs are interpreted as imperatives as well, as in (69) above.
70. ${ }^{41}$ À bûr kùn $\quad$ ki nun $\mathbf{g b \varepsilon}$.

3SG bread eat.PRFV NFP water drink
He ate bread and drank water.
French: Il a mangé du pain et il a bu de l'eau. (C)
71. Ń nì dénno

1 SG when go.PRFV?
Djòro, ń ni kóэy-n klóne,

ń ki mónbli sébe gbòn Tòl se-bla-fon.
1SG NFP vehicle paper take Orodara return-come.IMPF.NOM-place When(ever) I go to Bobo, I go to the market and I buy things, and I go to the post office, and I go to the café and I do email, and I go to the (bus) station and I get a bus ticket back to Orodara.

Sometimes, the $k i+$ bare verb structure simply indicates a sequence of events that occur in a contextually determined timeframe. For example, in (72) the first clause gives the context (a party) and the following clauses give a list of events that happen at that party. The utterance in (73) is part of a narrative, and as such, functions as an acceptable context for $k i+$ bare verb utterances, since the story provides the context.

[^28]72. Dír nél tèn-nèn. $\hat{\mathrm{N}}$ ki mel di
yesterday balaphone be-STAT 1PL NFP rice eat

| $\hat{n}$ | $\mathbf{k i}$ | le | di, | $\hat{n}$ | ki | sen. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |

1PL NFP food eat 1PL NFP dance
Yesterday there was a balaphone (i.e. a party with a balaphone ${ }^{42}$ ). We ate rice, we ate food, and we danced.
73. À-ni jon=1̂=̀̀, yì nònkurn bisháayn ton=1̂,
DEF1-DEM boy=DEF2=DEM 3SG all child ORD=DEF2


This boy here, the youngest one of them, this one took his bow and tied his belt, he took his bag and he took his bow, he took his arrows and put them in his bag. He got up and went into the bush.
French: Cet enfant là, leur tous petit enfant là celui là maintenant a pris son arc il s'est ceinturé, il a pris sa gibecière, il a pris son arc, il a pris ses flêches, il les a mis dans sa gibecière. Il s'est levé et il est parti en brousse. (C)
$K i$ is restricted in what kind of verb it can occur with. Usually, as we have already seen, it must occur with a bare verb (69-73). However, it also occurs with completive verbs (74). ${ }^{43}$ In

[^29]| i. | À | mún | ymón | ń | ki | kpàr |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3SG | 1SG | see.PRFV | 1SG | NFP | mat | put.PRFV.NOM?-already? |
|  | He saw me after I had spread the mat. |  |  |  |  |  |


| ii. | À | $\mathbf{k}^{\prime}$ | à | krı=̂ | láa-kún-nє. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3 SG | NFP | DEF | knife=DEF2 | sharpen.IMPF.NOM-PROG?-LOOK! |

Look, he's sharpening the knife!
Voici, il est en train d'aiguiser le couteau!
(74b) the completive form serves to emphasize the act of refusing. The subject repeatedly refuses, until finally he loses his patience and refuses more emphatically. The first refusals use the $k i+$ bare verb construction, but the final refusal uses the $k i+$ completive verb construction. In the end, the subject gives in, and this is stated with $k i+$ bare verb. All other aspectually inflected verbs are incompatible with $k i$ (75).
74. a. À fli-è ín kè ń $\mathbf{k}^{\prime}$ à $\mathrm{s} \varepsilon-\mathrm{ym} \varepsilon \quad$ kú-è. 3SG survive-CMPL PST but 1SG NFP 3 SG re-hit die-CMPL It survived, but then I hit it dead.

| b. | À | wárn | nyعl | mún | se | ń | ki | ká |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | money | ask.PRFV | 1SG.EMPH | from | 1SG | NFP | refuse |


| $\mathbf{k}^{\prime}$ | à | nyعl | yé. | ń | ki | ká. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| NFP | 3SG | ask | again | 1SG | NFP | refuse |


| $\mathbf{k}^{\prime}$ | à | ny\&l | yé | ń | ki | ká-è |
| :--- | :--- | :---: | :--- | :--- | :--- | :--- |
| NFP | 3SG | ask | again | 1SG | NFP | refuse-CMPL |

kè kwóon ń $\mathbf{k}^{\prime}$ à tè à to.
but after 1 SG NFP 3 SG give 3 SG to He asked me for money. I refused. He asked again, and I refused. He asked again, and I completely refused. But then afterwards, I gave it to him.
75. a. *À ki nun yè. 3SG NFP water drink.PRFV
b. $*$ À ki nun laa-n. 3SG NFP water drink-IMPF
c. * A ki nun gbè-nèn. 3SG NFP water drink-STAT
d. $* \grave{A}$ ki nun gbe-a. 3SG NFP water drink-PRSP1
e. $\quad$ À ki nun gbs-bê. 3SG NFP water drink-PRSP2

Attempts to elicit constructions with $k i+\mathrm{V}$-Asp were unsuccessful, but later the $k i+\mathrm{V}$-CMPL constructions were volunteered.

The final context in which $k i$ occurs is in irrealis contexts. Modal phrases which take subordinate clauses have a $k i+$ bare verb in the subordinate clause, for example, in order to say things like have to $p(76 a)$, or want to $p(76 b) .{ }^{44}$
76. a. Ń ni yan-nèn ń ki wê wú dwon.

1SG FIN have.to-STAT 1SG NFP cloth wash tomorrow I have to wash clothes tomorrow.
French: Je dois laver des habits demain. (C)
 I want to eat tô (corn porridge).

### 2.3.4.2.3 ri 'finiteness'

Unlike $k i$, the particle $r i$ can occur with all of the aspectual suffixes (77a-e), except the prospective aspect $2(77 \mathrm{f})$. Also unlike $k i$, it is incompatible with a bare verb $(77 \mathrm{~g})$.
77.
a. $\grave{\mathrm{A}}$ ri byè. 3SG FIN come.PRFV S/he came.
b. À ri bè-è.

3SG FIN come-CMPL
S/he has already come.
c. À ri blaà-n.

3SG FIN come-IMPF
S/he is coming.
d. À ri be-nèn.

3SG FIN come-STAT
$\mathrm{S} / \mathrm{he}$ is t /here.
e. $\grave{\mathrm{A}}$ ri $\mathrm{b} \varepsilon$-a.

3SG FIN come-PRSP1
S/he will come.
French: Il va venir. (C)

[^30]f. $\quad$ À $\mathbf{r i} \quad b \varepsilon$-bè. 3SG FIN come-PRSP2

$\begin{array}{llll}\text { g. } & * & \text { À } & \text { ri } \\ & \text { 3SG } & \text { FIN } & \text { be } \\ \text { come }\end{array}$

Ri does not appear to contribute any particular meaning to the utterance (which is not to say it has no meaning) and is often dropped altogether. Utterances with no particle, such as (78a), are usually understood by the consultant to be equivalent to $r i$-clauses (78b). For this reason, I assume that (78a) has simply dropped ri.
78. a. À bisháayn=î kùr. DEF1 child=DEF2 gain.weight.PRFV The child gained weight.
b. À bisháayn=1̂ ri kùr. DEF1 child=DEF2 FIN gain.weight.PRFV The child gained weight.

The particle $r i$ has the form $n i$ when it follows a nasal, $l i$ when it follows a lateral, and $r i$ elsewhere (79).
79.
$\begin{array}{lllll}\text { a. } & \text { Ń } & \text { ni } & \text { le } & \text { dì. } \\ & \text { 1SG } & \text { FIN } & \text { food } & \text { eat.PRFV }\end{array}$ I ate food.
b. Mél li le dì.
woman FIN food eat.PRFV
A woman ate food.
French: Une femme a mangé de nourriture. (L)

| c. | A | ri | le | dì. |
| :--- | :--- | :--- | :--- | :--- |
|  | 3SG | FIN | food | eat.PRFV |
|  | S/he ate food. |  |  |  |

### 2.3.4.2.4 NPI wo

The particle wo has some characteristics of a negative polarity item (NPI): Wo occurs mainly in negative clauses, but it is not obligatory in negative clauses. It can also occur in certain types of affirmative questions (Adger 2003). The data available at this point are compatible with it being an NPI, so that is how I have chosen to gloss it.

Wo can occur with all the aspectual suffixes except the completive and the prospective aspect 2. In (80) I show negative clauses that contain wo and the right-edge negative particle bo. I give one example for each of Siamou's six aspectual suffixes (see chapter 3), of which the final two are ungrammatical. In these cases, wo seems to strengthen the negative force of bo (compared to negatives without wo as in (81)).
80.

| a. | À | wo | le | dì | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG $\quad$ NPI | food | eat.PRFV | NEG |  |
|  | S/he didn't eat food. |  |  |  |  |


| b. | À | wo | le | leè-n | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | NPI | food | eat-IMPF | NEG |
|  | S/he | $[$ doesn't | eat]/[isn't eating] food. |  |  |

c. À wo le dì-nغ̀n bo. 3SG NPI food eat-STAT NEG S/he [didn't eat]/[hasn't eaten] food. French: Il n'a pas mangé de la nourriture. (C)
d. À wo le dì-a bo. 3SG NPI food eat-PRSP1 NEG S/he won't eat food.
French: Il ne va pas manger. (L)

$$
\begin{aligned}
& \text { e. }{ }^{46} \text { ?* À wo à le=ê dì-è bo. } \\
& \text { 3SG NPI DEF1 food=DEF2 eat-CMPL NEG } \\
& \text { S/he didn't eat all the food. } \\
& \begin{array}{lllllll}
\text { f. } & * & \text { À } & \text { wo } & \text { le } & \text { dì-b } \hat{\varepsilon} & \text { bo. } \\
& & & 3 \text { SG } & \text { NPI } & \text { food } & \text { eat-PRSP2 }
\end{array}
\end{aligned}
$$

However, bo can negate an utterance without the help of wo, as the examples in (81a-d, f) show. Example (81e) shows that the completive is not grammatical with a ri. . . bo negative construction. The difference between the negatives with $r i$ and the wo negatives is that the wo negatives have a little more negative force than the ri negatives (Souleymane Traore p.c).

[^31]81. a. À ri le dì bo.
3SG FIN food eat.PRFV NEG

He didn't eat food.
French: Il n'a pas mangé de nourriture. (C)
b. À ri le leè-n bo.

3SG FIN food eat-IMPF NEG
She is not eating food./She does not eat food.
French: Elle ne mange pas de la nourriture. (C)
c. À ri le dì-nèn bo.

3SG FIN food eat-STAT NEG
S/he [didn't eat]/[has not eaten] food.
French: Il n'a pas mangé. (C)
d. À ri le dì-a bo.

3SG FIN food eat-PRSP1 NEG
S/he [won't]/[isn't going to] eat food.
French: Il ne va pas manger. (C)
$\begin{array}{lllllll}\text { e. }{ }^{47} & ?^{*} & \text { À } & \mathbf{r}^{\prime} & \text { à } & \text { le=ê } & \text { dì̀è } \\ & & \text { 3SG } & \text { FIN } & \text { DEF1 } & \text { food=DEF2 } & \text { eat-CMPL }\end{array}$ S/he didn't eat food.
f. $\grave{\text { À bè le di-b } \hat{\varepsilon} \text { bo. }}$

3SG MOD food eat-PRSP2 NEG
S/he is not going to eat food.
French: Il ne va pas manger. (C)
Wo occurs in finite affirmative clauses. In this case, it can turn the utterance into a why-question.
The utterances in (82) can be interpreted as a negative clause or as a why- question.
82.
$\begin{array}{lll}\text { a. } & \grave{A} & \text { wo } \\ & 3 \mathrm{SG} & \text { NPI }\end{array}$
le dì./?

S/he didn't eat./Why did s/he eat?
French: Il n'a pas mangé./Pourquoi a-t-il mangé nourriture? (C)
$\begin{array}{lllll}\text { b. } & \text { À } & \text { wo } & \text { le } & \text { leè-n./? }\end{array}$
3SG NPI food eat-IMPF
S/he doesn't eat./Why is s/he eating?
French: Il ne mange pas./Pourquoi mange-t'il? (C)

[^32]Wo can also occur with a bare verb, as in (83). This utterance was initially accepted, but then rejected in a later elicitation session. More work needs to be done to determine the status of this type of clause.
83. ?* À wo $\mathrm{b} \varepsilon$.
3SG NPI come
He has but to come.
French: Il n'a qu'à venir. (C)

### 2.3.4.2.5 Modal bè

The particle bè is of especial interest in future expressions, so it is discussed in more detail in chapter 7. Like $k i$, the particle bè can occur with non-verbal predicates (84). However, it is optional (85), and its function in these types of utterances is not clear. One possible contrast between $k i$ and bè is that $k i$ serves to move the narrative forward while bè does not.
84. Sègl yín-won bè à tyé mo. star néré-flour MOD DEF1 centre in There's a yellow star in the centre.
85. Á gbéع (bè) lô mún gbé $(\mathbf{b e ̀})$ bwàr. 2SG body MOD white 1 SG body MOD black You're white and I'm black.

Bè can occur with a bare verb. Such constructions usually have a 'managed to' or 'succeeded at' reading (86).
86. À bè kro dé.

3SG MOD knife sharpen
He succeeded at sharpening a knife.
Bè can occur with all six aspectual forms, with restrictions. Bè + PRFV is the most marginal. Such constructions were often rejected as ungrammatical (87a). When they were accepted (87b), they had an interpretation similar to be with a bare verb (like (86)). The fact that judgements for bè + PRFV utterances are murky may be related to the fact that many verbs have a perfective that is identical to the bare verb. If bè + BARE VERB is grammatical and be + PRFV is ungrammatical, but these two constructions are homophonous for many Siamou verbs, it makes sense that speakers would mix them up.
87.
a. $\quad$ À bè le
dì. 3SG MOD food eat.PRFV
b. À bè nun yè.
3SG MOD water drink.PRFV
S/he managed to drink water.

Constructions with bè plus a completive verb were also sometimes rejected as ungrammatical (88a). When accepted, bè + CMPL constructions sometimes have a 'managed to/able to' reading (88b). In (88c) the most salient interpretation is that the speaker finished what he set out to do.
88.

| a. | $\begin{aligned} & *{ }_{*}^{\mathrm{N}} \\ & \\ & 1 \mathrm{SG} \end{aligned}$ | bè <br> MOD | kpàr mat | búr-è. <br> spread-CMPL |
| :---: | :---: | :---: | :---: | :---: |
| b. | À | bè | lì-è. |  |
|  | 3SG | MOD | go.ou | -CMPL |
|  | He was able to go out. |  |  |  |
|  | French: Il a pu sortir. (C) |  |  |  |

c. Ń bè kel-è.

1SG MOD talk-CMPL
I said everything (that I needed to say)./I managed to speak.
French: J'ai tout dit./J'ai reussi à parler. (C)
context: Everyone's making speeches. I finish my turn.
When be occurs with the imperfective (89) and stative (90) suffixes, it is usually restricted to subordinate clauses. ${ }^{48}$ The main clause examples (89a, 90a) were rejected, and subordinate clauses (89b, 90b) were volunteered instead.
89. a. * Fòn ${ }^{49}$ bè kro láa-n. Tim MOD knife sharpen-IMPF consultant comment: This isn't a complete sentence by itself.

[^33]b. Ń ni à ymón in, à bè kécl-n. 1SG FIN 3SG come.PRFV PST 3SG MOD walk-IMPF I saw you while you were walking. French: Je t'avais vu pendant que tu marches. (C)
context: You were walking yesterday and I saw you at that time.
90.

$\begin{array}{llll}\text { a. } & * \text { À } & \text { bè } & \text { be-nèn. } \\ & \text { 3SG } & \text { MOD } & \text { come-STAT }\end{array}$
b. Ń ni à ymón, à bè li-nèn. 1SG FIN 3SG see.PRFV 3SG MOD go.out-STAT
I found that he had gone out.
French: J'ai trouvé qu'il est sorti. (C)
context: You didn't see him going out.
With the prospective aspect 1 and prospective aspect 2 aspects, bè is the default particle (91). In fact, with the prospective aspect 2 , bè is obligatory (91b). The role of bè in future expressions is discussed in more detail in chapter 7.
91. a. À bè b $\varepsilon$-a.

3SG MOD come-PRSP1
S/he will come.
b. À *(bè) be-bè.

3SG MOD come-PRSP2
S/he is going to come.

### 2.3.4.2.6 Locative 'be here' fon

Fon and mí, are locative particles. Fon is used to describe events that are taking place or took place at the current location of the speaker. It occurs in non-verbal predicates, such as the last sentence in (92).
92. Person A: Ń bè na nan jén-a. 1SG MOD today wood look.for-PRSP1 I'll get wood today.

Person B: À jél má. Nan fon. 3SG leave just wood be.here Leave it. There is wood here.

If fon occurs in a sentence with a main verb, the main verb is always either imperfective (93) or stative (94). ${ }^{50}$ The speaker either has to see the action in progress (with the imperfective), or see the results of that action (with the stative). For this reason, an imperfective utterance with fon, such as (93), is more likely to have a progressive reading than a habitual reading.
93. À mél=î fon án fráâ kwa kro láa-n.

DEF1 woman=DEF2 be.here POSS okra cut knife sharpen-IMPF The woman is sharpening her knife for cutting okra. (Thiessen et al. n.d, modified to reflect current orthographic conventions)

| 94. | À fon | kpàr | blín-jı̀̀n. |
| :--- | :--- | :--- | :--- |
|  | 3SG be.here mat | fold-STAT |  |
| (I see that) he has folded a |  |  |  |

### 2.3.4.2.7 Locative 'be there' mí

$M i$ is used to describe events which are taking place or took place elsewhere, away from the speaker. Like fon, it occurs in non-verbal predicates (95), and with imperfective (96) and stative (97) verbs.
95. À ló=ô mí sóo.

DEF1 house=DEF2 be.there big
The house (there) is big.
context: talking about a house which is out of sight
96. Á sró $\begin{gathered}\text { jo à } \operatorname{sćb} \varepsilon=\hat{\varepsilon} \text { núr kón-è á? }\end{gathered}$

2SG younger.sibling/cousin man DEF1 book=DEF2 write finish-CMPLQ
Has your brother finished writing the letter?

| Owo, | à | mí | à | nwáar-n | yé. |
| :--- | :--- | :--- | :--- | :--- | :--- |
| no | 3SG | be.there | 3 3SG | write-IMPF | still |

No, he's still (there) writing it.
consultant comment: This means that he was far away from you when you said this.

[^34]i. $\begin{array}{lllllllll}\text { N } & \text { bè fon ín à } & \text { fon } & \text { nun } & \text { y } & \text { à } & \text { múns ín. }\end{array}$ If I'd been there, he would have already drunk water.
97. À kpàr=̂̂ búr-nèn yé á

DEF1 mat=DEF2 put-STAT still Q
Is the mat still spread out?

| Oo, | à | mí | búr-jıèn | yé |
| :---: | :---: | :---: | :---: | :---: |
| yes | 3SG | be.there | put-STAT | still |
| Yes, it's still spread (over there). |  |  |  |  |

### 2.3.4.2.8 Co-Occurrence of Particles

The seven pre-predicate particles are not in complementary distribution. However, their cooccurrence is extremely restricted. The maximum number of pre-predicate particles in a clause is two. However, I was not actually able to directly elicit any clauses with two particles, and all the examples below were either volunteered in elicitation or found in texts. This list is likely not exhaustive, but it shows all the co-occurrences that have been found at this time. The first three examples (98a-c) show that ki, ni and ri all co-occur with (and precede) bè. The fourth example (98d) shows that ki and wo co-occur. The last four examples (98e-h) show that nì, ri, and wo all co-occur with (and precede) the locatives, fon and/or mí.
98. a. ki bè (from Haas (2004))

| À | by $\varepsilon ~$ | ki | $\mathbf{b}^{\prime}$ | à | ymón |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 3SG | come.PRFV | NFP | MOD | 3 SG | see |

b. nì bè
$\begin{array}{llllllll}\text { À } & \text { nì } & \text { bè } & \text { byè } & \text { bo, } & \text { á } & \text { ki } & \text { don. } \\ \text { 3SG } & \text { if } & \text { MOD } & \text { come.PRFV } & \text { NEG } & \text { 2SG } & \text { NFP } & \text { go }\end{array}$
If he doesn't come, you have to go.
Au cas où il ne vient pas, il faut aller.

## c. ${ }^{51} \quad$ ri bè

| .yì ri | $\mathbf{b}^{\prime}$ | à | níin-ton=nî | tená-a. <br> believe-PRSP1 |
| :---: | :---: | :---: | :---: | :---: |
| 3PL FIN | MOD | DEF1 | two-ORD= $=$ EFF2 |  |
| .they ma | ieve | sec |  |  |

## d. ${ }^{52} \quad$ ki wo

| À | mímyée | bisháann=1̂ | ki | wo | dénno |
| :--- | :--- | :---: | :--- | :--- | :--- |
| DEF1 | young.woman child=DEF2 | NFP | NPI | go.PRFV? |  |

à bisháayn=1 kwòy no=̂ fénn-ké.
DEF1 child=DEF2 birth mother=DEF2 call-go
The girl went and got the baby's mother.
e. ${ }^{53}$ nì mí

| Á | $\mathrm{k}^{\prime}$ | à | jél | ń | ki | ń | sع-no |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2SG | NFP | 3SG | allow | 1SG | NFP | 1SG | re-go |

yì mo mé $=\grave{\varepsilon}$ nì mí á shi mo yé yìyáan. 3pL in other=PL if be.there LOG life in still at.present Let me go back to my own people in Egypt to see if any of them are still alive
f. rifon

| À | ri | fon | à | múkâl $=\hat{1}$ |
| :--- | :--- | :--- | :--- | :--- |
| 3SG | FIN | be.here | DEF1 | leè-n |
| tô=DEF2 | eat-IMPF |  |  |  |

[^35]g. rimí

$\begin{array}{llll}\text { À } & \text { ri } & \text { mí } & \text { bè-nèn. } \\ \text { 3SG } & \text { FIN } & \text { be.there } & \text { come-STAT }\end{array}$
He came there.
French: Il est venu là-bas. (C)
h. wo mí

| À $\quad$ wo | mí | bỳ̀ | bo. |  |
| :--- | :--- | :--- | :--- | :--- |
| 3SG | NPI | be.there | come.PRFV | NEG |
| Maybe he didn't come | (there). |  |  |  |

### 2.3.4.3 Right-Edge Particles

Siamou has four main particles that occur at the right edge: a past tense particle ín (see chapter 6), a negation particle bo, a question particle $a$, and an emphatic particle $n a$. In this section I introduce them and examine their ordering and co-occurrence restrictions.

### 2.3.4.3.1 Past Tense ín

The first right-edge particle, $i n$, is a marker of past tense. I explore its semantics in chapter 5 . Here I look at its position in the clause. In simple finite clauses, in only has one possible position: at the right edge (99). In (99a) in is both immediately after the verb, and clause final. It cannot occur before the main verb in any position at all (99b-e).
99.

| a. | À | ri | le | dì | ín. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | FIN food | eat.PRFV | PST |  |
|  | S/he ate (awhile ago). |  |  |  |  |

b. * À ri le ín dì.
c. $*$ À ri ín le dì.
d. $\quad$ À ín ri le dì.
e. *Ín à ri le dì.

Contrast this with an adverb like dir 'yesterday' which can occur in three positions in the same clause: right-edge (100a), between the particle and the verb phrase (100b) and at the leftedge (100c). The fact that in has a different distribution than adverbs supports analyzing $i n$ as a tense rather than an adverb.
100.

| a. | A | ri | le | dì | dír. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | FIN | food | eat.PRFV | yesterday |
|  | S/he ate yesterday. |  |  |  |  |

b. À ri dír le dì. S/he ate yesterday.
c. Dír à ri le dì. Yesterday s/he ate.
d. * À ri le dír dì.
e. * À dír ri le dì.

### 2.3.4.3.2 Negative bo

Negation is generally marked by a clause-final negation particle, bo (101).
101.

| À | ri | le | dì | bo. |
| :--- | :--- | :--- | :--- | :--- |
| 3SG | FIN | food | eat.PRFV | NEG |
| S/he didn't eat. |  |  |  |  |

In (102) we see that past tense in may precede bo (102a) but not follow it (102b).
102.


These judgments, however, are not very clear. Although utterances such as (102b) are often judged ungrammatical, sometimes they are accepted, with a comment such as, "That's not really the logical way to say it, but people sometimes talk this way."

In fact, in rare cases it is even possible to have two instances of $i n$ in the same negative clause, one preceding negation and one following it (103a). If there was only one in after bo and none before it, it was judged slightly less acceptable (103b). Two instances of in both preceding $b o$ was definitely unacceptable (103c). Just one ín preceding bo was the most acceptable (103d).
103. a ?* Kyènlye Tòl Sèmè jéen kwosé jéen in.the.past Orodara Siamou language only language

| má | kel | ín | bo | ín. |
| :--- | :--- | :--- | :--- | :--- |
| other | speak.PRFV | PST | NEG | PST |

Way in the past, in Orodara, no other language but Siamou was spoken.
consultant comment: People talk this way but it isn't very formal. You might say something like this to emphasize that it was VERY far in the past.
b. ?* Kyènlye Tòl Sèmè jéqn kwosé jé n in.the.past Orodara Siamou language only language

| má | kel | bo | ín. |
| :--- | :--- | :--- | :--- |
| other | speak.PRFV | NEG | PST |

Way in the past, in Orodara, no other language but Siamou was spoken

| c. ${ }^{54}$ | * Kyènlye | Tòl | Sèmè | jécn | kwosé jécn |
| :--- | :--- | :--- | :--- | :--- | :--- |
| in.the.past | Orodara | Siamou | language | only | language |


| má | kel | ín | ín | bo. |
| :--- | :--- | :--- | :--- | :--- |
| other | speak.PRFV | PST | PST | NEG |

d. Kyènlye Tòl Sèmè jéen kwosé jéqn in.the.past Orodara Siamou language only language

| má | kel | ín | bo. |
| :--- | :--- | :--- | :--- |
| other | speak.PERF | PST | NEG |

In the past, in Orodara, no other language but Siamou was spoken.

### 2.3.4.3.3 Polar Question Particle á

Yes-no questions are marked with a clause-final interrogative particle, $a$ (104).


In a negated polar question, the question particle always follows the negative particle (105a). Note that bo becomes be in that environment; ${ }^{55} b o$ followed by $a$ is ungrammatical

[^36](105b). Examples ( $105 \mathrm{c}-\mathrm{d}$ ) show that neither form of negation (be or bo) is allowed to follow the question particle.
105.

| a. | À | ri | le | dì | be | a? |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | FIN | food | eat.PRFV | NEG | Q | Didn't s/he eat?

b. * À ri le dì bo a?
c. * À ri le di á be?
d. $* \grave{\mathrm{~A}}$ ri le di á bo?

In (106) we see that $i n$ may precede $\dot{a}$ (106a), but not the other way around (106a), which is what we expect, since in precedes bo, and bo precedes $\dot{a}$.
106.
$\begin{array}{lllllll}\text { a. } & \text { À } & \text { ri } & \text { le } & \text { dì } & \text { ín } & \text { á? } \\ & \text { 3SG } & \text { FIN } & \text { food } & \text { eat.PRFV } & \text { PST } & \text { Q }\end{array}$ Did s/he eat (awhile ago)?
b. * À ri le dì
á ín?
All three particles can co-occur in the order PST, NEG, Q (107a). In (107b-c) I show that in can not occur after bo/be (NEG) or $\dot{a}(\mathrm{Q})$.
107.
$\begin{array}{lllll}\text { a. } & \text { À ri } & \text { le } & \text { dì } \\ & \text { 3SG FIN food eat.PR } & \text { for } \\ & \text { Didn't he eat (awhile ago)? }\end{array}$
$\begin{array}{lll}\text { ín } & \text { be } & \text { á? } \\ \text { PST } & \text { NEG } & \text { Q }\end{array}$
b. * A ri le dì
c. ?* À ri le dì
be á ín?
bo/be ín á?
d. * À ri le dì
e. * À ri le dì
f. * À ri le dì

| ín | á | bo/be? |
| :--- | :--- | :--- |
| á | bo/be | ín? |
| á | ín | bo/be? |

### 2.3.4.3.4 Emphatic Particle ná

Clauses may also be marked with an emphatic particle, nâ, which intensifies the meaning of the utterance (108).

| i. | Be $\quad$ don | bo |
| :--- | :--- | :--- | :--- |
|  | NEG go | NEG |
|  | Don't go. |  |


| 108. | À | ri | le | dì | nâ. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3SG | FIN | food | eat.PRFV | EMPH |
|  | S/h | , ok |  |  |  |

The emphatic particle $n \hat{a}$ follows the past tense particle in (109).
109.
$\begin{array}{lllllll}\text { a. } & \text { À } & \text { ri } & \text { le } & \text { dì } & \text { ín } & \text { nâ. } \\ & \text { 3SG } & \text { FIN } & \text { food } & \text { eat.PRFV } & \text { PST } & \text { EMPH }\end{array}$
He already ate food, you hear!
French: Il avait déjà mangé de la nourriture. Entendu! (C)
b. $?^{*} \mathrm{~A}$ ri le dì
nâ ín.

The emphatic particle $n \hat{a}$ follows the negative particle bo (110).
110.

| a. | À | ri | le | dì | bo | nâ. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG FIN food eat.PRFV | NEG | EMPH |  |  |  |
|  | He didn't eat food, ok! |  |  |  |  |  |

$\begin{array}{llllllll}\text { b. } & * \dot{A} & \text { ri } & \text { le } & \text { dì } & \text { nâ } & \text { bo/be. } \\ \text { c. } & * \dot{A} & \text { ri } & \text { le } & \text { dì } & & \text { be } & \text { nâ. }\end{array}$
The emphatic particle $n \hat{a}$ and the polar question particle $\dot{a}$ do not co-occur (111).
111.
$\begin{array}{llllllll}\text { a. } & \text { A } & \text { À } & \text { ri } & \text { le } & \text { dì } & \text { nâ } & \text { á? } \\ & & 3 \mathrm{SG} & \text { FIN } & \text { food } & \text { eat.PRFV } & \text { EMPH } & \text { Q }\end{array}$
b. * À ri le dì á nâ?

I show the order of $\dot{i n}$ (PST) and bo (NEG) with $n \hat{a}$, leaving out $\dot{a}(\mathrm{Q})$ since it can not cooccur with nâ. The order of these three particles is PST, NEG, EMPH (112a). The order NEG PST EMPH is also marginally acceptable with the same meaning (112b). In (112c-f) I show that no other order is possible.
112. a. À ri le dì ín bo nâ?

3SG FIN food eat.PRFV PST NEG Q
He didn't eat, ok?
French: Il n'avait pas eu à manger, d'accord? (C)
$\begin{array}{llllllll}\text { b. } & ?^{*} & \text { À } & \text { ri } & \text { le } & \text { dì } & \text { bo } & \text { ín } \\ & & \text { 3SG } & \text { FIN } & \text { food } & \text { eat.PRFV } & \text { PST } & \text { NEG } \\ & \text { Q }\end{array}$
He didn't eat, ok?
French: Il n'avait pas eu à manger, d'accord? (C)

| c. | $*$ | À | ri | le | dì | bo | nâ | ín? |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| d. | $*$ | À | ri | le | dì | ín | nâ | bo |
| e. | $*$ | À | ri | le | dì | nâ | bo | ín |
| f. | $*$ | À | ri | le | dì | nâ | ín | bo |

The facts established can be summarized as follows: All of the particles can co-occur except $\dot{a}(\mathrm{Q})$ and $n \hat{a}$ (EMPH). The particle $i n$ (PST) precedes all the other particles (although it is very marginally acceptable after bo (NEG). The particle bo (NEG) precedes $\dot{a}(\mathrm{Q})$ and $n \hat{a}$ (EMPH). The particles $\dot{a}(\mathrm{Q})$ and $n \hat{a}(\mathrm{EMPH})$ are always clause-final when they occur.

### 2.3.4.4 Verb Stems

Usually, aspectual inflection is marked on the bare verb. However, sometimes the bare verb is modified before it is inflected. These verb stems are not well understood but I describe them briefly here. Different shades of meaning can be obtained by changing the tone of the verb root and adding a final nasal consonant. There are two patterns of tones that I am calling variation 1 and variation 2. Table 2.26 gives an example of these two sets for verbs from each tone group, except M!HL, for which I do not have data. There is no currently accepted orthographic convention for the forms for variation 2, so the forms given in Table 2.26 are my attempt to correctly represent their tone.

Table 2.26 Verb Stem Variations

| Bare Verb |  | Variation 1 |  | Variation 2 |  | Gloss |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Form | Tone | Form | Tone | Form | Tone |  |
| kú | H | kúun | HM | kúúuúun | HHMHM | die |
| dè | L | dèén | LH | dèêên | LHLHL | take |
| kع1 | M | kecln | MHM | keĉêln | MHLHL | talk |
| $\mathrm{gb} \varepsilon$ | M(L) | gbecn | LHM | gbèżzézn | LHMHM | drink |
| fli | M! ${ }^{\text {a }}$ | fliin | MHM | fliíiiin | MHMHM | survive |
| wô | HL | wóon | HM | wôoóon | HLMHM | fall |
| blíin | H! H | blíin | HM | blííiíin | HHMHM | fold |

These verb forms occur with the prospective aspect suffixes, $-a$ and $-b \grave{\varepsilon}$, as well as with the completive suffix, -è. Often the first variation contributes the idea that it will be too late to stop the event from happening. The examples below show the first variation with the prospective aspect 1 suffix (113), the prospective aspect 2 suffix (114) and the completive suffix (115).
113. Ń nì àníi kpe kùn à bè gbáno ń jìr-a? 1SG if this mushroom eat.PRFV 3SG MOD how 1SG transform-PRSP1 If I eat this mushroom, what will that do to me?

| Á | bè | kúun-a. |
| :--- | :--- | :--- |
| 2SG | MOD | die.V1-PRSP1 |
| You will die. |  |  |

consultant comment: If you answer this question with the simple future ( $A$ bè kúa), it's not necessarily the case that you will die. You might just get very sick. With this response, you are talking about actual death.
114. À bè kęln-bè.

3SG MOD talk.V1-PRSP2
He's going to tell!
context: I told a secret to a group of people. One person left the group. Someone asks me if I had remembered to tell him that it was a secret and he shouldn't repeat it, but I hadn't. I go after him to tell him before it's too late and he's told someone, but I see him in the distance talking with some other people and I know he's telling the secret. It's too late to stop him.

## 115. Á ni pom tyénl à húnmo à ri kúun-è. 2SG if apple plant.PRFV DEF1 here 3SG FIN die.V1-CMPL If you plant an apple tree here, it dies.

The second variation intensifies the meaning of the verb so that it is done completely, and the result is either extremely positive or extremely negative, depending on the context. The next few examples show this verb form with the prospective aspect 1 suffix $(116,117)$, the prospective aspect 2 suffix (118) and the completive suffix (119).

| 116. | Á | wo | Nadine | jà | bo, | à | bè | wôoóon-a. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3SG | NPI | Nadine | grab.PRFV | NEG | 3 3G | MOD | fall.V2-PRSP1 |  |
| If you don't grab Nadine, she will fall (and probably hurt herself). |  |  |  |  |  |  |  |  |

117. À bè à nun=î gbčźcézn-a.

3SG MOD DEF1 water=DEF2 drink.V2-PRSP1
He will drink (everything).
context: He's not going to leave anything for anyone else.
118. À $\mathrm{b}^{\prime}$ à náan=̂̂ totá-a bo. Ń b' à jàáaáan-bè. 3SG MOD DEF1 ground=DEF2 touch-PRSP1 NEG 1SG MOD 3SG catch.V2-PRSP2 It won't touch the ground. I'll catch it (just in time).

| 119. | Á | ni | pom | tyéńn | à | húnmo, | à | kúûûn-è. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2SG | if | apple | plant.PRFV | DEF1 | here | 3SG | die.V2-CMPL |  | If you plant an apple tree here, it will die completely.

consultant comment: It will die so completely that even the stem will rot. I'm telling you it's not even worth trying.

### 2.4 Background Information on the Siamou Language and Culture

This section is divided into three parts. The first section is a description of the language context in which Siamou is situated (1.4.1). Section 2 provides an overview of the literature that exists on Siamou, both on linguistic (1.4.2.1) and non-linguistic (1.4.2.2) topics. In 1.4.3, I give a brief sketch of Siamou culture and some of my personal experiences in the Siamou community.

### 2.4.1 The Demographic Context of the Siamou Language

Siamou is spoken in Burkina Faso, Ivory Coast and Mali. Ethnologue (Lewis et al. 2013) puts the number of speakers as of 1999 at 40,000. About half of these are located in Burkina Faso. Burkina Faso is a landlocked country in West Africa, bordered by six other countries: Mali, Niger, Benin, Togo, Ghana, and Ivory Coast (Côte d'Ivoire) (Figure 2.2).


Figure 2.2 Map of West Africa ${ }^{56}$

[^37]The Siamou speakers of Burkina Faso live mainly in the south-western province of Kenedougou in a twenty kilometre radius around the Siamou town of Orodara (Tòl), ${ }^{57}$ which is about 80 kilometres west of the city of Bobo-Dioulasso. (See Figure 2.3.)


Figure 2.3 Map of Burkina Faso ${ }^{58}$
The population of Orodara was about 16,000 as of 2004 , but a high percentage of the population are not Siamou speakers (Haas 2004). There are at least nine Siamou villages in Kenedougou, including Orodara (Tòl), Lidara (Dra), Tin (Ténn), Bandougou (Hlí), Diéri (Jel), Diossogo (Jìsa), Koutoudeni (Yitye), Diérideni (Lí), and Niale (Nel) (Prost 1964, Haas 2004, Souleymane Traoré p.c). Each of these villages has its own dialect, with that of Bandougou being the most distinct. (See Traoré 1984, 1985.) The focus of this work is the Siamou spoken in the village of Tin.

[^38]Most native Siamou speakers are also fluent speakers of Jula, the local trade language, and some can also read and write it. Siamou borrows extensively from Jula, including all numerals above 30. Those who have gone to school also speak and are literate in French. Siamou literacy rates have been growing since 2004 when the first Siamou literacy classes began, started by Lillian (Haas) Nicolson, and now run by Maminata Coulibaly. There are up to twenty literacy centres that put on classes every year, spread across the Siamou speaking part of Kenedougou. Since then, various small booklets have been published in Siamou, including primers, fables, and a short grammar. (See 2.4.2.1.)

Siamou is a member of the Kru (Niger-Congo) language family. It is the only Kru language spoken in Burkina Faso. More information about Kru and the languages of Burkina Faso is given in 2.5.2-2.5.4.

### 2.4.2 Scholarly Work on Siamou

Literature on Siamou is relatively scarce. There are seven known published sources that provide information on the Siamou language. These are described in 2.4.2.1. In addition, there are two cultural references for Siamou (one on ethno-mathematics, and one on musical instruments). These are described in 2.4.2.2.

### 2.4.2.1 Siamou Linguistics

The first known reference to Siamou is a general description that forms one chapter in a book on Gur languages (formerly known as Voltaic), with which Siamou was originally classified (Prost 1964). The second is a short article by a French Africanist historian, Yves Person, who was the first one to group Siamou with the Kru languages (Person 1966). Kotolama Traoré, a Burkinabé linguist, who is a native Siamou speaker, has published two works on Siamou: a description of the phonology (Traoré 1984) and a study of Siamou syntax (Traoré 1985). There are also two sources that contain a small amount of information on Siamou, both written by Lynell Marchese. The first of these is a survey of the Kru languages (Marchese 1983), and the second is a description of tense, aspect and auxiliaries in Kru languages (Marchese 1986). There are currently three Canadian linguists working on Siamou: Lillian (Haas) Nicolson, Paul Thiessen, and me. Lillian and Paul's generous sharing of their knowledge of Siamou has been immensely helpful to me in writing this dissertation. They have compiled a number of unpublished language resources, as well as a published article on the particle $k i$ (Haas 2004). The unpublished
resources include a Siamou-French dictionary containing approximately 4000 entries (Thiessen et al. n.d), some phonology papers (Thiessen 2005, Nicolson 2010), as well as various literacy materials, such as a primer and some small booklets. More recently, a short reference grammar has been published, completely in Siamou (Nicolson et al., n.d), which includes a description of contractions, tone marking, nominalization, pluralization, verbal inflection, and more. The following pages describe some of these Siamou references in more detail.

### 2.4.2.1.1 Prost (1964) on Siamou

Prost (1964) gives a brief overview of Siamou grammar, including the sound system: vowels, consonants, syllable structure and tone. He observes that Siamou has a high tone and a low tone. He also describes plural formation, definiteness, enclitics, counting, wh-questions, and more. Prost (1964) includes Siamou with the Gur languages, and he observes that it was once considered a Mande language. However, he says that Siamou has nothing in common with either of these families, except for the fact that it uses the word $f u$ for the numeral ten, which some Mande languages also do. He hints at a possible connection with languages from Ivory Coast, since Siamou tradition says they come from the south.

### 2.4.2.1.2 Person (1966) on Siamou

Person (1966) is the first to classify Siamou as a Kru language. This claim is based on an observation that Siamou resembles certain Kru languages, such as Bété, Guéré, Dida, Bassa, and Klao, especially in certain lexical items, as well as in the formation of the plural. He makes a brief vocabulary comparison, and describes a number of phonetic properties that Siamou shares with other Kru languages, namely, a complex tone system, a set of labiovelar phonemes (/kp/, $/ \mathrm{gb} /, / \mathrm{nm} /$ ), and the frequency of onsets with the structure of a stop followed by $/ 1 / \mathrm{or} / \mathrm{r} /$. Siamou also lacks noun classes or genders, like most Kru languages. Person (1966) also observes that Siamou plurals resemble Kru plurals in that they are marked by a change in the final vowel and by tone raising (Table 2.27). However, the data given in Person (1966) mostly does not mark tone, ${ }^{59}$ and in fact, tone is usually lowered in Siamou plurals (Toews 2009a, Nicolson 2010). In Table 2.27, I have written the current Siamou dictionary entries for Person's (1966) forms in parentheses.

[^39]Table 2.27 Siamou Plurals according to Person (1966)

| Singular Noun | Plural Noun | Gloss |
| :---: | :---: | :---: |
| ta (tà) | t $\varepsilon$ ( t ) | cheek |
| lu (lu) | lui (luì) | wife |
| klo (klò) | kle (klòz) | thigh |
| fuō (fwoy) | fuè (fwoèn) | slave |
| boo (bwôn) | boe (bwôè) | dog |

Table 2.28 shows a number of nouns and their plural forms in Plawi, a Kru dialect. ${ }^{60}$ The vowel changes in the plural forms are similar to those in Siamou (fronting and raising, mainly) (see 2.3.3.4).

Table 2.28 Kru (Plawi) Plurals according to Person (1966)

| Singular Noun | Plural Noun | Gloss |
| :--- | :--- | :--- |
| gba | gbwe | woman |
| bile | bili | cow |
| nabo | nae('l') | man |
| popo | popwe | butterfly |
| bo | bee | foot |
| bwe | bwi | dog |

Other similarities between Siamou and other Kru languages include a number of grammatical morphemes that appear to be cognates (such as the negative particle bo in Siamou and the negative particle be in Grebo), and word order, both in the verbal and nominal domains. Person (1966) also gives a historical explanation for the geographical distance between Siamou and the other Kru languages, arguing that Kru languages were originally spoken further north than they are now, in Ivory Coast and Liberia, until the Mandé and the Maninka pushed them out. Most of them moved south, except for the Siamou, who fled north into Burkina Faso (Person 1966).

### 2.4.2.1.3 Traoré $(1984,1985)$ on Siamou

In his work on Siamou phonology, Traoré (1984) covers all the phonemes of Siamou, vowel nasalization, and tone. His focus is the dialect of Siamou spoken in Bandougou, which differs from the other dialects mainly in phonetics and phonology. He systematically works through the possible sound combinations and syllable structures. He discusses how words borrowed from Jula are changed to fit Siamou phonology (usually by changing three-syllable words into two-

[^40]syllable words, and two-syllable words into monosyllabic words, and forming regular Siamou plurals from borrowed words). He recognizes three tone levels, listed in (120), and five tone melodies, listed in (121).
120. Siamou Tone Levels According to Traoré (1984)

High
Mid
Low
121. Siamou Tone Melodies According to Traoré (1984)

High
Mid
Low
High-Low
High-Mid
Traoré's second work (Traoré 1985) focuses on the structure of the Siamou phrase. He looks at serial verbs, verbal predicates, non-verbal predicates, including situation predicates, such as (122a), identifying predicates, such as (122b), presentation predicates, such as (122c), descriptive predicates, such as (122d), as well as interrogatives, exclamatives, and responses. He also discusses argument types and thematic roles, pluralization (in particular, that it is marked on the noun phrase, not the noun), and a few other topics.

| 122. ${ }^{61} \mathrm{a}$. | Mókâl | mí | sàkār | mó | (Traoré 1985:17) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tô | be.there | kitchen | in |  |
|  | There is corn porridge in the kitchen |  |  |  |  |
|  | French: Il y a du tô dans la cuisine. (translation given by Traoré) |  |  |  |  |

b. À dồsō jô=ó ȳ̄
(Traoré 1985:18)
DEF1 hunter man=DEF2 COP
It's the hunter.
French: C'est le chasseur. (translation given by Traoré)
c. $\quad L \hat{\varepsilon}-\bar{\varepsilon}-\overline{1}$
(Traoré 1985:19)
house.PL-look
Look at houses.
Voici des maisons. (translation given by Traoré)

[^41]| A-ní | $1{ }^{\prime}={ }^{\prime}$ | f0̄ | só | (Traoré 1985:21) |
| :---: | :---: | :---: | :---: | :---: |
| DEF1-DEM | house=DEF2 | be.here | big |  |
| This house is big. |  |  |  |  |
| La maison est grande. (translation given by Traoré) |  |  |  |  |

Of special interest in this work is the section on verbal predicates. Traoré (1985) explains that the imperative form of the verb is the basic (or citation) form. He mentions the basic contrast in Siamou between the imperfective (inaccompli) and perfective (accompli). There is a contrast between imperfectives that use the auxiliary fon, which requires the speaker to have seen or be seeing the event, and those that use the auxiliary mí which means the speaker has not seen the event. In his examples, the imperfective morpheme is a suffix, -là (123), but he explains that this is not the only way to mark the imperfective, and that the tone is not actually low, but more like a lowered mid tone.

| 123. | Músá fō | bē-là | $\rightarrow$ | Músá | fวิ | b-1a | (Traoré 1985:34) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Músá be.here | come-IMPF |  | Músá | be.here | come |  |
|  | Musa is coming |  |  |  |  |  |  |
|  | French: Moussa | est en train | e | (tran | ation giv | en by |  |

In my analysis of the Tin dialect, I argue that the imperfective is a mid tone nasal suffix, but it is also a slightly lowered mid tone (see chapter 5). There are many irregular verbs that contain the phoneme $/ 1 /$ in the imperfective, so the mention of the -là suffix is intriguing because it could mean that historically the irregular /l/ was actually part of the regular suffix. In Traorés examples, most of the verbs do not have a nasal suffix in the imperfective. This may be part of the difference between the Bandougou and Tin dialects.

As for the perfective, Traoré mentions two kinds. The first is the suffix -è, which I refer to as the completive. This, he says, refers to completed events that occurred at a specific, known time. The second kind of perfective, which I also call perfective, refers to completed events that occurred at an unspecified time (Traoré 1985:34-35). The examples given are all from a group of verbs that pattern together, all taking the suffix $-\supset$. Here there are some definite dialect differences, as shown in Table 2.29.

Table 2.29 Tin Perfective versus Bandougou Perfective

| Gloss | Bare Verb | Perfective (Tin) | Perfective (Bandougou) |
| :---: | :---: | :---: | :---: |
| a. come | $\mathrm{b} \varepsilon$ | byè | bỳ̀ |
| b. drink | $\mathrm{gb} \varepsilon$ | yè | yò |
| c. take back | s ¢́ | shy ${ }^{\text {ć }}$ | shyó |
| d. shoot (an arrow) | t ¢́ | tyé | tyó |
| e. know | shu | hlò | hlò |
| f. gather | kúr | kró | kró |
| g. age | Tin: kol Bandougou: kwil | kró | kró |
| h. harvest (beans) | hlu | hlù | hlò |

The perfectives in bold are the ones that differ from Tin to Bandougou. ${ }^{62}$ Basically, verbs with a front vowel $(\varepsilon)$ in the bare verb all still have front vowels in the Tin perfective, but have back vowels in the Bandougou perfective. The bare verbs with a back vowel $(u, o)$ are the same in both dialects, except for (h). I am including kol in (g) with the back vowels, although it looks like it has a front vowel in the Bandougou dialect ( $k w i l$ ). From this data, it looks like the Tin dialect of Siamou has a perfective that more closely resembles the bare verb than the Bandougou perfective does.

Traoré also describes three future expressions. The one that is marked with the auxiliary $b \grave{c}$ (bè in my work) and the suffix -a is used to talk about distant and uncertain events (124) (Traoré, 1985:36). The second future has only the suffix - $a$ and is translated as either a future (125a) or a modal (125b). The third future he mentions is marked with the auxiliary, bè (b̀̀) and the suffix, -bê (126). There do not appear to be any major differences here between the dialect of Bandougou and that of Tin.

```
124. À b\grave{\varepsilon} b\overline{c}-\overline{a}
3SG MOD come-PRSP1
    He will come.
    French: Il va venir. (or Il viendra.) (translation given by Traoré)
```

| a. | Ń | dwon | be-a |
| :--- | :--- | :--- | :--- |
|  | 1 SG | tomorrow | com |

        1SG tomorrow come-PRSP1
        I will come tomorrow.
        French: Je viendrai demain. (translation given by Traoré)
    [^42]$\begin{array}{llll}\text { b. } & \text { Ń } & \text { mókal } & \text { di-a } \\ \text { 1SG } & \text { corn.porridge. } & \text { eat-PRSP1 } & \end{array}$
I want to eat corn porridge.
French: Je veux manger du tô. (translation given by Traoré)
126. Nò b $\quad$ jō-b $\hat{\varepsilon}$
rain MOD fall-PRSP2
It will rain (soon).
French: Il va pleuvoir. (translation given by Traoré)

Finally, Traoré mentions that the habitual is marked by the morpheme beni plus the bare verb. I found this construction in Tin as well, but only with one-verb predicates. If there is a serial construction with two verbs, the structure is BARE VERB ni BARE VERB. The morpheme ni means and. Perhaps the habitual requires two verbs, and if there is only one, a dummy verb $b \varepsilon$ (come) is inserted.

### 2.4.2.1.4 Marchese $(1983,1986)$ on Kru

Marchese (1983) is the most comprehensive reference for Kru languages currently available. It contains a description of the division of Kru languages into an Eastern branch and a Western branch, with a few outliers, including Siamou. She describes canonical syllable structure and phonological properties of Kru languages as well as properties of noun phrases and verb phrases, and some syntactic constructions, including causatives, interrogatives and focus constructions.

Marchese (1986) has given a preliminary description of tense and aspect in a large sampling of Kru languages (Dida, Bété, Godié, Koyo, Neyo, Wobé, Nyabwa, Guéré, Krahn, Grebo, Tepo, Bereby Kru, Cedepo, Nyabo, Borobo, Bassa, Dewoin, Klao, Bakwé, Sapo, Kuwaa, Aïzi, and Seme (Siamou)). Kru languages express tense and aspect in the following ways: suffixation, second position particles, auxiliaries, sentence initial markers, and periphrasis. There is one category that has been described as a future tense, and four aspectual categories: perfective, imperfective, progressive and perfect. While nearly every language in Marchese's (1986) study has perfective, imperfective and progressive aspect, and future tense, the perfect only exists in some languages. Also, Marchese (1986) argues that the perfective in nearly all Kru languages is a certain kind of perfective known as a factative. The factative was described by Welmers (1973) based on data from Igbo. It has a past interpretation with eventive verbs and a present interpretation with stative verbs (Welmers 1973, Déchaine 1993). However, in Kru languages the factative is different in that it has either a present interpretation with statives or it
is neutral, having either a past interpretation or a present interpretation (Marchese 1986). Throughout this thesis, I rely heavily on Marchese's (1986) description of tense and aspect in Kru languages, making frequent comparisons and contrasts with the data I have collected for Siamou.

### 2.4.2.2 Siamou Ethnography

Apart from information on the Siamou language, there are three other references to Siamou. The first is a dissertation published on the subject of Siamou mathematics (Traoré 2006). The second is an article on Siamou numerals (Traoré and Bednarz 2008), and the third is an article on Siamou musical instruments (Belliard 2014).

### 2.4.2.2.1 Traoré (2006) on Siamou Mathematics

Traoré (2006) describes traditional practices involving mathematics, including counting, buying and selling goods, measuring produce, and constructing buildings. He shows that Siamou has a number system that is divided into irregular sized groups: 10, 20, 100, 1000 and 200,000. His thesis also outlines the challenges of the education system in Burkina Faso. Traoré and Bednarz (2008) continue this theme with a description of the Siamou numerals. Most Siamou speakers use Siamou numbers from 1-29 and Jula numbers from 30 on.

### 2.4.2.2.2 Belliard (2014) on Siamou Musical Instruments

Belliard (2014) gives a description of how Siamou musical instruments are constructed and played. First he describes Siamou's social structure, which includes three main groups of people: farmers (the majority), blacksmiths, and griots (musicians). Blacksmiths are the ones who make the instruments for the griots. He provides a list of Siamou instruments, some of which are borrowed from neighbouring people groups, and a list of the materials used in their construction, including metal, wood, bamboo, leather, cowrie shells and more. He also describes the contexts in which these instruments are played. These contexts include fieldwork, weddings, initiation ceremonies, welcoming officials, and soccer games.

### 2.4.3 Siamou Culture and Personal Experience with the Siamou Speech Community

In 2003-2004 I spent about a year living in the courtyard of Téndenno in the village of Tin. I lived with a Canadian literacy worker, Lillian Haas (now Nicolson). My reason for being there was to homeschool the two youngest children of Canadian missionaries, Paul and Lois Thiessen,
who have lived in Tin since the early 1980s and are working on a translation of the Bible into Siamou. I returned to Burkina Faso with my husband for a six month (October 2009 to March 2010) research trip to collect data for this dissertation. On this second trip, I divided my time between Tin and Orodara. The following description is based on my observations, on the writings of Kotolama Traoré, and on descriptions of Siamou culture given to me by Souleymane Traoré.

### 2.4.3.1 Agricultural Production

The province of Kenedougou is one of the least arid parts of Burkina Faso, and is relatively wellsuited to farming, which is a main occupation of its inhabitants (Traoré 1985:3). Siamou farmers grow peanuts, millet, sorghum, corn, yams (huge tubers that are often as large as watermelons and much heavier), fonio (a local grain), groundpeas (similar in taste and texture to chickpeas), as well as the cash crops of cotton and a type of hibiscus flower called dah in Jula. ${ }^{63}$ They also harvest mangoes, oranges, guava, papaya, palm fruit, shea fruit and nuts, baobab fruit, and néré seeds, from which they make a seasoning called soumbala which has a delicious (but acquired) taste. Families keep sheep and chickens for meat and eggs. Other protein sources include catfish, various small fish, wild game, shea caterpillars, and termites. Lillian was keen to learn everything possible about Siamou culture, and so when I was there she often went on trips to visit friends in the fields, taking me along with her. I got to try my hand at harvesting peanuts, sorghum, groundpeas and cotton. We also went to a number of fonio harvests, which are huge parties with live music. The cut fonio is made into a large pile and men (and occasionally women) stand in a circle, beating the fonio in time to the music. Hibiscus is harvested during cold season. After it is dried, the petals are peeled off the stalk by hand. This is tedious work, and is often done in the evening around a fire. The plants are full of tiny little prickles that are hard to see but hurt the hands. For the month of December, wherever you go, you see people with hands stained purple from peeling hibiscus.

Most adults in the village keep their own fields. (Husbands and wives usually keep separate fields.) During the day, people spend time working the soil, weeding, and tending livestock. They also weave rope and many varieties of baskets from palm leaves. During dry

[^43]season (September to May) the fieldwork slows, and it is a time for fixing houses and walls that have fallen down, and cleaning mud out of wells.

### 2.4.3.2 Social Life of Women

Women in Tin may spend their time planting, weeding, and harvesting their fields, and spreading the produce out to dry in the sun to preserve it. They often allow chickens free rein to walk through the harvested produce and pick out bugs. They also pass many hours pounding grain, gathering wood, fetching water, washing clothes and dishes in the stream, cooking, making shea butter and soap, and perhaps selling things like oranges and tomatoes beside the road. By the time a girl is seven, she can make a fire and cook a meal over it. Since a large amount of time is spent working, these activities are often done in groups to allow socializing. In their spare time, they sometimes create intricate patterns in each other's hair by braiding and twisting strands tightly. In the evening, they sometimes tell stories interspersed with catchy songs. As a woman, I had the opportunity to participate in many of these activities, especially washing my clothes at the river.

### 2.4.3.3 Social Activities

In their spare time, some people play cards, such as "huit américain," which is similar to Uno, or a more intense game called ballot, which resembles Rook, except that it is much more complicated. During my first time in Burkina Faso, Lillian and I went to many ballot card parties that went late into the night. Only four people can play at once, but these parties often consist of eight or more people. The people sitting out usually watch the game intently. At these parties, usually one person is set apart to make gunpowder green tea, which is a time-consuming process that requires skill and patience. The same leaves are steeped three times. The first steeping, called "première," is quite hair-raising because of the high cafeine content, with the second and third steepings (deuxième and troisième) being much more mellow.

### 2.4.3.4 Economic Activities

Saturday is market day in Orodara, and many people from Tin make the 15 kilometre trip on foot, bicycle, or motorcycle, to buy and sell things in the market, returning in the evening. At the market, merchants spread out their goods on tables or on mats on the ground. Some of the items that can be found at the Orodara market include vegetables, sandals, bicycle parts, cooking pots, woven baskets, henna powder, and a variety of hot food for eating as you shop.

The village of Tin does not have its own market day, but there is a small shop in one of the courtyards where you can buy tomato paste, matches and a few other small items. People may also have fresh fruit or vegetables for sale, including oranges, mangoes, or tomatoes, outside their courtyards.

### 2.4.3.5 Traditional Rites of Passage

Siamou people come from an animist tradition, with many ceremonies, including circumcision (male and female), initiation (male only, occurring approximately every thirty years) and the lô (a ceremony which non-initiated people, including women, are not allowed to see). ${ }^{64}$ Most ceremonies, including weddings, take place during dry season, when people take a rest from farming.

### 2.4.3.6 Islamic Influence on Marriage Ceremonies

Since some Siamou villages, mainly Diéri and Tin, turned to Islam in the mid twentieth century (Thiessen p.c), some of these traditions have begun to change. Muslim weddings in Tin are very different from traditional Siamou weddings in Orodara, for example. Having gone to many more weddings in Tin than Orodara, I am more familiar with the Muslim variety. These weddings are a week-long affair. In order to prepare for the wedding, the families save up money. Often the families will order wedding cloth and all have outfits made from matching material.

The celebrations start Wednesday night when the women have a putting-on-henna party. (Henna is also put on to celebrate other important events, such as Tabaski. ${ }^{65}$ ) In reality, putting on henna takes a few days. The bride or her friends may spend hours cutting fine strips of surgical tape, and sticking them on her feet and right hand to make intricate designs. Then, they make a paste with dried henna leaves and water, caking it to her feet and hand, and wrapping them all in plastic bags. The henna is left on all day or over night, and this process is repeated with fresh henna one or two more times. While the henna is on, walking is discouraged because this could dislodge the tape and wreck the design. Since the right hand is also bagged, most activities are restricted. (Fortunately, I am left handed, so when I went through this process before my departure from Burkina Faso, I could still write, but eating, which is usually done with the right hand was problematic.) After this process is done, the tape and henna are removed,

[^44]leaving a beautiful orange pattern. Then a mixture is made with foul smelling ammonia crystals, wood ash, and water. This is applied to the henna dyed areas for about an hour. When this is removed, the parts of the skin that the henna had dyed have become a dark black with some bits of green or orange where the skin is less callous.

By the time the henna party takes place, this long process may already be finished or nearly finished. Except for the strictest Muslim courtyards, there is usually a band with a balaphone (an instrument that resembles a xylophone) and drums, and the women all gather to sing and dance. Dancing involves a group of people standing in a circle, each person facing the back of the person in front of them. As they dance they move slowly around the circle. Sometimes the women put on skits. I was at one henna party where two old women put on a skit that imitated some of the people from their courtyard who had passed away. The skit involved hiding food in their clothes and trying to steal it from each other. The audience found it hilarious.

The wedding officially lasts from Thursday to Monday, during which time the bride is in a room and not allowed to leave. On Monday, there is a ceremony to honour the bride where people give her small coins or gifts of sauce ingredients and tell stories to the people gathered about good things she has done. Again, there is music and dancing, but with men involved it often gets more competitive. Since there is no electricity in the village, the wedding parties often take place in near total darkness, except for a few flashlights or kerosene lanterns. Some families, however, rent a battery powered light, which they shine on the dancers. As the circle of dancers moves, each person gets their chance in the spotlight, and those who want to show off their dancing skills tuck branches with leaves on them into their pants to accentuate their leg movements, and try to stay in the spotlight as long as possible until the pressure from those behind them pushes them forward. The dancing may last late into the night, but the party ends when the bride and all her belongings are taken to her new husband's courtyard. Usually the guests form a procession, accompanied by a "little bride", a young girl who takes the place of the bride in order to trick the spirits. The real bride usually goes on the back of a motorcycle.

### 2.4.3.7 Linguistic Identity

Siamou speakers are proud of their language, and they are thrilled when foreigners take an interest in learning Siamou rather than the trade language, Jula, which is more widely spoken. They took special care to teach me "real" Siamou words, and remarked happily when I used the

Siamou word for bicycle, instead of the Jula word, even though they themselves might freely use the Jula word.

### 2.5 How Siamou Fits into the Kru Language Family

Kru is a language family with 39 members, according to Ethnologue (Lewis et al. 2013). In the following sections, I describe some basic characteristics of Kru languages (2.5.1), and I show how Siamou is an outlier both geographically (2.5.2) and linguistically (2.5.3). In 2.5.4 I provide a list of all the Kru languages.

### 2.5.1. Characteristics of Kru Languages

Kru languages have an S Aux OV word order ${ }^{66}$, and sometimes an S (Part) VO word order (2.5.1.1). They are also characterized by complex tone systems (2.5.1.2) and a basic aspectual contrast of perfective and imperfective (2.5.1.3).

### 2.5.1.1 Kru Languages Are SVO and S Auxiliary OV

Kru languages have mixed word order properties. If there is no auxiliary, the word order is SVO but in certain environments (such as negative clauses), the order may change to S Auxiliary OV. The affirmative clause in (127a) has SVO order, but when the same clause is negated with an auxiliary (127b), the order of the object and the verb is reversed, and the order is S Aux OV.
127. language: Dewoin (from Marchese 1986:168)
a. $\quad \bigcirc$
he
pi sayè. cook meat He cooked meat.
$\begin{array}{lllll}\text { b. } & \begin{array}{lll}\text { a } & \text { se } & \text { saỳ̀ } \\ \text { he } & \text { NEG.AUX } & \text { meat } \\ \text { He cook }\end{array} & \text { negative (with AUX) } \\ & & \end{array}$

Unlike auxiliaries, particles do not cause a change in word order. In (128), there is a negative particle with a VO word order. This is the main way particles are distinguished from auxiliaries in Kru languages: they do not cause a change in word order, while auxiliaries do (Marchese 1986).

[^45]128. language: Dewoin (from Marchese 1986: 24)

| $\bar{j}$ | ní | pī | sāyè. |
| :--- | :--- | :---: | :--- |
| he $\quad$ NEG.PART | cook | meat |  |
| He doesn't usually cook meat. |  |  |  |

Koopman (1984) analyzes the OV/VO alternation of the kind shown in (127) as a verbsecond effect. The underlying position of the verb is in the VP following the object (OV). When the higher INFL position is empty, the verb raises to fill it, resulting in an SVO order, as in (127a). When there is an auxiliary, as in (127b), it fills INFL and the verb remains in situ, resulting in an S Aux OV word order. Thus, S (Aux) OV would be the basic word order in Kru. Marchese (1986) also argues that the surface SVO order has developed from a historic SOV order (Marchese 1986:94). Kru has a number of OV properties that support this hypothesis. First of all, Kru languages are predominantly suffixing. For example, in most Kru languages, the plural is a suffix. The plural of $p u$ ('gun') in Tepo is pui (129).
129. language: Tepo (from Marchese 1986:16)
a. pu
gun
b. pu-i
gun-PL
gun
guns

Kru languages have postpositions, as opposed to prepositions (130).
130. language: Neyo (from Marchese (1986:18), originally from Thomann (1905))
nezo ko
road on
on the road
Possessors precede possessums (131).
131. language: Godié (from Marchese 1986:17)

Poss N
nā $6 u ̄ t u ̄$
my house
Compounds have an OV word order (132).
132. language: Klao (from Marchese 1986:19)

```
O V
[dc̀-d\overline{]-yò}
thing-plant-person
farmer
```

There is an associative marker that separates two nouns (133).
133. language: Grebo (from Marchese 1986:18)
ke a kae
chief ASSOC house
the chief's house

The above properties are all usually associated with languages that have OV word order (Greenberg 1966, Marchese 1986, Comrie 1989, Croft 2003).

Siamou differs from other Kru languages in that it does not display any alternation in word order, but has an S (Part) OV word order all the time (134).
134. language: Siamou

| S | PART | O | V |
| :--- | :--- | :--- | :--- |
| À | ri | le | dì. |
| 3SG | FIN | food | eat.PRFV |
| She ate food. |  |  |  |

Therefore there is no need to distinguish between particles and auxiliaries in Siamou. What I have called particles could also be called auxiliaries, but I have called them particles because they are not verb-like: they do not inflect and they do not occur in the position of verbs.

### 2.5.1.2 Kru Languages Are Tonal

Like most Niger-Congo languages, Kru languages are tonal. Many Kru languages have three level tones, and there is evidence of four level tones in some languages. Kru languages also have contour tones, which are understood to be a combination of two (or more) level tones within one syllable. Tone in Kru languages marks both lexical and grammatical categories (Bendor-Samuel 1989). Table 2.30 shows a Kru language (Krahn) that has three level tones.

Niaboua is a language with four level tones (Table 2.31). Siamou is also a language with four level tones $(H,!H, M$, and $L)$. However, the ! $H$ tone does not have the same status as the
other tones because it does not exist on its own as a tone melody group (see 2.2.). Siamou also has contour tones: HL, H!H and M!HL.

Table 2.30 Three Level Tones in Krahn ${ }^{67}$

| Tone | Word | Gloss (English) | Gloss (French) |
| :--- | :--- | :--- | :--- |
| a. High | té | checkers (game) | dames (jeu) |
| b. Mid | tē | bend over backwards | se pencher en arrière |
| c. Low | tè | keep | garder |

Table 2.31 Four Level Tones in Niaboua ${ }^{68}$

| Tone | Word | Gloss (English) | Gloss (French) |
| :--- | :--- | :--- | :--- |
| a. High | kpá | beaten earth | terre battue |
| b. Upper Mid | kpà | bone | os |
| c. Lower Mid | kpā | marry | épouser |
| d. Low | kpà | help | aider |

Marchese (1983) argues that the four-level pattern is more typical than the three-level pattern because even some of the three-level languages display evidence of a four-way split. For example, Godié is a language with three level tones. However, mid tones in Godié behave in different ways. One way in which they pattern differently is with two syllable nouns that have a L-M tone pattern in their singular form. They have one of two patterns when pluralized: either they become L-H (Table 2.32a) or L-M (Table 2.32b).

Table 2.32 Two Types of Mid Tones in Godié ${ }^{69}$

| Word | Gloss (English) | Gloss (French) | Plural | Plural Tone |
| :--- | :--- | :--- | :--- | :--- |
| a. tàf̄̄ | row | rayon | tàfŭ | L-H |
| b. dèd̄̄ | net | filet | taf̄̄ | L-M |

Kru languages also have contour tones. The examples in Table 2.33 are from Krahn.
Table 2.33 Contour Tones in Krahn ${ }^{70}$

| Tone | Word | Gloss (English) | Gloss (French) |
| :--- | :--- | :--- | :--- |
| a. LH | fǒ | split | fendre |
| b. LM | kā | bad | mal |
| c. MH | kā | crab | crabe |

[^46]
### 2.5.1.3 Kru Languages Have a Perfective/Imperfective Contrast

Marchese (1986) considers perfective and imperfective to be the basic aspects in Kru. Although Kru languages often also have a perfect and a progressive, only the perfective and imperfective were found in all the Kru languages that were part of her study. I explore the Kru perfective/imperfective contrast more in 3.4. Siamou resembles other Kru languages in this respect.

### 2.5.2 Siamou Is Geographically Non-Contiguous to Other Kru Languages

Twenty-two Kru languages are spoken in Ivory Coast and 16 in Liberia, mostly in one large cluster in the south. Siamou is the only Kru language that is spoken mainly in Burkina Faso (Lewis et al. 2013). There are two other outliers: Kuwaa and Aizi (a group of three languages). Kuwaa is spoken in Liberia, and Aizi in Ivory Coast. These languages are geographically separated from other Kru languages, but not by any great distance. Siamou, on the other hand, is situated far north of the other Kru languages. In the map below, Siamou (Seme) is in the top right corner.


Figure 2.4 Map of the Kru Languages ${ }^{71}$

[^47]In Burkina Faso, Gur languages are the most highly represented language family, making up 44 of the 65 languages spoken in the country. The Mandé language family is second, with 13 members. Other language families represented are Atlantic, Berber, Dogon, Afro-Asiatic, NiloSaharan, and Kru. The map below (Figure 2.3) shows the languages of Burkina Faso. Siamou is number 21, near the southwest corner. I have drawn a circle around it to highlight it.


Figure 2.5 Map of Burkina Faso Languages ${ }^{72}$

In the province of Kenedougou, the Siamou are surrounded by many other languages, mainly Niger-Congo languages from the Gur, Mandé and Atlantic families (Lewis et al. 2013). Some of the local Gur languages are Turka, Northern and Southern Toussian, and Sìcité Sénoufo. Mande languages include Seeku, Dzùùngo (also called Samogho (Solomiac 2007)), and Jula, which is the trade language spoken in the western part of Burkina Faso. There are also nomadic Fulani in Kenedougou who speak Fulfulde, an Atlantic language (Lewis et al. 2013).

[^48]
### 2.5.3 Siamou Is an Outlier Relative to Other Kru Languages

Of the 39 Kru languages, most fit into two branches: a western branch (23 languages) and an eastern branch ( 11 languages). Of the remaining five languages, three belong to the Aiza group, spoken in Ivory Coast. Two languages, Kuwaa and Siamou, do not belong to any subgroup (Marchese 1983, Lewis et al. 2013).

This means that we expect Siamou not to show stronger similarity to Western Kru languages than to Eastern Kru languages, nor the other way around. It may have some properties that resemble Western Kru languages, some that resemble Eastern Kru languages, and some properties that are distinct from both. Chapter 3 looks at how Siamou perfective and imperfective aspect compare with these aspects in Kru. I argue that the Siamou perfective is a $L$ tone suffix. However, in surface form, sometimes the L tone surfaces, and sometimes it does not. In Kru, the general pattern is that the Western branch has an unmarked perfective and the Eastern branch has a $L$ tone perfective. Thus, the surface forms of Siamou perfectives sometimes resemble Western Kru perfectives and sometimes resemble Eastern Kru perfectives. Siamou differs from both Western and Eastern Kru languages, however, in the formation of negative perfectives. In the other languages, negating a perfective structure with a negative auxiliary causes a change in word order from VO to OV. In Siamou, the word order is always OV, and there is no change in word order when perfectives are negated.

### 2.5.4 List of Kru Languages

Below is a list of all the Kru languages according to Ethnologue (Lewis et al. 2013). They are sorted according to family groupings: first the western branch, then the eastern branch, the Aizi grouping, and finally the two outliers: Kuwaa and Seme (Siamou). The country each language is spoken in is given in parentheses.

## 135. The Kru Language Family

## Western (23)

Bassa (3)
Bassa (Liberia)
Dewoin (Liberia)
Gbii (Liberia)
Grebo (9)
Glio-Oubi (1)
Glio-Oubi (Liberia)

```
    Ivoirian (3)
    Krumen, Plapo (Ivory Coast)
    Krumen, Pye (Ivory Coast)
    Krumen, Tepo (Ivory Coast)
        Liberian (5)
        Grebo, Barclayville (Liberia)
        Grebo, Central (Liberia)
        Grebo, Gboloo (Liberia)
        Grebo, Northern (Liberia)
        Grebo, Southern (Liberia)
    Klao (2)
        Klao (Liberia)
        Tajuasohn (Liberia)
    Wee (9)
        Guere-Krahn (6)
            Daho-Doo (Ivory Coast)
            Glaro-Twabo (Liberia)
            Krahn, Western (Liberia)
            Sapo (Liberia)
            Wè, Southern (Ivory Coast)
            Wè, Western (Ivory Coast)
        Konobo (1)
            Krahn, Eastern (Liberia)
        Nyabwa (1)
            Nyabwa (Ivory Coast)
        Wobé (1)
            Wè, Northern (Ivory Coast)
Eastern (11)
    Bakwe (2)
        Bakwé (Ivory Coast)
        Wané (Ivory Coast)
    Bete (5)
        Eastern (2)
            Bété, Gagnoa (Ivory Coast)
            Kouya (Ivory Coast)
        Western (3)
            Bété, Daloa (Ivory Coast)
            Bété, Guiberoua (Ivory Coast)
            Godié (Ivory Coast)
    Dida (3)
            Dida, Lakota (Ivory Coast)
            Dida, Yocoboué (Ivory Coast)
            Neyo (Ivory Coast)
    Kwadia (1)
            Kodia (Ivory Coast)
```

Aiza (3)<br>Aiza Aproumu (Ivory Coast)<br>Aiza Mobumrin (Ivory Coast)<br>Aiza Tiagbamrin (Ivory Coast)

## Kuwaa (1)

Kuwaa (Liberia)
Seme (1)
Seme (or Siamou) (Burkina Faso)

### 2.6 Conclusion

This chapter was an overview of the Siamou language. There are 32 phonemes and eight tone melodies. Siamou has a S (Part) OV word order, and lexical heads follow their complements. The extended nominal projection contains adnominals, NP suffixes that mark plurality and definiteness, a left-edge definite particle and a possessive particle $\grave{n}$. In the extended verbal projection there is a clause-initial quotative particle, a number of pre-predicate particles, clause-final particles, and some unusual verb stems. Section 2.4 provided some background on Siamou, including demographics (2.4.1), a review of the literature relating to Siamou (2.4.2) and a brief description of Siamou culture (2.4.3). The last section (2.5) was a description of how Siamou fits into the Kru language family. In short, it shares some properties with other Kru languages, but it is a geographical and genetic outlier.

## 3. The Morpho-Phonology and Morpho-Syntax of Aspect in Siamou

The previous chapter presented an overview of the syntax of Siamou. This chapter focuses on one small part of Siamou syntax: the aspectual phrase. In 3.1 I introduce Siamou's six aspectual suffixes: the completive, the stative $-n \varepsilon ̀ n$, the perfective $-L$, the imperfective $-n$, the prospective aspect $1-a$, and the prospective aspect $2-b \hat{\varepsilon}$. In 3.2 I look at the morpho-syntactic properties of these morphemes, and I adopt the theory that they attach to the verb by right-alignment. In 3.3, I argue, based on segmental defectiveness and morphological irregularity, that the perfective and imperfective occupy a lower aspectual head than the other aspectual suffixes (1). I also discuss the posibility of aspect stacking.


Section 3.4 situates Siamou aspect within the larger Kru context using information and data from Marchese (1986). I discuss some generalizations about aspect marking in Kru, and then I focus on the main properties of the form of perfective and imperfective aspect, showing how Siamou is consistent with some but not all properties of Kru aspect. Section 3.5 summarizes the findings of this chapter and the work that remains to be done. In Section 3.6, which functions as an appendix, I come back to the irregular perfective and imperfective forms that I discussed briefly in 3.2.2 and describe them in more detail.

### 3.1 The Form of Siamou Aspectual Morphemes

Siamou has a set of six aspectual morphemes that are all verbal suffixes. Tonally, they fall into three categories: L tone, M tone, and HL tone. This set of suffixes and some of their properties are shown in Table 3.1. ${ }^{73}$

Table 3.1 Siamou Aspectual Suffixes

|  | Suffix | Tone Melody | Segmental Form |
| :--- | :--- | ---: | ---: |
| a. completive (CMPL) | -è | L | V |
| b. stative (STAT) | -nغ̀n | L | CVC |
| c. perfective (PRFV) | -L | L | - |
| d. imperfective (IMPF) | -n | M | C |
| e. prospective aspect 1 (PRSP1) | -a | M | V |
| f. prospective aspect 2 (PRSP2) | -b $\hat{\varepsilon}$ | HL | CV |

The following subsections introduce each of the six suffixes in turn, starting with the L tone set: the completive -è (3.1.1), the stative -nèn (3.1.2), and the perfective (3.1.3). This is followed by the M tone set: the imperfective $-n(3.1 .4)$ and the prospective aspect $1-a$ (3.1.5). Finally, I introduce the HL tone set, which has only one member: the prospective aspect $2,-b \hat{\varepsilon}$ (3.1.6). In conclusion, section 3.1.7 gives the complete paradigm, and discusses the significance of the tone classes. Readers who are not interested in these details can skip ahead to section 3.2. In the following descriptions, I look mainly at single syllable verbs. Multi-syllable verbs are subject to many of the same generalizations, but tone interactions between syllables complicate the subject more than is necessary for the present discussion.

### 3.1.1 Siamou Low Tone Completive -è

The first $L$ tone suffix to be considered is the completive, -è. Examples are given in (2). In (2a), the bare verb is gbj́n (tear), which has a H tone melody. ${ }^{74}$ When this verb is inflected for completive aspect, it has the form gbón-è. For this verb, the H tone of the bare verb and the L tone of the stem do not interact with each other. Sometimes, however, the completive suffix

[^49]affects the tone of the verb stem it attaches to. In (2b), the bare verb is di (eat), which has a M(L) tone melody. The completive form of this verb is $d \grave{i}-\grave{e}(\mathrm{~L}-\mathrm{L})$. Notice that the tone of the stem changes from a surface $M$ tone to a surface $L$ tone. This is the pattern for all $M(L)$ verbs when they are inflected for completive aspect.
2.

| a. | bare verb: | gbśn |
| :--- | :--- | :--- |
| translation: | tear |  |

À gbón-è.
tone melody: H-L
3SG tear-CMPL
It's torn.
French: C'est déchiré. (C)
b. bare verb: di
translation: eat
À ri le dì-è.
tone melody: L-L
3SG FIN food eat-CMPL
He just ate./He already ate (unfortunately).
French: Il vient de manger de la nourriture./Il a déjà mangé, (regrettable). (C)

The tones of completive-inflected verbs are predictable based on the tone melody group that the verb belongs to. In the Table 3.2, I show how completive inflection looks with one example for each tone melody group.

Table 3.2 Completive Aspect $-e^{75}$

|  | Group | Gloss | Bare Verb (V) | Completive (V-è) |
| :---: | :---: | :---: | :---: | :---: |
| a. | H | finish/end | tél | tél-è |
| b. | L | clear/sweep | gbèl | gbèl-è |
| c. | M | think/be amazed | bel | bel-è |
| d. | M (! ${ }^{\text {) }}$ | weave | fyel | fycl-è |
| e. | M(L) | hit | ŋmع | ymè-è |
| f. | HL | curse | bêl | bźl-è |
| g . | H! H | fry | gbécl ${ }^{76}$ | gbél-è |
| h. | M! HL | teach/read | ke $\varepsilon$ ln | kecln-è |

We see from the right-most column in Table 3.2 that this suffix consistently has the form -è. We

[^50]also see that the segmental form of the verb root does not change when it is inflected for completive aspect. However, the tone may change. In order to more clearly see these changes, Table 3.3 abstracts away from the segmental content of Table 3.2, and shows only the tone melodies. ${ }^{77}$

Table 3.3 Completive Aspect -è Tone

| Tone Melody Group | Bare Verb (V) | Completive (V-è) |  |
| :--- | ---: | ---: | ---: |
| a. | H | H | $\mathrm{H}-\mathrm{L}$ |
| b. | L | L | $\mathrm{L}-\mathrm{L}$ |
| c. | M | M | $\mathrm{M}-\mathrm{L}$ |
| d. | $\mathrm{M}(!\mathrm{H})$ | M | M |
| e. | $\mathrm{M}(\mathrm{L})$ | M | L |
| f. | HL | HL | $\mathrm{H}-\mathrm{L}$ |
| g. | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}-\mathrm{L}$ |
| h. | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HM}-\mathrm{L}$ |

The first column in Table 3.3 simply lists the eight tone melodies of Siamou, and the second column gives their surface form. For most of the tone melody groups, columns 1 and 2 are identical, except when there is a floating tone (shown in parentheses), which is the case for two tone melody groups: $M(L)$ and $M(!H)$. This is true for all tables of this sort in this chapter: the surface tone of the bare verb equals the label of the tone melody group minus the floating tones. Looking at the rightmost column, observe that the tone of the completive suffix is always L . Next, compare the bare verb surface tone (the middle column) to the tone of the verb stem in the rightmost column. In Table 3.3a-d, the tone of the bare verb is not affected when it is inflected for completive aspect. H verbs remain H , L verbs remain L , and so on. In Table 3.3e-h, the tone melody of the bare verb differs from the tone melody of the inflected verb. Most notably, M(L) verbs go from $M$ tone when they are uninflected to $L$ tone when they are inflected. For the first two contour tone melodies ( HL and $\mathrm{H}!\mathrm{H}$ ), only the first tone of the contour is retained. The third contour tone melody (M!HL) becomes $\mathrm{M}!\mathrm{HM}$.

To summarize, the completive suffix $-e ̀$ is consistently L tone. It sometimes, but not always, affects the tone of the verb it attaches to. Of particular interest is the fact that it causes a

[^51]$\mathrm{M}(\mathrm{L})$ verb to surface as a L tone rather than as a M tone. This fact plays a role in the analysis of the perfective in 3.1.3.

### 3.1.2 Siamou Low Tone Stative -nè̀n

The second aspectual suffix to be introduced is the stative, -nèn. This suffix patterns like the completive, differing only in its segmental form. Examples parallel to (2) above are shown in (3). When -nèn attaches to the H tone verb, gbón, the verb remains H tone (3a). When it attaches to the $\mathrm{M}(\mathrm{L})$ tone verb, $d i$, the verb changes from a M tone to a L tone (3b).
3.
a. $\begin{array}{ll}\text { bare verb: } & \text { gbśn } \\ \text { translation: } & \text { tear }\end{array}$

À ri gbón-nèn. tone melody: H-L
D $\quad \mathrm{FIN}^{78}$ tear-STAT
It's torn.
French: Elle est déchirée. (C)
b. bare verb: di tone melody: $\mathrm{M}(\mathrm{L})$
translation: eat
À ri le dì-nèn. tone melody: L-L
3SG FIN food eat-STAT
He has eaten (food). (i.e. He's not hungry.)
French: Il a mangé de la nourriture. (Veut dire qu'il n'a pas faim.) (C)
Table 3.4 contains the same verb set as Table 3.2. Like the completive, the form of the stative (-nèn) does not change, nor does it cause changes to the segmental form of the bare verb. However, it may cause changes to the tone melody of the bare verb. In order to view the tone information more clearly, I extract this information from Table 3.4 to show in Table 3.5.

[^52]Table 3.4 Stative Aspect -nèn ${ }^{79}$

|  | Group | Gloss | Bare Verb (V) | Stative (V-jı̀̀n) |
| :---: | :---: | :---: | :---: | :---: |
| a. | H | finish/end | tél | tél-ıǹ̀ |
| b. | L | clear/sweep | gbèl | gbèl- jè̀n |
| c. | M | think/be amazed | bel | bel- jè̀n |
| d. | M (! H ) | weave | fyel | fyel- jè̀ |
| e. | M(L) | hit | ๆm $\varepsilon$ | Ømè̇- nè̀ |
| f. | HL | curse | bêl | bél- jıèn |
| g . | H! H | fry | gbécl | gbél- jè̀n |
| h . | M!HL | teach/read | kecln | kéln- jè̀n |

The tone patterns in Table 3.5 are identical to the tone patterns shown for the completive in Table 3.3. When the stative attaches to $M(L)$ verbs, it changes them from a surface $M$ tone to a surface L tone. It also changes the contour tones from $\mathrm{HM}, \mathrm{H}!\mathrm{H}$ and $\mathrm{M}!\mathrm{HL}$ to $\mathrm{H}, \mathrm{H}$ and $\mathrm{M}!\mathrm{HM}$, respectively.

Table 3.5 Stative Aspect -nèn Tone

| Tone Melody Group | Bare Verb (V) | Completive (V-nèn) |  |
| :--- | ---: | ---: | ---: |
| a. | H | H | $\mathrm{H}-\mathrm{L}$ |
| b. | L | L | $\mathrm{L}-\mathrm{L}$ |
| c. | M | M | $\mathrm{M}-\mathrm{L}$ |
| d. | $\mathrm{M}(!\mathrm{H})$ | M | $\mathrm{M}-\mathrm{L}$ |
| e. | $\mathrm{M}(\mathrm{L})$ | M | $\mathrm{L}-\mathrm{L}$ |
| f. | HL | HL | $\mathrm{H}-\mathrm{L}$ |
| g. | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}-\mathrm{L}$ |
| h. | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HL}$ | M |

### 3.1.3 Siamou Low Tone Perfective

I stated above that the perfective is part of the set of $L$ tone aspectual suffixes. However, it is not immediately obvious that the perfective is $L$ tone, nor that it is a suffix. My goal in this section is to prove both. First, I give a surface description of perfective marking in Siamou, showing that it is sometimes marked and sometimes unmarked (3.1.3.1). Then I show that it is a suffix (at least when it is marked) (3.1.3.2). In 3.1.3.3 I argue that it is best analyzed as a $L$ tone suffix. In the last two sections (3.1.3.4 and 3.1.3.5) I present two competing hypotheses: either it is a linked L tone suffix (3.1.3.4), or it is an unlinked (floating) L tone suffix (3.1.3.5).

[^53]
### 3.1.3.1 The Perfective May be Marked or Unmarked

The general surface pattern for the perfective aspect is that it is sometimes marked by a $L$ tone (4a), and sometimes unmarked (4b). I use the term "unmarked" to indicate a verb with a surface tone that is identical to the uninflected (bare) verb's surface tone. The examples in (4) both involve verbs that are usually pronounced as M tone when they are uninflected. ${ }^{80}$ In (4a), the bare verb is $j a$ 'catch/grab', which has the tone melody $\mathrm{M}(\mathrm{L})$. In the perfective, this verb has the same segmental form, but it is now L tone ( $j \grave{a}$ ). In (4b), the bare verb is yen 'yawn'. This verb has a $\mathrm{M}(!\mathrm{H})$ tone melody. The perfective of this verb has the same segmental form ( $y$ zn) , and the same surface tone $(M)$ as the bare verb. Therefore, on the surface, the perfective in (4a) is marked and the perfective in (4b) is unmarked.
4.


Whether a verb has a marked (L tone) perfective or an unmarked perfective is determined by the tone melody group that the verb belongs to. For example, perfectives of all $\mathrm{M}(\mathrm{L})$ verbs are marked by a $L$ tone (as in $4 a$ ), and perfectives of all $M(!H)$ verbs are unmarked (as in $4 b$ ). This is true for both regular perfectives, such as those shown in (4), and irregular perfectives. Irregular perfectives have a segmental form that is different from that of the bare verb. In (5) the perfective form ( $h l \dot{\jmath}$ ) has a segmental melody that is completely different from that of the bare verb (shu), even though the tone of the perfective is still $L$, as predicted for $M(L)$ verbs.

[^54]5. bare verb: shu translation: know

Ń à hl̀̀ 1SG 3SG know.PRFV
I knew him/her/it.
tone melody: $\mathrm{M}(\mathrm{L})$
tone melody: L

### 3.1.3.2 The Perfective Is a Suffix

With one-syllable verbs, such as those shown in (4), it is not clear that the perfective $L$ tone is a suffix, since it replaces the surface tone of the bare verb. If all we have to go on is the data in (4a), the perfective could just as well attach at the left and be a prefix. In (6-7) I diagram these two possibilities. In (6) the perfective is a suffix that follows the verb. The uninflected verb is linked to its M tone. When the L tone perfective comes along, the verb links to the L tone of the perfective, resulting in a $L$ tone inflected verb. In (7) the perfective is a prefix that precedes the verb. The verb links to the $L$ tone of the perfective just like in (6), and with the same result. ${ }^{81}$ Therefore, so far a $L$ tone perfective prefix and a $L$ tone perfective suffix both look equally feasible. ${ }^{82}$
6. Perfective of $j a$ 'catch' as a Suffix

7. Perfective of $j a$ 'catch' as a Prefix


However, on a multi-syllable verb, the L tone of the perfective always occurs on the second syllable (8). The bare verb hloja 'believe' has the tone melody M-M(L). ${ }^{83}$ In surface form, it has a M tone on both syllables. The perfective of this verb has a M tone on the first syllable, but a L tone on the second syllable.

[^55]8. bare verb: hloja
translation: believe (literally 'truth-catch')
tone melody: $\mathrm{M}-\mathrm{M}(\mathrm{L})$
tone melody: M-L

| Mún wo án lô | fù=ri | hlojà | bo. |  |
| :--- | :--- | :--- | :--- | :--- |
| 1SG.EMPH NPI | 2SG.POSS | say.PRFV.NOM | DEM=DEF2 | believe.PRFV | NEG

I didn't believe what you said.
French: Je n'ai pas cru à ce que tu as dit. (C) (Thiessen et al. n.d)
This suggests that perfective tone marking is suffixal, as shown in (9). The first syllable of the uninflected verb is linked to the first $M$ tone, and the second syllable to the second $M$ tone. When the $L$ tone of the perfective comes along, the second syllable links to it, as expected. However, if the L tone of the perfective was a prefix, as in (10), there would be no way for the second syllable to link to it without crossing over the association line between the first M tone and the first syllable, which is not allowed (Goldsmith 1976).
9. Perfective of hloja 'believe' as a Suffix

10. Perfective of hloja 'believe' as a Prefix


For this reason, I claim that the perfective is a suffix. This conclusion is supported by the fact that the other aspect morphemes are also suffixes, as well as by the fact that Siamou has a fair number of suffixes apart from the aspectual suffixes, but it does not have many prefixes.

### 3.1.3.3 The Perfective Is a L Tone Suffix

The tone melodies of the perfective forms are predictable by the tone melody group of the verb. In Table 3.6 I show how this works with one verb from each of the tone melody groups.

Table 3.6 Perfective Aspect $-L^{84}$

|  | Group | Gloss | Bare Verb (V) | Perfective (V-L) |
| :---: | :---: | :---: | :---: | :---: |
| a. | H | finish/end | tél | tél |
| b. | M | think/be amazed | bel | bel |
| c. | M(!H) | weave | fyel | fyel |
| d. | M(L) | hit | ¢m $\varepsilon$ | ŋmè |
| e. | H! H | fry | gbécl | gbêl |
| f. | L | clear/sweep | gbèl | gbèl |
| g. | HL | curse | bêl | bêl |
| h . | M! HL | teach/read | kecln | kecln |

Table 3.7 extracts the tone information from Table 3.6. From Table 3.7, we can see that three of the eight tone melodies (Table 3.7a-c) have an unmarked perfective: $\mathrm{H}, \mathrm{M}$, and $\mathrm{M}(!\mathrm{H})$. This means that there is no difference between the tone of the bare verb and the tone of the perfective verb. Two of the eight tone melodies (Table 3.7d-e) have a $L$ tone perfective ( $M(L)$ and $H!H$ ). This means that the tone of the bare verb changes in such a way that it ends in a $L$ tone. The final three tone melodies (Table 3.7f-h) are indeterminate because the bare verb ends in a $L$ tone. This means that they may be marked with a L tone or they may not.

Table 3.7 Perfective Aspect - $L$ Tone

| Tone Melody Group | Bare Verb (V) | Perfective (V-L) |  |
| :--- | ---: | ---: | ---: |
| a. | H | H | H |
| b. | M | M | M |
| c. | $\mathrm{M}(!\mathrm{H})$ | M | M |
| d. | $\mathrm{M}(\mathrm{L})$ | M | L |
| e. | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}!\mathrm{H}$ | HL |
| f. | L | L | L |
| g. | HL | HL | HL |
| h. | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HL}$ |

If we assume that the perfective is underlyingly unmarked, then we have to explain the L tone that surfaces in perfectives of $M(L)$ and $M!H$ verbs. If we assume that the perfective is a $L$ tone, then we have to explain why the perfectives of $H, M$ and $M(!H)$ verbs do not have a $L$ tone. I argue that the second hypothesis provides the simplest account. It would be difficult to explain

[^56]why an unmarked form occasionally shows up as a $L$ tone. ${ }^{85}$ However, it is possible that the $L$ tone is sometimes prevented from surfacing because of faithfulness constraints that cause the tone of the bare verb to outrank the tone of the inflectional suffix.

The next two sections examine whether the perfective is a linked L tone suffix or a floating L tone suffix.

### 3.1.3.4 Hypothesis 1: The Perfective Is a (Linked) Suffixal L Tone

The first hypothesis is that the L tone perfective suffix links to the verb, causing it to become L tone. Looking again at $M(L)$ verbs in (11), the bare verb has a surface $M$ tone, with an unlinked L tone. The perfective contributes a L tone, which then links to the verb, causing it to become L tone.
11. Perfective of $d i$ 'eat' as a linked suffixal L tone


However, this is not what happens for all of the tone melody groups. For example, H tones remain H tone in the perfective, as shown in (12). This analysis does not explain why the perfective is sometimes faithful to the tone of the bare verb, as in (12), and sometimes takes the tone of the perfective, as in (11).
12. Perfective of tél 'finish/end' as a (linked) suffixal L tone


[^57]
### 3.1.3.5 Hypothesis 2: The Perfective Is an (Unlinked) Floating L Tone

The second hypothesis is that the perfective is a floating L tone suffix. What I mean by this is that it never links to the verb itself. Instead, its presence has an effect on the tone of the verb. This analysis could explain why not all perfective verbs are L tone.

To show how this works, look again at the $\mathrm{M}(\mathrm{L})$ in (13). The bare verb is M tone on the surface, but it has a floating $L$ tone. The presence of the $L$ tone of the perfective causes the verb to link to its own floating $L$ tone, not to the $L$ tone of the perfective. Therefore it is still faithful to the base, like the other tone melody groups, but it becomes L tone.
13. Perfective of $d i$ 'eat' as an unlinked floating $L$ tone


The biggest support for this hypothesis is the behaviour of the two other $L$ tone suffixes: the stative and the completive. These two $L$ tone suffixes have a similar effect on $M(L)$ verbs, as shown in (14). The only difference is that these $L$ tones have a segmental form to attach to, which the perfective does not.
14. Completive of $d i^{\prime}$ 'eat' as a Suffix


Therefore, even though I do not have an account for what causes the floating L tone of the perfective to change the linking of the $M(L)$ verb from its $M$ tone to its $L$ tone, $I$ do have Siamou-internal evidence that this is what happens to $M(L)$ verbs when followed by a $L$ tone suffix because this is what happens with the stative and completive suffixes. In 3.1.7 I compare the tone patterns of perfectives with that of statives and completives.

I have presented a number of conflicting hypotheses. Is the perfective marked or unmarked? If marked, is it a $L$ tone suffix or a $L$ tone prefix? If a $L$ tone suffix, is it a linked $L$ tone suffix or an unlinked L tone suffix? None of the hypotheses were completely satisfactory.

However, based on my current understanding of the data presented above, I tentatively conclude that the perfective is a floating $L$ tone suffix. Further research on this subject is needed to confirm or disprove this.

This concludes the description of the three L tone suffixes. Next, I introduce the M tone suffixes, beginning with the imperfective.

### 3.1.4 Siamou Mid Tone Imperfective - $\boldsymbol{n}$

The fourth aspectual suffix is the imperfective, $-n$. This suffix forms part of the $M$ tone set, and it consists of one segment: a nasal consonant. ${ }^{86}$ Like the perfective, it does not contain a vowel, which means that imperfective inflected one-syllable verbs are still one syllable. ${ }^{87}$ Like the stative and completive, the imperfective consistently has the same segmental form ( $-n$ ) and the same tone (M).

In (15a), the bare verb is H tone gbál ('cool'). The imperfective of this verb has a HM tone and a nasal consonant in the coda (gbáaln). If the bare verb already ends in a M tone and nasal consonant, as with sayn ('pound') in (15b), the imperfective (saàyn) is difficult to distinguish from the bare verb, although it is orthographically distinct. ${ }^{88}$ In (15c), I show that the imperfective may have irregularities in its segmental form (which is also true for the perfective). See 3.2.2 for more information. The bare verb has the form $g b \varepsilon$ ('drink') while the imperfective is laàn. However, even on irregular verbs, the imperfective still has the word-final $M$ tone and nasal consonant that characterize the imperfective.
15. a. bare verb: gbál
translation: cool
À nun=1̂ gbáal-n ín. tone melody: HM
3SG water=DEF2 cool-IMPF PST
The water was cooling off.
tone melody: H

[^58]b. bare verb: saŋn translation: pound

À jùmlay saày-n.
3SG corn pound-IMPF
S/he is pounding corn.
c. bare verb: gbe
translation: drink
Ń ni bá laà-n. tone melody: M (slightly falling)
tone melody: $\mathrm{M}(\mathrm{L})$
tone melody: M (slightly falling)
tone melody: $\mathrm{M}(\mathrm{L})$

1SG FIN porridge drink-IMPF
I am drinking porridge./I drink porridge

In Table 3.8, I show the form of the imperfective for each tone melody group. In the rightmost column we can see that imperfectives always end in $n$.

Table 3.8 Imperfective Aspect - $n^{89}$

|  | Group | Gloss | Bare Verb (V) | Imperfective (V-n) |
| :---: | :---: | :---: | :---: | :---: |
| a. | H | finish/end | tél | té 1 ln |
| b. | HL | curse | bêl | béceln |
| c. | H! H | fry | gbécl | gbézln |
| d. | M (! H ) | weave | fyel | fyecln |
| e. | M! HL | teach/read | kecln | ke\&ln |
| f. | L | clear/sweep | gbèl | gbeċln |
| g . | M | think/be amazed | bel | bec̀ln |
| h. | M(L) | hit | $\mathrm{nm} \varepsilon^{90}$ | ŋmcèln |

Table 3.9 shows the tones of the forms given in Table 3.8. The rightmost column shows that imperfectives always end in a M tone. Furthermore, imperfectives have one of three possible tone melodies. All verbs beginning with a H tone have an imperfective with a HM tone (Table $3.9 \mathrm{a}-\mathrm{c}$ ). All verbs with the sequence $\mathrm{M}!\mathrm{H}$ have an imperfective with a M!HM tone (Table 3.9d-e) and the remaining verbs have an imperfective with a M tone that falls slightly (Table 3.9f-h).

[^59]Table 3.9 Imperfective Aspect - $n$ Tone

| Tone Melody Group |  | Bare Verb (V) | Imperfective (V-n) |
| :--- | ---: | ---: | ---: |
| a. | H | H | HM |
| b. | HL | HL | HM |
| c. | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}!\mathrm{H}$ | HM |
| d. | $\mathrm{M}(!\mathrm{H})$ | M | M |
| e. | $\mathrm{M}!\mathrm{HL}$ | M | $\mathrm{M}!\mathrm{HL}$ |
| f. | L | L | HM |
| g. | M | M | slightly falling $\mathbf{M}$ |
| h. | $\mathrm{M}(\mathrm{L})$ | M | slightly falling $\mathbf{M}$ |

### 3.1.5 Siamou Mid Tone Prospective Aspect 1 -a

The fifth aspectual suffix is the prospective aspect $1-a$, which is M tone, like the imperfective. It usually surfaces as a $M$ tone, as it does in (16a) with the $M(L)$ verb $l i$ ('go out'). However, with some tone melodies it surfaces as a ! H tone, as it does in (16b) with the H tone verb ku' ('die'). However, this difference is not reflected in the orthography, since both are marked as M tone. In Table 3.10 I show an example for each tone melody group.
16.

| a. | bare verb: translation: | li <br> go out | tone melody: | M(L) |
| :---: | :---: | :---: | :---: | :---: |
|  | À bè | li-a. | tone melody: | M-M |
|  | 3SG MOD | go.out-PRSP1 |  |  |
|  | He will go out. |  |  |  |
|  | French: Il sortira. (C) |  |  |  |
| b. | bare verb: translation: | kú <br> die | tone melody: | H |
|  | À bè | kú-a. | tone melody: | H-! ${ }^{\text {H}}$ |
|  | 3SG MOD | die-PRSP1 |  |  |
|  | He will die. |  |  |  |
|  | French: Il va | mourir. (C) |  |  |

Table 3.10 Prospective $1-a^{91}$

|  | roup | Gloss | Bare Verb (V) | Prospective 1 (V-a) |
| :---: | :---: | :---: | :---: | :---: |
| a. | H | finish/end | tél | tél-a |
| b. | H! H | fry | gbécl | gbécl-a |
| c. | M (! H ) | weave | fyel | fyecl-a |
| d. | HL | curse | bêl | bêl-a |
| e. | M! HL | teach/read | kecln | kecln-a |
| f. | L | clear/sweep | gbèl | gbel-a |
| g. | M | think/be amazed | bel | bel-a |
| h. | M(L) | hit | ๆmع | yme-a |

The tone information for the verbs in Table 3.10 is shown in Table 3.11. The inflected verbs in Table 3.11a-b end in a ! H tone and the remaining verbs end in a M tone. However, the tones of the second syllable of the verbs in Table 3.11b-c are complex (H!H in Table 3.11b and !HM in Table 3.11c).

Table 3.11 Prospective $2-a$ Tone

| Tone Melody Group | Bare Verb (V) | Prospective 1 (V-n) |  |
| :--- | ---: | ---: | ---: |
| a. | H | H | $\mathrm{H}-!\mathrm{H}$ |
| b. | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}-\mathrm{H}!\mathrm{H}$ |
| c. | $\mathrm{M}(!\mathrm{H})$ | M | $\mathrm{M}-!\mathrm{HM}$ |
| d. | HL | HL | $\mathrm{HL}-\mathrm{M}$ |
| e. | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HL}$ | M |
| f. | $\mathrm{HL}-\mathrm{M}$ |  |  |
| g. | L | L | L |
| h. | $\mathrm{M}(\mathrm{L})$ | M | M |

### 3.1.6 Siamou High-Low Tone Prospective Aspect 2 -b $\hat{\varepsilon}$

The final aspectual suffix, the prospective aspect $2-b \hat{\varepsilon}$, belongs to its own class. It has a HL contour tone. When it attaches to a verb, it may surface with a HL contour (17a), a !HL contour (17b), or a L tone (17c).
17.
$\begin{array}{lll}\text { a. bare verb: } & \text { kú } \\ \text { translation: }\end{array}$
À bè kú-bê. tone melody: H-HL
3SG MOD die-PRSP2
He will die

[^60]b. bare verb: fli translation: survive

À bè fli-bê.
3SG MOD survive-PRSP2
It's going to survive.
context: talking about a sick dog.
c. bare verb: wô
translation: fall
À bè wô-bè.
3SG MOD fall-PRSP2
She's going to fall.
tone melody: $\mathrm{M}(!\mathrm{H})$
tone melody: M-!HL
tone melody: HL
tone melody: HL-L
context: talking about a baby standing on a chair
In Table 3.12, I show a set of verbs inflected for prospective aspect 2 . The tone information for the verbs in Table 3.12 is given in Table 3.13.

Table 3.12 Prospective Aspect $2-b \hat{\varepsilon}^{92}$

| Tone Melody Group | Gloss | Bare Verb (V) | Prospective 2 (V-bê) |
| :---: | :---: | :---: | :---: |
| a. H | finish/end | tél | tél-bê |
| b. H! H | fry | gbécl | gbécl-bê |
| c. $\mathrm{M}(\mathrm{L})$ | hit | ŋme | Øme-bê |
| d. $\mathrm{M}(!\mathrm{H})$ | weave | fyel | fyecl-b̂̀ |
| e. L | clear/sweep | gbèl | gbel-bè |
| f. M | think/be amazed | bel | bel-bè |
| g. HL | curse | bêl | bêl-bè |
| h. M! HL | teach/read | kecln | kecln-bè |

In Table 3.13, the prospective aspect 2 has a HL tone. In Table 3.13c-d, it has a !HL tone. (Both HL and !HL are written -bê in Table 3.13a-d). In Table 3.13e-h, it has a L tone. The prospective aspect 2 suffix changes the tone of the verb stem in two instances. In Table 3.13b, H!H verbs become H tone when inflected for prospective aspect 2, and in Table 3.13e, L tone verbs become M tone when inflected for prospective aspect 2.

[^61]Table 3.13 Prospective Aspect 2 - $b \hat{\varepsilon}$ Tone

| Tone Melody Group | Bare Verb (V) | Prospective 2 (V-bê) |  |
| :--- | ---: | ---: | ---: |
| a. | H | H | $\mathrm{H}-\mathrm{HL}$ |
| b. | $\mathrm{H}!\mathrm{H}$ | $\mathbf{H}!\mathrm{H}$ | $\mathbf{H}-\mathbf{H L}$ |
| c. | $\mathrm{M}(\mathrm{L})$ | M | M |
| d.!HL | $\mathrm{M}(!\mathrm{H})$ | M | $\mathrm{M}-!\mathrm{HL}$ |
| e. | L | L | $\mathrm{M}-\mathrm{L}$ |
| f. | M | M | M |
| g. | HL | HL | HL |
| h. | $\mathrm{M}!\mathrm{HL}$ | M | HL |

Since the prospective aspect 2 suffix $-b \hat{\varepsilon}$ sometimes surfaces as $L$ tone, it may be tempting to class it with the set of $L$ tone aspectual suffixes. In 3.1.7, however, it is not part of that class.

To summarize, the prospective aspect 2 has the form $-b \hat{\varepsilon}$, which may surface as HL tone, as !HL tone or as L tone. Sometimes it affects the tone of the bare verb. In particular, it causes a $L$ tone verb to surface as $M$ tone. In this way, it resembles the $M$ tone class of inflectional forms (imperfective and prospective aspect 1).

I have now introduced and described all six of Siamou's aspectual suffixes. In the next section, I show that they fit into three inflectional classes: low tone, mid tone, and high-low tone.

### 3.1.7 Three Tonal Inflectional Classes: Low Tone, Mid Tone and High-Low Tone

The first inflectional class, which is L tone, includes the perfective, the completive and the stative. Table 3.14 below shows the tone melodies for each of these suffixes in order to make comparisons between them. First of all, notice that the tones of the completive and stative are identical. These two aspects also end in a L tone for every tone melody group. The perfective, on the other hand, ends with a $L$ tone most of the time, but not for the $H, M$, and $M(!H)$ groups. There are a number of possible reasons for this difference. First, the perfective is not syllabic, which means that its $L$ tone competes to dock on the segmental form of the verb itself. It looks like sometimes the $L$ tone wins and sometimes the tone of the verb wins. In an optimality theory account, this might be explained with faithfulness constraints. (See Archangeli (1997), among others.) If faithfulness to the tone of the verb has priority over faithfulness to the tone of the suffix, this would prevent the tone of the suffix from being realized. This type of analysis (discussed briefly in 3.1.3) has yet to be worked out.

Table 3.14 L Tone Inflectional Class

| Tone Melody <br> Group | Bare Verb <br> (V) | Perfective <br> (V-L) | Completive <br> (V-è) | Stative <br> (V-nèn) |  |
| :--- | ---: | :--- | :--- | :--- | :--- |
| a. | H | H | H | $\mathrm{H}-\mathrm{L}$ | $\mathrm{H}-\mathrm{L}$ |
| b. | M | M | M | $\mathrm{M}-\mathrm{L}$ | $\mathrm{M}-\mathrm{L}$ |
| c. | $\mathrm{M}(!\mathrm{H})$ | M | M | $\mathrm{M}-\mathrm{L}$ | M |
| d. | $\mathrm{M}(\mathrm{L})$ | M | L | $\mathrm{L}-\mathrm{L}$ | L |
| e. | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}!\mathrm{H}$ | HL | $\mathrm{H}-\mathrm{L}$ | $\mathrm{H}-\mathrm{L}$ |
| f. | L | L | L | $\mathrm{L}-\mathrm{L}$ | $\mathrm{L}-\mathrm{L}$ |
| g. | HL | HL | HL | $\mathrm{H}-\mathrm{L}$ | H |
| h. | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HM}-\mathrm{L}$ | M |

One might ask why I do not put the perfective in its own category, since it clearly differs from the other two. I have three reasons for this. The first is that the alternative would be to say that the perfective is unmarked. This is undesirable because then we would have to explain how the L tone shows up for the $\mathrm{M}(\mathrm{L})$ and $\mathrm{H}!\mathrm{H}$ groups. It is easier to say that the perfective is L tone but sometimes does not surface (perhaps because of the aforementioned faithfulness constraint) than to say that perfective is unmarked, but inexplicably becomes L tone in some cases. The second reason is that the $L$ tone class of aspectual suffixes all cause the tone of $M(L)$ verbs to become $L$. The other three non $L$ tone aspectual suffixes do not do this. The third reason has to do with semantics: the perfective, completive, and stative, in addition to being L tone, they all have something to do with past events, although they are not past tense.

The prospective aspect 2 is the only aspectual suffix with a HL tone melody. Since it ends in a L tone, it resembles the L tone class in some ways. In Table 3.15, I compare the prospective aspect 2 suffix to the L tone class to show that they are distinct.

Table 3.15 L Tone Inflectional Class versus HL Tone Inflectional Class

| Tone <br> Melody Group | $\begin{aligned} & \text { Bare Verb } \\ & \text { (V) } \end{aligned}$ | Perfective $(\mathrm{V}-L)$ | Completive $(\mathrm{V}-\stackrel{e}{)}$ | Stative (V-nèn) | Prospective 2 (V-b̂̂) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| a. $\quad \mathrm{H}$ | H | H | H-L | H-L | H-HL |
| b. L | L | L | L-L | L-L | M-L |
| c. M | M | M | M-L | M-L | M-L |
| d. $\quad \mathrm{M}(\mathrm{L})$ | M | L | L-L | L-L | M-! HL |
| e. $\quad \mathrm{M}(!\mathrm{H})$ | M | M | M-L | M-L | M-! HL |
| f. HL | HL | HL | H-L | H-L | HL-L |
| g. H! H | H! H | HL | H-L | H-L | H-HL |
| h. M!HL | M!HL | M! HL | M!HM-L | M!HM-L | M!HL-L |

There are four reasons for putting the prospective aspect $2-b \hat{\varepsilon}$ in its own class: first of all, its tone melodies are very different from the tone melodies of the L tone class of suffixes. In fact, the only tone melody group where they are the same is the M group, which has a M-L tone when inflected for prospective aspect 2 . Secondly, the $M(L)$ tone melody group is realized as $M$ tone when uninflected and when inflected for prospective aspect 2 , but when it is inflected with one of the $L$ tone suffixes, the tone of the verb stem becomes L. Thirdly, the $L$ tone melody group is realized as $L$ tone when uninflected and when inflected with one of the $L$ tone suffixes, but when it is inflected for prospective aspect 2, it has a M tone. The fourth reason has to do with semantics. I observed above that the L tone aspects deal with events that are in some ways 'past' (although not past tense). The prospective aspect $2-b \hat{\varepsilon}$ certainly does not fit into that category.

Next I look at the M tone suffixes, which includes the imperfective $-n$ and prospective aspect $1-a$. Table 3.16 below compares the tones of these two inflectional forms with each other.

Table 3.16 M Tone Inflectional Class

| Tone Melody Group | Bare Verb <br> (V) | Imperfective <br> (V-n) | Prospective 1 <br> (V-a) |  |
| :--- | ---: | :--- | :--- | ---: |
| a. | H | H | HM | $\mathrm{H}-!\mathrm{H}$ |
| b. | $\mathrm{H}!\mathrm{H}$ | $\mathrm{H}!\mathrm{H}$ | HM | $\mathrm{H}-\mathrm{H}!\mathrm{H}$ |
| c. | HL | HL | HM | $\mathrm{HL}-\mathbf{M}$ |
| d. | L | L | M | $\mathrm{M}-\mathbf{M}$ |
| e. | M | M | M | $\mathrm{M}-\mathbf{M}$ |
| f. | $\mathrm{M}(\mathrm{L})$ | M | M | $\mathrm{M}-M$ |
| g. | $\mathrm{M}(!\mathrm{H})$ | M | $\mathrm{M}!\mathrm{HM}$ | $\mathrm{M}-!\mathrm{HM}$ |
| h. | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HL}$ | $\mathrm{M}!\mathrm{HM}$ | $\mathrm{M}!\mathrm{HL}-\mathbf{M}$ |

Although both of these inflections are $M$ tone, the prospective aspect 1 suffix increases the syllable count of the inflected verb while the imperfective does not. This may account for some of the observed differences. For all eight tone melodies, the imperfective consistently ends in a M tone. If the bare verb contains a H tone, this is retained in the imperfective, so H tone verbs, $\mathrm{H}!\mathrm{H}$ tone verbs, and HL tone verbs all become HM in the imperfective (Table 3.16a-c). L, M and $\mathrm{M}(\mathrm{L})$ verbs are all M tone in the imperfective (Table 3.16d-f). $\mathrm{M}(!\mathrm{H})$ tone verbs and $\mathrm{M}!\mathrm{HL}$ tone verbs both become M!HM. Notice that there are no L tones anywhere in any of the imperfective forms. HL verbs become HM (Table 3.16c), L verbs become M (Table 3.16d), and M!HL verbs become M!HM (Table 3.16h).

As for the prospective aspect 1 inflection, these all end in a M tone, unless the bare verb ends in an overt high tone (either H or !H), as in Table 3.16a-b. In those two cases, the final tone is $!\mathrm{H}$. Contour tones are retained more than they are in the imperfective: HL tone verbs are HLM in the prospective aspect 1 , and M!HL tone verbs are M!HL-M. This may be because, as stated above, the prospective aspect 1 forms have one more syllable than the imperfective forms.

The prospective aspect 1 resembles the imperfective in the following ways: $L$ tone verbs become $M$ tone when inflected with prospective aspect $1, M$ and $M(L)$ verbs remain $M$ tone, and $\mathrm{M}(!\mathrm{H})$ verbs become $\mathrm{M}-!\mathrm{HM}$.

Semantically, the imperfective and the prospective aspect 1 are both aspectual morphemes that do not convey that the event time precedes the reference time. In Table 3.15 above I showed that it does not make sense to class the prospective aspect $2-b \hat{\varepsilon}$ with the L tone category of aspectual suffixes. It also does not fit with the $M$ tone class because it is not $M$ tone. However, it does have at least one similarity with M tone verbs. In Table 3.17, I compare the tones of the two M tone inflections with the prospective aspect 2 inflection. The main thing I wish to point out is that $L$ tone verbs (Table 3.17d) become $M$ tone in the imperfective, prospective aspect 1 and prospective aspect 2 . The prospective aspect 2 form also resembles the prospective aspect 1 form in that they are the only inflectional forms that have a ! H in the suffix.

Table 3.17 M Tone Inflectional Class versus Prospective Aspect $2-b \hat{\varepsilon}$

| Tone Melody Group |  | Bare Verb $(\mathrm{V})$ | Imperfective $(V-n)$ | Prospective 1 $(\mathrm{V}-a)$ | Prospective 2 (V-b̂̂) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| a. | H | H | HM | H-! ${ }^{\text {H }}$ | H-HL |
| b. | H! H | H! ${ }^{\text {a }}$ | HM | H-H! ${ }^{\text {H }}$ | H-HL |
| c. | HL | HL | HM | HL-M | HL-L |
| d. | L | L | M | M-M | M-L |
| e. | M | M | M | M-M | M-L |
| f. | M(L) | M | M | M-M | M-! HL |
| g. | M (! H) | M | M!HM | M-! HM | M-! HL |
| h. | M! HL | M!HL | M! HM | M!HL-M | M!HL-L |

In 3.1, I have discussed the form of Siamou's six aspectual suffixes. I have shown that the suffixes fall into either a L tone class, a $M$ tone class, or a HL tone class. In the next section I look at the morpho-syntax of these forms.

### 3.2 The Headedness Debate: VO versus OV

This section focuses on Siamou syntax, and in particular on head-complement ordering. I approach this topic from two angles. In 3.2.1, I look at Siamou through a particular theory of syntax, called anti-symmetry, which proposes that all languages have the same underlying structure in which heads always precede their complements (Kayne 1994). In 3.2.2 I look at Siamou as a member of the Kru language family, which often has (surface) complement-head ordering (Koopman 1984). In anti-symmetry theory, Siamou is assumed to be underlyingly headinitial, like all other languages. As a Kru language, however, and disregarding anti-symmetry, Siamou is predominantly head-final, which is the structure I adopt.

### 3.2.1 Siamou and Kayne's Conjecture

This section has three subparts. Section 3.2.1.1 briefly explains the theory of anti-symmetry. Section 3.2.1.2 shows that Siamou has consistent surface SOV (i.e. complement-head) word order. In anti-symmetry theory, Siamou's SOV word order must be derived by raising. In this case, we might expect to find other instances of raising in Siamou syntax. I look for evidence this in 3.2.1.3, with mixed results. Finally, 3.2.1.4 presents two possible structures of the Siamou aspect phrase, and shows which one Kayne's (1994) theory predicts to be correct.

### 3.2.1.1 Kayne (1994) Predicts Consistent VO

Kayne's (1994) theory of anti-symmetry predicts that phrases universally have the order headcomplement, as shown in (18a). A complement-head ordering that does not involve movement is ungrammatical (18b). Instead, a structure in which a complement precedes its head must be derived (18c). ${ }^{93}$
18. a.

b. *


[^62]c.


A verb (V) and its object (O) are one kind of head-complement pair. In languages with VO word order, such as English, the head (V) precedes its complement (O) in surface structure. For example, in (19a), the verb eat precedes its object food. OV order is not possible (19b). The verb-object pair in (19a) has the structure in (20). This conforms to the permitted structure from (18a) because the head precedes the complement.
19. a. I eat food.
(SVO)
b. * I food eat.
(*SOV)
20.


Languages with OV word order, such as Siamou, are not as simple. In Siamou sentences, VO word order is not permitted (21ba). Instead, verbs follow their objects (21b), which is complement-head ordering.
21.
b. $\quad$ N 1SG FIN eat.PRFV
le.
(*SVO)
,
a. Ń (ni) le
dì.
(SOV)
1SG FIN food
eat.PRFV I eat food.

According to Kayne (1994), OV word order is always derived. That is to say, (21a) cannot have the structure in (22) because this has the order complement-head, which is not allowed.
22.


Instead, Kayne (1994) argues that OV word order is derived from an underlying VO word order, which means that (21a) has the structure shown in (23). ${ }^{94}$ The object (le) moves up from the VP into a higher phrase (which I call XP for now). The original position of $l e$ is marked by a trace $(t)$. This is why Kayne's (1994) theory is called anti-symmetry: the OV structure in (23) is not symmetrical with the VO structure in (20).
23.


### 3.2.1.2 Siamou Is Consistently Head-Final

In Siamou, sentences always have surface SOV word order, as shown in (21) above. In fact, all lexical heads in Siamou follow their complements. This is true for verb phrases (24a), noun phrases (24b) and postpositional phrases (24c). ${ }^{95}$
24. a. DP V [le] [di]
food eat eat food

[^63]| b. | DP | N | [クméen 1 PL our region | $\begin{aligned} & \text { kìy } \begin{array}{l} \text { gnn }=1 ̂] \\ \text { region= }=\text { DEF2 } \\ \text { ing } \end{array} \end{aligned}$ | [gmelon] king |
| :---: | :---: | :---: | :---: | :---: | :---: |
| c. | DP | P | [mún] 1SG.EMPH with me | [wóse] with |  |

Functional heads are not as consistent relative to the head-initial versus head-final contrast. They may be either head-final, like the aspectual suffix in (25a) and the question particle in (25b), or head-initial, like the quotative particle in (25c).
25.
$\begin{array}{llllll}\text { a. } \quad \text { VP } & \text { ASP } & \begin{array}{l}\text { À }\end{array} \quad \text { ri } & {[\text { le }} & \text { di]-[nغ̀n] } \\ & & 3 \text { SG } & \text { FIN } & \text { food } & \text { eat.STAT }\end{array}$
French: Il a mangé de la nourriture. (C)
$\begin{array}{lllll}\mathrm{b} . & \mathrm{CP} & \mathrm{Q} & {\left[\begin{array}{ll}\mathrm{A} & \text { dénno }]\end{array}\right.} & {[\mathrm{a} ?]} \\ & & 3 \mathrm{SG} & \text { go.PRFV? } & \mathrm{Q}\end{array}$
Did he go?
c. QUOT CP Yì à ló [dé] [Kanada yé Cl l tèn-nèn] 3pL 3SG say QUOT Canada cold be-STAT They say that it's cold in Canada.

Based on the data in (24-25), the head-final order seems to be the most prevalent surface order in Siamou.

Cross-linguistically, there are certain properties that are more commonly associated with SOV word order and other properties that are more commonly associated with SVO word order. Siamou has mixed word order properties. For example, in Siamou enclitics and suffixes are much more predominant than proclitics and prefixes. Enclitics are used to mark plurality (26a) and definiteness (26b), and a suffix is used to mark aspect (26c). This is common for SOV languages (Greenberg 1966, Marchese 1986, Comrie 1989, Croft 2003).
26. a. lu=i
wife=PL
wives
b. à bisháayn=î

DEF1 child=DEF2
the child
c. dì-jèn
eat-STAT
have eaten

In Siamou, modifiers usually follow their heads: adjectives follow the noun (27a), and adverbs follow the verb (27b). This is a property of SVO languages (Greenberg 1966, Marchese 1986).
27. a. ló sós
house big big house
b. Ń ni múkal leè-n gbângbâr. 1SG FIN tô eat-IMPF always I always eat tô (corn porridge).

To summarize, Siamou has some properties consistent with SOV languages, including SOV word order, complement-head ordering of lexical heads and some functional heads, and a preference for suffixes over prefixes. It also has a few properties consistent with SVO languages, including head-complement ordering of some functional heads, and modifiers that follow their heads. See 3.2.2.1 for more discussion of SOV and SVO properties.

Kayne (1994) would lead us to predict that all of the above structures that are head-initial are un-derived, and all the ones that are head-final are derived by leftward movement. In the next section, I look for independent evidence of leftward movement in Siamou.

### 3.2.1.3 Is There Evidence for Leftward Movement in Siamou?

This section explores three situations where movement commonly occurs cross-linguistically: wh-questions, relative clauses and the formation of passives. (See Adger 2003.) Although this is not the same type of movement as the verb-raising in anti-symmetry, we might expect that if a language uses movement as a common strategy, it would be more likely to use movement to derive its surface SOV word order. It turns out that Siamou does not use movement as a strategy in wh-questions (3.2.1.3.1) or relative clauses (3.2.1.3.2), but it does in passives (3.2.1.3.3).

### 3.2.1.3.1 Wh-movement in Siamou? No

In many languages, wh-words raise to a higher position, leaving behind a trace (28a). Siamou, however, has wh-words in situ (28b). Raising is ungrammatical (28c). Instead, an utterance like (28c), without the trace, has a different interpretation, since the subject and object have inverted.
28. a. What $_{t}$ did you eat $t$ ?
b. Àkun ni jónmón di? 3SG.EMPH FIN what eat.PRFV What did he eat?
French: Il a mangé quoi? (L)
c. * jónmón ni àkun $t$ dì. what FIN 3SG.EMPH eat.PRFV intended reading: What did he eat?
d. jónmón ni àkun dì. what FIN 3SG.EMPH eat.PRFV intended reading (not available): What did he eat? actual reading: What ate him? (He was eaten by what?) French: Il a été mangé par quoi? (C)

### 3.2.1.3.2 Movement in Siamou Relative Clauses? No

In many languages, heads of relative clauses raise into the matrix clause, also leaving behind a trace (29a) (Tallerman 1998). In Siamou, the head does not raise, but is marked by a relative pronoun mип (29b). Raising is ungrammatical (29c). Instead, attempting to raise the head changes it from object to subject (29d). These structures resemble internally headed relative clauses. However, they differ in one key respect: the head of the relative clause is co-indexed with an argument of the matrix clause rather than being an argument of the matrix clause (Culy 1990). Culy (1990) looks at relative clauses in Bambara, which have the same structure as Siamou (Toews 2007), and argues that they are actually a different type of relative clause which he calls co-relatives.
29. a. The cat that Lillian brought back $t$ is small.
b. Yekpéŋln n' à jònkwônn=î mun gbòn be, Lillian FIN DEF1 cat=DEF2 REL take.PRFV come à ri dwan.
3SG FIN small
The cat that Lillian brought back is small.
French: Le chat que Yekpaŋlé a emmené est petit. (C)
c. *[À̀ jònkwônn=î $]_{t}$ mun Yekpéyln $t$ gbòn $\mathrm{b} \varepsilon$, DEF1 cat=DEF2 REL Lillian take.PRFV come
à ri dwan.
3SG FIN small
intended reading: The cat that Lillian brought back is small.
d. À jònkwônn=î mun Yekpecyln gbòn be,

DEF1 cat=DEF2 REL Lillian take.PRFV come
à ri dwan.
3SG FIN small
The cat that brought back Lillian is small.
French: Le chat qui a emmené Yekpaŋlé est petit. (C)

### 3.2.1.3.3 Movement in Siamou Passives? Yes

A final process that usually involves raising is passivation. The object of the verb raises to subject position, along with other morphological changes (Tallerman 1998). For example, in English, the passive is signaled by the verb be and the past participle of the verb (30).
30. a. Active: I ate food.
b. Passive: $\quad \mathrm{Food}_{t}$ was eaten $t$.

In Siamou, however, the passive is not morphologically marked in any way. Rather, if a transitive verb has no object, it is interpreted as passive. An active Siamou sentence is given in (31a) and its corresponding passive in (31b). The object le ('food') from (31a) is raised to subject position in (31b).
31. a. Active: À ri le dì-nèn.

3SG FIN food eat.STAT
He ate (food).
French: Il a mangé de la nourriture. (C)
b. 'Passive' $\mathbf{L e}_{t}$ ri $t \quad$ dì-nèn. food FIN eat-STAT
Food was eaten.
French: Une nourriture a été mangé. (C)

### 3.2.1.4 The Structure of Aspect in Siamou Following Anti-Symmetry (Kayne 1994)

For Kayne (1994), anything that looks like SOV is really just SVO in disguise. Since Siamou has many properties of SOV languages, including, of course, SOV word order, Kayne (1994) predicts that these structures must all be derived by leftward movement (even though leftward movement in Siamou is not very pervasive). If we adopt Kayne's (1994) analysis, this has implications for the structure of the Siamou aspect phrase, as I explain below.

In Siamou, aspect follows its VP complement as a verbal suffix (VP-Asp), as shown in (32). The aspect head -nèn (STAT) is given in brackets, preceded by the verb phrase (le di). The rest of the clause that is not part of the aspect phrase is in parentheses.
$\begin{array}{lllllll}\text { 32. VP } & \text { Asp } & \begin{array}{l}\text { À } \\ \text { 3SG }\end{array} & \text { ri } & \text { FIN } & \text { le } & \text { di]-[nèn]. } \\ & & \text { food } & \text { eat-STAT }\end{array}$
He ate (food).
French: Il a mangé de la nourriture. (C)
There are two main ways to derive this: for Kayne (1994), it must be the case that Siamou has an underlying head-initial (VO) word order. In this case the aspect head precedes the verb phrase (Asp VP) and the verb has to raise and adjoin to the aspect head in order to derive the surface (VP Asp) order, as shown in (33a). The object must also raise to a higher position (called Spec AgrOP) in order to derive the surface (OV Asp) ordering (see Pollock 1989 and Roberts 1997).

The second possibility, which Kayne (1994) would reject, is that Siamou has an underlying head-final (OV) word order. In this case, the aspect head follows the verb and can attach to it via right-alignment (V Asp). This is shown in (33b).
33. a.

b.


The correctness of Kayne's (1994) theory of anti-symmetry is not the main concern of this dissertation. In the next section, I set aside anti-symmetry and look at head ordering and the aspect phrase from the perspective of the Kru language family. From this perspective, the structure in (33b) looks more tenable, and it is the one I adopt.

### 3.2.2 Siamou and Marchese's Generalization about Kru

The purpose of this section is to compare and contrast Marchese's (1986) generalizations about Kru syntax (3.2.2.1) with what we find in Siamou (3.2.2.2), and to summarize what this says about the structure of aspect in Siamou (3.2.2.3).

### 3.2.2.1 Kru Has Surface VO and OV Word Order

Kru languages are predominantly SVO (34a), except when there is an auxiliary, in which case the order is S (Aux) OV (34b) (Marchese 1986:19-23).
34. a. language: Wobé (from Marchese 1986:21)

| $\bar{\jmath}$ | pō- $\bar{\varepsilon}$ | gbū. |
| :--- | :--- | :--- |
| he | build-DEC | house |
| S | V | o | He built a house.

b. language: Dewoin (from Marchese 1986:22)

| $\bar{o}$ | nà | sāỳ̀ | pī. |
| :--- | :--- | :--- | :--- |
| he | PERF | meat | cook |
| S | AUX | O | V | He has cooked meat.

Koopman (1984) argues that this alternation is a verb-second effect similar to what occurs in many Germanic languages. In this analysis, the underlying word order in Kru is SOV. If an auxiliary occurs in the inflectional phrase (INFL), that position is filled, and the word order remains $S$ (Aux) OV. If there is no auxiliary, the verb raises to INFL resulting in a derived SVO word order.

In many Kru languages there is a contrast between auxiliaries and particles (Marchese 1986). (See 3.4.4.) Auxiliaries, as stated above, occur in clauses with an OV word order while particles occur in clauses with a VO word order. For example, the auxiliary se (NEG.AUX) in (35) changes the word order from SVO in (35a) to S (Aux) OV in (35b).
35. language: Dewoin (from Marchese 1986:168)
a. $\quad \begin{aligned} & 0 \\ & \\ & \text { he }\end{aligned}$
he He cooked meat
$\begin{array}{lllll}\text { b. } & \boldsymbol{0} & \text { se } & \text { saỳ̀ } & \text { pi. }\end{array}$
he NEG.AUX
He didn't cook meat
$\begin{array}{ll}\text { pi } & \text { saỳ̀. } \\ \text { cook } & \text { meat }\end{array}$
affirmative
negative (with AUX)

This is not what happens with the negative particle ní. In (36a), the affirmative clause has SVO word order, and the negative clause in (36b) has $S$ (Part) VO word order. There is no change in the ordering of the verb and the object.
36. language: Dewoin (from Marchese 1986:168)
a. $\quad$-○
he-IMPF He smokes.
$\begin{array}{lll}\text { na } & \text { tawa. } & \text { affirmative } \\ \text { drink } & \text { tobacco } & \end{array}$ ,
$\begin{array}{llllll}\text { b. } & \text { o-0 } & \text { ní } & \text { na } & \text { tawa. } & \text { negative (with PART) } \\ & \text { he-IMPF } & \text { NEG.PART } & \text { drink } & \text { tobacco } & \\ & \text { He doesn't smoke. } & & & \end{array}$

Kru verb phrases have some characteristics of SOV languages, and some characteristics of SVO languages (Marchese 1986). SOV characteristics include the predominance of suffixes in both the nominal and verbal domains. First, plurals are marked with a suffix (37a), and so is imperfective aspect (37b).
37. a. language: Tepo (from Marchese 1986:16)

N -PL
pu-i
gun-PL
guns
b. language: Lozoua-Dida (from Marchese 1986:20)
$\quad \quad$ V-IMPF
o $\quad$ ci-e
he come-IMPF
He's coming.

Second, possessives precede the noun they modify (38).
38. language: Godié (from Marchese 1986:17)

POSS N
ná bùtū
my house
my house
Third, Kru languages have postpositions rather than prepositions (39).
39. language: Vata (from Marchese 1986:18)

```
N P
kolá mlé
forest in
in the forest
```

Fourth, Kru languages have OV word order in compounds (40).
40. language Aīzi (from Marchese 1986:19)

```
O V
koso -go -nyo
chicken-raise -person
chicken farmer
```

Finally, Kru languages have a sentence-final polar question particle or suffix (41).
41. language: Neyo (from Marchese 1986:22) ${ }^{96}$

| ò | ko | dè | $\mathbf{a}$ ? |
| :--- | :--- | :--- | :--- |
| he | is | there | Q |

Is he there?
SVO characteristics of Kru languages include modifiers that follow their head. In (42a), the head noun bitì ('houses') is followed by three modifiers. In (42b), the adverb kp $\bar{c} k p \bar{\varepsilon}$ ('frequently') follows the verb nyu ('do').

[^64]42. a. language: Godié (from Marchese 1986:19)

| bitì kídì nī só |  |
| :--- | :--- | :--- |
| houses big these | two |
| these two big houses |  |

b. language: Bassa (from Marchese 1986:22)

$$
\begin{array}{lll}
0 & \text { se- }-\varepsilon \text { nyu } & \text { kp } \bar{k} k p \bar{\varepsilon} . \\
\text { he } & \text { NEG-it do } & \text { frequently } \\
\text { He doesn't do it frequently. }
\end{array}
$$

Another SVO characteristic is that sentences with copulas have the order subject-NP Copula predicate-NP, as in (43).
43. language: Godié (from Marchese 1986:21)

| $\mathrm{NP}_{\text {SUBJ }}$ | COP | NP $_{\text {PRED }}$ |
| :--- | :--- | :--- |
| $\overline{\mathrm{j}}$ | gùlù | mōkōsíy $\overline{1}$ |
| he | be | Mossi.child |
| He is a | Mossi. |  |

Finally, auxiliary verbs precede the main verb (44).
44. language: Godié (from Marchese 1986:22)

| S | AUX | V |
| :--- | :--- | :--- |
| $\bar{\jmath}$ | $\mathrm{y} \overline{1}$ | mī |
| he | FUT | go |

He will leave.
Marchese (1986) argues that even though SVO is the predominant word order in Kru, there are more SOV characteristics than SVO characteristics. She argues that this is the result of a proto SOV word order, which reflects the fact that Kru is part of the Niger-Congo language family (Marchese 1986:23). This is supported by Koopman's (1984) analysis of verb-raising as described above.

### 3.2.2.2 Siamou Only Has Surface OV

The crucial difference between Siamou and other Kru languages is that Siamou has exclusive SOV word order (45). There is no alternation between SVO and SOV as there is in other Kru languages.
45.
$\begin{array}{llll}\text { a. } & \text { Ń } & \text { (ni) } & \text { le } \\ & \text { 1SG FIN } & \text { food } \\ & \text { I eat food. } & \end{array}$
dì.
(SOV)
eat.PRFV
b. *ŃN (ni) dì
1SG FIN eat.PRFV
le.
(*SVO)

Unlike the general Kru pattern, Siamou makes no distinction between particles and auxiliaries:
the word order is consistently SOV. However, most clauses have some kind of particle, often ri, in second position. Perhaps further study will reveal that these particles are actually auxiliaries similar to those in other Kru languages, and that they occur in all clauses, even though they may not always be overt. This would mean that the INFL position is always filled and there is never any cause for a change in word order because the verb never has to raise.

Section 3.2.1.2 discussed some SOV and SVO characteristics of Siamou as it related to anti-symmetry. Here I look at some of these characteristics again, making a direct comparison with the examples for Kru in 3.2.2.1.

First I look at SOV characteristics. In Siamou enclitics and suffixes are predominant: plurals are marked with an enclitic (46), and stative aspect is marked with a suffix (46b).
46. a. $\quad \mathrm{u}=\mathbf{i}$

$$
\begin{aligned}
& \text { wife=PL } \\
& \text { wives }
\end{aligned}
$$

b. dì-jı̀n
eat-STAT
have eaten
Second, possessives precede the noun they modify (47).
47. mún to $=\hat{\jmath}$

1SG.EMPH father=DEF2
my father
Third, Siamou has postpositions rather than prepositions (48).
48. mún wóse

1SG.EMPH with with me

Fourth, Siamou has OV word order in compounds (49).

```
49. o v (Siamou Dictionary (Thiessen et al. n.d))
    wá-hlen-ron
    cloth-sew-owner
    tailor
```

Finally, Siamou has a sentence-final polar question particle (50).
50. À dénno a?

3SG go.PRFV? Q
Did he go?
The examples above show that Siamou has the same SOV characteristics as other Kru languages. In addition, unlike the common Kru pattern, Siamou has consistent SOV word order.

Siamou also has SVO characteristics similar to other Kru languages. This includes modifiers that follow their head. In (51a), the head noun $l 0$ ('house') is followed by the adjective só ('big'). In (51b), the adverb gbângbâr ('always') follows the verb leè-n ('eat-IMPF').
51. a. ló sýs house big big house
b. Ń ni múkal leè-n gbângbâr. 1SG FIN tô eat-IMPF
always I always eat tô (corn porridge).

Siamou does not have auxiliaries in the same way that other Kru languages do. However, the particles in Siamou pattern in a way that is similar to Kru auxiliaries in that they also precede the main verb (52).
52. a. Ń bè don-na.

1SG MOD go-PRSP1
I will go.
Siamou differs from other Kru languages in that sentences with copulas do not have the order subject-NP Copula predicate-NP, but rather subject-NP Particle predicate-NP Copula (53).
53. À mél=î kwòy. (Siamou Dictionary (Thiessen et al. n.d)) DEF1 woman=DEF2 give.birth.PRFV

| $\mathrm{NP}_{\text {SUBJ }}$ |  | PART | NP $_{\text {PRED }}$ | COP |
| :--- | :--- | :--- | :--- | ---: |
| $[\AA$ | dye-ê $]$ | $[\mathrm{ki}]$ | $[j \varepsilon n-$ bisháagn $][0]$. |  |
| DEF1 | child=DEF2 | NFP | man-child | COP |

The woman gave birth. Her child is a boy.
French: La femme a accouché. Son enfant est un garçon.

### 3.2.2.3 The Structure of Aspect in Siamou Following Kru (Koopman 1984, Marchese 1986)

It appears that Siamou is even more strongly SOV than other Kru languages. Not only does it have exclusive SOV word order, it also does not have some SVO characteristics that the other Kru languages have. If Kru is underlyingly SOV, as argued by Koopman (1984) and Marchese (1986), then Siamou would certainly be underlyingly SOV. According to this argumentation, the best representation of aspect is not (54a), as Kayne's (1994) theory of anti-symmetry would require, but (54b) in which the verb phrase is head final, and aspect adjoins to the right edge of the verb phrase. In this case, no movement is required because this is exactly the surface order.
54.

b.


### 3.3 Aspect and the Verbal Spine

This section focuses on the internal structure of the aspect phrase. There is cross-linguistic evidence that the aspect phrase is split into at least two levels (3.3.1). The Siamou data is consistent with this idea (3.3.2). I propose the following syntactic structure for the Siamou aspect phrase: a lower head containing the perfective and the imperfective and a higher head containing the stative, completive, prospective aspect 1, prospective aspect 2, as shown in (55).
55.


### 3.3.1 Siamou and Prolific Domains

Phrase structure is made up a number of domains: a verb phrase (VP), an inflectional phrase (IP), and a complementizer phrase (CP) (Chomsky 1986, Rizzi 1997) (56).
56.


The VP is the lexical layer, which includes the verb. The IP is a functional layer and contains things like tense, aspect, and agreement. The CP is a higher level functional head that includes complementizers, relative pronouns, question markers as well as topicalized and focused elements of a sentence (Rizzi 1997).

Various authors have proposed that each of these levels (CP, IP, and VP), which Grohmann (2003) calls prolific domains, can be more complex than just one phrase. For example, Larson (1988) proposed that the VP be split into various levels to account for ditransitive verbs, Pollock (1989) proposed that the IP is made of up a tense phrase, a negation
phrase, and an agreement phrase, ${ }^{97}$ and Rizzi (1997) proposed that the CP is made up of a force phrase, a topic phrase, a focus phrase and a finiteness phrase.

Then, to take it one step further, a more fine-grained structure has been proposed for the aspect phrase, a sub-part of the IP, e.g., Tenny (2000).) Aspect is commonly taken to be made up of two main parts: lexical aspect and grammatical aspect (Smith 1997). Lexical aspect is a property of predicates, a part of the VP. Grammatical aspect is part of the IP.

Liao (2005) proposes that in addition to the split between lexical and grammatical aspect, grammatical aspect can be split into two kinds, which he calls viewpoint aspect and temporal aspect. Viewpoint aspect includes perfective, imperfective, progressive and habitual aspects. Temporal aspect includes perfect and prospective aspects (Table 3.18). ${ }^{98}$

Table 3.18 Three Levels of Aspect ${ }^{99}$

| Type of Aspect | Includes |
| :--- | :--- |
| Lexical Aspect | stative, accomplishment, achievement, activity |
| Viewpoint Aspect | perfective, imperfective, progressive, habitual |
| Temporal Aspect | perfect, prospective |

This split reflects an intuition that the perfect and prospective are somehow different than perfective and imperfective (Comrie 1976). Descriptively, temporal aspect has to do with situations in which the reference time and the event time do not overlap while viewpoint aspect has to do with situations in which the reference time and the event time do overlap. See chapter 4, especially 4.2-4.3, for more information about this.

The key point of this discussion is that there is evidence from the literature for a more fine-grained structure of the aspect phrase. Therefore, the structure proposed for Siamou in (55), with the perfective and imperfective in a lower aspectual phrase than the other aspects, is not in any way unusual. In Siamou, there are two morphological properties of the perfective and imperfective that distinguish them from the other aspects, and are consistent with the independently motivated structure in (55). This is discussed in 3.3.2.

[^65]
### 3.3.2 Siamou Has Two Positions for Aspect

In Siamou, all aspectual morphemes are verbal suffixes. However, if we pay attention to the split between viewpoint aspect and temporal aspect, as described by Liao (2005), it is apparent that Siamou distinguishes between these categories morphologically. The perfective and imperfective (viewpoint aspect) differ from the stative, completive ${ }^{100}$, and prospective aspects (temporal aspect) in two key ways: they do not have a vowel nucleus (3.3.2.1), and they have morphologically irregular forms (3.3.2.2). This supports the independently motivated claim that there is a two-way split in the aspect phrase. This split would lead us to expect aspectual stacking. However, Siamou does not allow aspect stacking of any kind on the verb, as I show in 3.3.2.3. There may nevertheless exist a different kind of aspect stacking involving an auxiliary verb (3.3.2.4).

### 3.3.2.1 The Argument from Segmental Defectiveness

The perfective and imperfective are the only two aspectual morphemes that are not syllabic. The stative, completive, prospective aspect 2 and prospective aspect 1 suffixes all contain a vowel, but the perfective suffix is entirely suprasegmental, and the imperfective contains only one segment: a nasal. Verbs inflected for perfective or imperfective aspect have the same syllable count as their uninflected form, while verbs inflected for the other aspects have their syllable count increased by one. This phonological difference is a likely cause for some of the tone pattern variations seen in 3.1.7. The suffixes are listed in Table 3.19.

Table 3.19 Siamou Aspectual Suffixes

| Aspect | Form | Segmental Form |
| :--- | :--- | ---: |
| a. perfective | - L | - |
| b. imperfective | -n | C |
| c. completive | -è | V |
| d. stative | -nèn | CVC |
| e. prospective aspect 2 | -b $\hat{\varepsilon}$ | CV |
| f. prospective aspect 1 | - - | V |

[^66]Since the perfective and imperfective do not have a vowel nucleus, when they attach to the verb they become part of the final syllable of the verb. This is different from the other suffixes, which all form their own syllable.

### 3.3.2.2. The Argument from Morphological Irregularity

The second item that makes the perfective and imperfective unique is that they have irregular forms. Because of this, the Siamou dictionary (Thiessen et al. n.d) lists the perfective and imperfective forms separately for each verb (even the regular ones). None of the other inflected forms need to be listed because they are all completely regular.

I looked at the 268 one-syllable verbs in the Siamou dictionary and calculated that approximately one third of them have irregular forms for the perfective and imperfective. The irregularities are all in the segmental melody of the stem. Tone is still completely regular, and the nasal suffix of the imperfective is also always regular. The irregular verbs have their own patterns, which we might call regularities in the irregularities. Since these patterns have never been fully described, I have included a more thorough description of them in 3.4 with only a brief overview here. Over three quarters of the irregular verbs are part of either the H or the $\mathrm{M}(\mathrm{L})$ tone melody groups. These are the two groups with the largest number of verbs, so a higher total number of irregularities is expected, but they also contain the most irregularities percentage-wise. Nearly half of all H and $\mathrm{M}(\mathrm{L})$ verbs are irregular.

Irregular verbs can be divided into two categories according to the vowel of the uninflected verb. One set has the vowel $/ \varepsilon /$, and the other set has a +ATR vowel ( $/ \mathrm{i}, \mathrm{u}, \mathrm{e}, \mathrm{o} /$ ). In the first set, the main difference between the perfective and the bare verb is that the perfectives all have a glide $/ \mathrm{j} /$ in the onset while the bare verb does not. The imperfectives, on the other hand, are different from the bare verb in that they all have a liquid, $/ 1 /$, in the onset and the vowel $/ \mathrm{a} /$ in the nucleus. A few examples are shown below.

Table 3.20 Irregular Verbs Pattern 1: $/ \varepsilon /$-verbs

| Gloss | Tone | Bare Verb | Perfective | Imperfective |
| :--- | :--- | :--- | :--- | :--- |
| a. break | H | k $\dot{\varepsilon}$ | ky $\varepsilon$ | kláan |
| b. take | H | s $\dot{\varepsilon}$ | syé | hláan |
| c. sharpen/sleep | H | d $\varepsilon$ | dý́l | láan |
| d. drink | ML | gb $\varepsilon$ | y $\varepsilon$ | lan |

In the +ATR group, sometimes only the imperfective is irregular and sometimes both the perfective and imperfective are irregular. If they are both irregular, they pattern together. This means that if the perfective form is known, the imperfective form can be predicted and vice versa. In this group, the vowels of the stem are all lowered in the perfective/imperfective, and some are fronted. Some other common changes include insertion of $/ 1 /$ in the onset (or sometimes in the coda), insertion of $/ \mathrm{j} /$ (or sometimes $/ \mathrm{w} /$ ) in the onset, and metathesis of a coda consonant with the vowel. Examples are given in Table 3.21. The pairs that pattern together are in bold. Some of the patterns of irregular verbs turn out to be helpful in establishing a connection between Siamou and other Kru languages, as mentioned later in 3.3.

Table 3.21 Irregular Verbs Pattern 2: +ATR-verbs

| Gloss | Tone | Bare Verbs | Perfective | Imperfective |
| :--- | :--- | :--- | :--- | :--- |
| a. put | H | búr | bré | bréen |
| b. scrub | H | tún | tún | hlóon |
| c. blacken | $\mathrm{M}(\mathrm{L})$ | bur | bwàr | bwarn |
| d. eat | $\mathrm{M}(\mathrm{L})$ | di | dì | len |
| e. weave | H | tín | hlén | hlé |
| f. tremble | L | jìr | jàr | jarn |
| g. train | $\mathrm{M}(\mathrm{L})$ | bol | bl̀̀ | blon |
| h. plant | H | kpé | kpé | kpéen |

### 3.3.2.3 The Apparent Absence of Aspect Stacking

The tree in (57), repeated from above, shows two levels of aspect.
57.


If this is the structure of Siamou aspect, then we expect stacking of aspectual morphemes. The tree predicts that the perfective and imperfective could combine with any of the other four aspects, but not with each other. ${ }^{101}$ It also predicts that none of the other four aspects should be able to combine with each other. This second prediction is shown to be true in (58). All twelve possible pairings of these suffixes are shown, and none of them are acceptable.
58.

| a. | * À | r' | à | gbe-nèn-è | STAT-CMPL |
| :---: | :---: | :---: | :---: | :---: | :---: |
| b. | * À | r' | à | gbe-nèn-a | STAT-PRSP1 |
| c. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gbe-nèn-bè | STAT-PRSP2 |
| d. | * À | r' | à | gbe-è-nèn | CMPL-STAT |
| e. | * À | r' | à | gbe-è-a | CMPL-PRSP1 |
| f. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gb -è̀-bè | CMPL-PRSP2 |
| g. | * À | $\mathrm{r}^{\prime}$ | à | gbe-a-nèn | PRSP1-STAT |
| h. | * À | r' | à | gbe-a-è | PRSP1-CMPL |
| j. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gb -a-bè | PRSP1-PRSP2 |
| k. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gbe-bè-nèn | PRSP2-STAT |
| 1. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gbe-bè-è | PRSP2-CMPL |
| m. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gbe -bè-a | PRSP2-PRSP1 |
|  | 3SG | FIN/MOD | 3SG | drink-SUF1-SUF2 |  |

The question that remains is whether or not the perfective or the imperfective can combine with any of the other suffixes. Here I look at two cases of possible stacking: one with the imperfective and one with the perfective. Unfortunately, I am not able to draw any definite conclusions about whether this is actually stacking or not, although I suspect it is not. I simply present what I know and leave the rest for future work.

The first case of possible stacking involves the imperfective. It is possible to manipulate the Siamou verb stem in two ways in order to alter the meaning of the utterance. In (59), I show one example of this changed verb stem using the verb kú (to die) with the prospective aspect 1 suffix, $-a$. In (59a), the verb stem is unaltered. In (59b), the tone of the verb stem has changed (from high to high-mid), and a nasal consonant has been added to the right edge, and the meaning of the utterance includes stronger certainty. In (59c), the tone has changed even more drastically to become quite a long contour, and there is a nasal consonant at the right edge, as in (59b). The utterance in (59c) has more semantic intensity than (59a-b).

[^67]59.
a. $\grave{\mathrm{A}}$ bè kú-a.

3SG MOD die-PRSP1
S/he will die.
consultant comment: He might just suffer and not actually die.
b. À bè kúun-a.

3SG MOD die.v1-PRSP1
S/he will die.
consultant comment: For sure and certain.
c. À bè kúûún-a.

3SG MOD die.v2-PRSP1
S/he will die completely/horribly.
consultant comment: It's for sure and it will be horrible.
Interestingly, the form of the verb stem in (59b) is exactly the form of the imperfective of this verb (60), in terms of both the tone, and the nasal suffix. This makes it look like a possible case of stacking (IMPF-PRSP1).

| 60. | À | (ri) | kúu-n. |
| :--- | :--- | :--- | :--- |
|  | 3SG | FIN | die-IMPF |

It is dying.
In order to determine if this is actually a case of stacking, I consider five pieces of evidence: tone, the nasal consonant, regularity, co-occurrence with other aspectual categories, and semantics.

First I look at tone. If we dig further than just the one verb shown in (59), it turns out that these lengthened verb stems are not always completely identical to the imperfective. From the other tone melody groups Table 3.21, we see that the tone of the unknown verb stem is only the same as the tone of the imperfective for some tone melodies- the ones that already have a high tone (H, HL, and HM, in bold in Table 3.22). Verbs from the M tone melody group, for example, are M in the imperfective, but MHM in this unknown verb stem. This makes it look like the tone of whatever is added to the unknown verb stem is actually HM, not just $M$, like the imperfective would be. (L tone verbs do not fit this generalization, since they have a LH tone.)

Table 3.22 Tone Comparison of Imperfective and Unknown Verb Stem (UVS)

| Bare Verb |  | Imperfective |  | UVS |  | Gloss |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Form | Tone | Form | Tone | Form | Tone |  |
| kú | H | kúun | HM | kúun | HM | die |
| dè | L | den | M | dèén | LH | take |
| kel | M | kel | M | k $\varepsilon \varepsilon \ln$ | M!HM | talk |
| gb ¢ | M(L) | lan | M | gbecn | LHM | drink |
| fli | $\mathrm{M}(!\mathrm{H})$ | flen | M!HM | fliin | M!HM | survive |
| wô | HL | wézln | HM | wóon | HM | fall |
| blíin | H! H | blíin | HM | blíin | HM | fold |
| kecln | M!HL | k $\varepsilon \varepsilon \ln$ | M!HM | --- | --- | read |

The fact that both the imperfective and the unknown verb stem end in a nasal consonant also makes them look similar, but this alone is not conclusive. Also, the form in (59c) also contains a nasal consonant, and this is clearly not an imperfective because the tone is not correct for an imperfective, so the form in (59b) need not be either (i.e. whatever makes the form in (59c) have a nasal could also make the form in (59b) have a nasal).

For verbs with an irregular imperfective, the verb stem does not resemble the imperfective, but rather what the imperfective would be if it were regular. For example, the imperfective of $w \hat{o}$ ('fall') is wézln. (This HL verb is shown in Table 3.22.) The unknown verb stem has the form wóon. This could be the emergence of the unmarked.

If this lengthened verb stem were an imperfective, and if there are in fact two levels of aspect, we would expect this stem to be compatible with the stative, completive, prospective aspect 1 and prospective aspect 2 suffixes. It turns out that this stem can occur with the completive suffix (61a), the prospective aspect 1 suffix (as shown above in (59)), and the prospective aspect 2 suffix (61a), but not the stative suffix (61c).
61. a. Á nì pom tyénl à húnmo, à ri kúun-è 2SG if apple plant.PRFV DEF1 here 3SG FIN die.v1-CMPL If you plant an apple tree here, it dies.
b. À bè kúun-bè

3SG MOD die.v1-PRSP2
He's going to die.
context: He ate a poisonous mushroom. What will that do to him? consultant comment: For certain, but not as soon as if I say à bè kú-bè.

$$
\begin{array}{cllllllll}
\text { c. } & \text { A A } & \text { nì } & \text { pom tý́nl } & \text { à húnmo, à } & \text { ri } & \text { kúun-_ıèn } \\
\text { 2SG } & \text { if } & \text { apple } & \text { plant.PRFV } & \text { DEF1 here } & \text { 3SG } & \text { FIN } & \text { die.V1-STAT }
\end{array}
$$

It would be hard to tell if this verb stem was compatible with the perfective, since the perfective is marked tonally or unmarked, but that is not expected to be possible anyway if perfective and imperfective occupy the same syntactic position. I do not know why this verb stem is incompatible with the stative.

As for semantics, the unknown verb stem (from 59b) has a stronger sense of certainty than the bare root verb stem (59a). This is compatible with analyzing it as an imperfective. Imperfective aspect is expected to increase the certainty of a prospective aspect because it increases the number of possible worlds in which the event described by the verb is expected to be true (Copley 2009). However, with the prospective aspect 2 (61a), the unknown verb stem seems to make the event further in the future than the bare root verb stem, according to the consultant's intuitions. An imperfective analysis does not explain this because there is nothing in the meaning of imperfective aspect that would cause it to have a distant future reading.

In order to determine whether this verb stem was actually the imperfective (and therefore an instance of aspect stacking) I considered the factors shown below in Table 3.23. The tone of the unknown verb stem is incompatible with analyzing it as an imperfective, although it appeared to be compatible at first glance, because the tone patterns are only the same for some of the verb tone categories. The other pieces of evidence I considered could be compatible, at least in part, with a few reservations. The fact that this verb stem can stack with the prospective aspect 1 , the prospective aspect 2, and the completive, but not the stative is interesting, but I do not know what that tells us at this point.

Table 3.23 Tests to See if Unknown Verb Stem Is Imperfective

| Test | Supports Lengthened Verb Stem= IMPF |
| :--- | :--- |
| Tone | only with a few tone categories, so NO |
| Nasal Consonant | yes (but we'd still have to explain nasal in (59c)) |
| Regularity | inconclusive |
| Semantics | partially |
| Compatibility with Suffixes | inconclusive |

The second case of possible stacking involves the perfective. In 3.1.3.5, I argued that the reason $M(L)$ verbs are realized as $L$ tone in the perfective is because the perfective is a floating $L$ tone suffix and is causing the verb to link to its floating L tone rather than its M tone. However,
there is another possibility: The stative and completive might be attaching to the inflected perfective verb form. If this is so, it would be a case of stacking. An example of this is given in (62). The bare verb is mid tone (lo), but the perfective is low tone (lo) in (62a) and is the same form as the verb stem in (62b-c).
62. bare verb: lo 'arrive'

b. $\quad \begin{array}{lll}\mathrm{A} & \text { ri }\end{array}$

3SG FIN S/he has arrived.
tone melody: $\mathrm{M}(\mathrm{L})$
tone melody: L
arrive.PRFV
lò-jèn.
arrive.PRFV?-STAT
tone melody: L-L
tone melody: L-L

3SG FIN S/he (has) arrived.
lò-è. arrive.PRFV?-CMPL

This only works for regular $\mathrm{M}(\mathrm{L})$ verbs, however. When the verb is irregular, the perfective form differs from the verb stem that the completive and stative attach to. For example, the perfective of $g b \varepsilon$ is $y \grave{c}(63 \mathrm{a})$, with the L tone expected for $\mathrm{M}(\mathrm{L})$ verbs in the perfective. In (63b-c), the verb stem is $g b \grave{\varepsilon}$, which is low tone, like the perfective would be, but with a different segmental melody.
63. bare verb: $g b \varepsilon$ 'to drink'
tone melody: $\mathrm{M}(\mathrm{L})$
a. $\grave{\mathrm{A}} \quad \mathrm{r}^{\prime}$ à y 文/(*gb̀̀ $)$. tone melody: L 3SG FIN 3SG drink.PRFV S/he drank it.
(Note: can also mean 'She sold it.')
b. $\grave{\mathrm{A}} \quad \mathrm{r}^{\prime}$ à $\quad\left({ }^{*}\right.$ yè-nèn $\left.{ }^{102}\right) /$ gbè-nc̀n. tone melody: L-L 3SG FIN 3SG drink-STAT S/he drank it./S/he has drunk it.
 3SG FIN 3SG drink-CMPL S/he drank it (recently).

[^68]At this point there is no strong evidence to argue that this is a case of stacking because the segmental form of the verb root of completive and stative verbs resembles the bare verb more than it resembles the perfective. I conclude that there appears to be no stacking of aspectual suffixes on the verb. In the next section I consider the possibility that aspect can stack in another way.

### 3.3.2.4 A (Possible) Argument from Auxiliation

Languages sometimes use auxiliary verbs to allow more than one kind of aspect in a clause. For example, in English, the auxiliary have (+past participle) introduces perfect aspect and the auxiliary be (+present participle) introduces progressive aspect. These aspects can stack, as shown with the perfect progressive sentence in (64a). However, it is not possible for these aspects to stack on the same verb, as evidenced by the utterance in (64b) which attempts to stack the past and present participial forms of the verb think.
64. a. He has been thinking.
b. $\quad * \mathrm{He}$ is thinking-ed

If we only looked at (64b), we might conclude that English does not allow aspect stacking either, but that is clearly not true (see Cinque 1999). It just does not allow stacking on the same verb. There is some evidence that this may be the case in Siamou as well. The utterance in (65) expresses both prospective aspect and imperfective aspect. In order to accommodate both, the utterance uses the verb $\operatorname{tryn}$ ('be/become') with prospective aspect morphology. Imperfective aspect is marked with an imperfective nominal táayn that is the subject of the verb.
65. $\mathrm{NP}_{\text {SUBJ }}$
[Múkâl
tô cook.IMPF.NOM ${ }^{103}$

|  | PART | V-ASP | PP |  |
| :--- | :--- | :--- | :--- | :--- |
| gbo | bè | t $\varepsilon$ nn-a | $[$ ń | se. $]$ |
| thing | MOD | be/become-PRSP1 | 1 SG | to | I'll be making tô.

context: The children are hungry and it's almost evening. You are tired but you have to make supper. This is what you say to describe what you'll be doing this evening.

At the moment, this is the only example that I have that suggests aspect stacking. More data of this type needs to be collected before drawing any conclusions about the structure of

[^69]these types of utterances. However, this seems like a fruitful topic for further research on aspect stacking in Siamou. If the proposed structure (shown again in (66)) is correct, this predicts restrictions on the types of aspect stacking that can occur- anything from $\mathrm{AspP}_{1}$ should be able to stack with anything from $\mathrm{AspP}_{2}$, but there should be no stacking within the same aspect phrase. ${ }^{104}$
66.


The next section takes us in a different direction as I look at the morpho-syntactic properties of Kru aspect (focusing on perfectives and imperfectives).

### 3.4 Imperfective and Perfective Aspect within the Larger Kru Context

The purpose of this section is to describe aspect in other Kru languages, focusing on the perfective and imperfective, and to explore how closely Siamou resembles its relatives in this regard. Within a language family, aspectual categories are expected to show phonological and morpho-syntactic similarities (although it is not a necessity). Therefore, I examine some of the same features that were found to characterize the Siamou perfective and imperfective to see how closely Siamou resembles other Kru languages. I also look at some features of aspect in Kru that are not found in Siamou. The information about Kru is mainly from Marchese (1986).

The Kru language family has four main aspects: perfective (67a), imperfective (67b), progressive (67c) and perfect (67d).

[^70]67. language: Godié (data from Marchese 1986:29)
a. $\quad \rho$ kû.
he die.PRFV
He died.
b. $\bar{\jmath} \quad$ kú .
he die.IMPF
He is dying.
c. $\bar{\jmath}$ kù kú d̄̄.
he be.at die place
He is in the process of dying.
d. $\bar{\jmath} \quad y \bar{\Lambda} \quad$ kú.
he PERF die
He [is dead]/[has died].
Most Kru languages do not have all these distinctions, but all of the ones that Marchese (1986) looked at have a perfective and imperfective. Therefore, she considers the perfective and imperfective to be the core aspects of Kru.

### 3.4.1 The Form of Aspectual Inflection: Siamou Converges with Kru

The most basic contrast between perfectives and imperfectives in Kru is that perfectives sometimes have the same form as the bare verb, whereas imperfectives never do. When an aspectually inflected verb form is identical to the bare verb, I say that it is unmarked. When it is different than the bare verb, I say that it is marked.

### 3.4.1.1 Perfective Aspect May Be Marked or Unmarked

Kru is split between languages that have an unmarked perfective and those that have a marked perfective. The common pattern for Western Kru languages is for the perfective to be unmarked, as in Dewoin, Klao, Wobé, and Bété (Marchese 1986:25, 35). (In fact, Marchese (1986:30) argues that the perfective was unmarked in Proto-Kru.) This means that in these languages perfective verbs are identical to the bare verb. Although I was not able to find any examples in Marchese (1986) that actually showed the perfective to be the same as the bare verb, ${ }^{105}$ the

[^71]following example (68) contrasts the perfective with the imperfective in Klao. The imperfective is the same as the perfective except for a suffix that occurs on the subject.
68. ${ }^{106}$ language: Klao (from Marchese 1986:30)
a. $\overline{\text { o }}$ blē.
he sing
He sang.
b. $\overline{\text { 万人 }}$ - blē.
he-IMPF sing
He [is singing]/[sings].

The phrases in (69) are from Kouya, a western Kru language with an unmarked perfective (Saunders 2009). In (28a), the verb, -tu appears in a finite clause with a perfective interpretation. In (69b), it occurs with future marking, and in (69c) as an imperative. In all three cases, the verb stem is unchanged, and the only affix is the event foregrounding morpheme in (69a).
69. ${ }^{107}$ language: Kouya (from Saunders p.c)
a. $0 \quad-\mathbf{t u}=\mathrm{a}$ 'yli ta. 3SG stay=EVN day three S/he stayed three days.
b. in 'yibha in 'ka -tu. 1 SG wish 1 SG FUT.AUX stay I want to stay.
c. (-in) -tu.

2SG stay
(You) stay!
The above examples are of languages with unmarked perfectives.

[^72]
### 3.4.1.2 Imperfective Is Always Marked

In contrast to the perfective, imperfectives in Kru are always marked in some way. For example, many languages have imperfective marking at the right edge of the verb, as shown in Table 3.24 for Grebo, Nyabo, Lakota Dida and Neyo.

Table 3.24 Kru Imperfectives

| Language $^{\text {108 }}$ | Verb Stem | Imperfective | Gloss |
| :--- | :--- | :--- | :--- |
| Grebo (Western) | du | dui | pound |
|  | s̃̃ | sõẽ | rot |
|  | mu | mi | go |
|  | po | pe | throw |
| Nyabo (a dialect of Southern Grebo) <br> (Western) | wo | w $\varepsilon$ | finish |
|  | nu | ni | do |
| Lakota Dida (Eastern) | pi | pe | cook |
|  | l̄ | lē | eat |
|  | li | lye | eat |
|  | ku | kue | die |
|  | dodo | dodoe | study |

For a small number of verbs in these languages, the marking on the verb may be neutralized, as shown in Table 3.25, but this is never the general pattern in any Kru language. I explore the Kru strategies for marking imperfectives in more detail in 3.2.2.1.

Table 3.25 Kru Imperfectives That Resemble the Verb Stem

| Language | Verb Stem | Imperfective | Gloss |
| :--- | :--- | :--- | :--- |
| Grebo | ko | ko | have |
|  | bi | bi | beat |
|  | kũ | kũ | grow |
| Nyabo (a dialect of Southern Grebo) | di | di | eat |

To summarize, one way that perfectives and imperfectives are distinguished in Kru is by the presence or absence of marking. Recall that in Siamou, some perfectives are unmarked (at least on the surface), but imperfectives are never unmarked, except incidentally. Thus, in this respect, Siamou patterns with other Kru languages.

[^73]
### 3.4.2 The Tonal Melody of Aspectual Inflection: Siamou Converges with Kru

Tone plays a role in distinguishing the perfective from the imperfective in some Kru languages.

### 3.4.2.1 Marked Perfective Is Always Low Tone

In those languages where perfective aspect is phonologically marked, it is marked by a low tone. This is primarily the case for Eastern Kru languages, such as Godié, Koyo, and Lakota Dida. Marchese (1986) hypothesizes that this low tone originally came from a low tone perfect marker which was later reanalyzed (Marchese 1986:36).

Table 3.26 shows a number of verb stem/perfective pairs in some of the languages that mark perfective aspect with low tone. Verbs ending in a high tone sometimes become high-low in the perfective (Table 3.26a,g), and sometimes become low tone (Table 3.26e,k,l). Verbs ending in a mid tone become low tone (Table 3.26b,d,f,h,j,m), and verbs ending in a low tone remain low tone in the perfective (Table $3.26 \mathrm{c}, \mathrm{n}, \mathrm{i}$ ).

Table 3.26 Kru Low Tone Perfectives

| Language | Verb Stem |  | Perfective |  | Gloss |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Form | Tone Melody | Form | Tone Melody |  |
| Godié | a. nú | H | nû | HL | hear |
|  | b. $\mathrm{y} \overline{1}$ | M | yì | L | come |
|  | c. 6à | L | bà | L | leave |
|  | d. fétē | H-M | fétè | H-L | pierce |
|  | e. bílí | H-H | 6ílì | H-L | hit |
| Vata (dialect of Lakota Dida) | f. gbā | M | gbà | L | speak |
|  | g. nú | H | nû | HL | understand |
|  | h. pálà ${ }^{109}$ | H-M | pálà | H-L | show |
|  | i. $10^{-110}$ | ML | $10^{-}$ | ML | to make mounds (for yams) |
| Koyo (dialect of Godié, but perhaps more similar to Dida ${ }^{111}$ ) | j. lī | M | lì | L | eat |
|  | k. ḿlá | H-H | ḿlà | H-L | drink |
|  | 1. vé | H | vè | L | fight |
|  | m. gōlū | M-M | gòlù | L-L | plant |
|  | n. wōlò | M-L | wōlò | M-L | wash |

[^74]In (70a), the bare verb kú has a high tone. The perfective form has a high-low contour tone. The examples in (70b-c) show a perfective with a low tone in Koyo (70b) and Lakota Dida (70c). ${ }^{112}$
70. a. language: Godié (from Marchese 1986:29) verb stem: $k u ́$ 'die' ${ }^{113}$

| 0 kû. | PRFV: HL |
| :--- | :--- |
| he die.PRFV |  |
| He died. |  |

b. language: Koyo (from Marchese 1986:44)


### 3.4.2.2 Marked Imperfective Is Usually Mid Tone

In contrast with the perfective, the tone commonly associated with the imperfective is mid. In (71-73), the (a) examples repeat the perfective forms shown in (70) above, and the (b) examples show the imperfective forms of the same verbs. The original tone of the stem may be retained, so, for example, in (71), the verb stem has a H tone and the imperfective in (71b) has a HM contour. The imperfectives in (72b) and (73b) both have a M tone, in contrast to the L tone perfectives in (72a) and (73a).
71. language: Godié (from Marchese 1986:29) verb stem: kú 'die'
a. 0
kû.
PRFV: HL
he die.PRFV
He died.

[^75]b. ${ }^{114}$
kú.
IMPF: H
he
die.IMPF
He is dying.
72. language: Koyo (from Marchese 1986:44)
a. ó
pà.
PRFV: L
he run.PRFV
He ran.
b. $\quad$ b pā.
IMPF: M
he run.IMPF
He is running.
73. language: Lakota Dida (from Marchese 1986:45)
a. $\overline{\text { o }} \quad \mathrm{ml}$ è.
he go.PRFV
He left.

$\begin{array}{lll}\text { b. } & \bar{\jmath} & \mathbf{m l} \overline{\boldsymbol{\varepsilon}} . \\ & \text { he } & \text { go.IMPF }\end{array}$
He is going.
IMPF: M

Again, these facts match the Siamou pattern: when the perfective is marked, it is marked by a low tone, whereas the imperfective is marked by a mid tone (and a nasal).

For the perfective, low tone is the only overt phonological marker there is in Kru. For the imperfective, on the other hand, tone marking usually occurs in conjunction with segmental content, which I now discuss.

### 3.4.3 The Segmental Form of Aspectual Inflection: Siamou Converges with Kru

I turn now to the segmental form and show that a typical Kru perfective, when it is marked, is marked exclusively with tone. The imperfective, on the other hand, although it usually bears mid tone, also has segmental marking in most cases.

### 3.4.3.1 Perfective Usually Lacks a Segmental Form

Table 3.26 above showed the tonal differences between the verb stem and the perfective in a number of languages. It also showed that the segmental form of the perfective is the same as

[^76]the segmental form of the verb stem in those languages: the only difference between them is tone. In Table 3.25 above, the imperfective also had the same segmental form as the verb stem (or the same as the perfective in the cases where the verb stem is not explicitly stated). However, those imperfectives are the exception rather than the norm. Usually, Kru imperfectives are marked segmentally, and not just tonally.

### 3.4.3.2 Imperfective Usually Has a Segmental Form

Kru languages have two main morphological strategies for marking imperfectives. The most common type is a verbal suffix (74a), and the less common type is a suffix on the subject (74b).
74. a. language: Grebo (from Marchese 1986:39, originally from Innes 1966:74)

| ne | du-i | n $\varepsilon$ | ne. |
| :--- | :--- | :--- | :--- |
| 1SG | pound-IMPF | it | be |

I am pounding it./I pound it habitually.
b. language: Klao (from Marchese 1986:39, originally from Monu n.d:30)

0-э du kj̀.
she-IMPF pound rice
She pounds rice (every day)./She is pounding rice.
In some languages there may be a subject suffix as well as the tonal remains of a verbal suffix. The example in (75) is from Klao and contrasts the perfective with the imperfective. The perfective verb (75a) has a mid-low tone while the imperfective has the suffix $-\bar{a}$ on the subject, and a mid tone on the verb in the imperfective. This is a language where the perfective is unmarked, so the low tone (part of the mid-low contour) is not a marker of the perfective in this case.
75. language: Klao (from Marchese 1986:48, originally from Lightfoot 1974:433)


The subject suffix often shows up as - $a$ (as in 75b) but on pronouns, it usually assimilates to the vowel of the pronoun (as in 74b). As for the verbal suffix, Marchese (1986) notes that "in the majority of Kru languages [it] has the same form: a front vowel which typically agrees in vowel height and vowel harmony with the verb stem. Often the imperfective suffix completely replaces the final vowel of the verb stem or it may cause morpho-phonological changes within the verb stem itself" (Marchese 1986:40). Some examples of this are given in Table 3.27.

Table 3.27 Kru Imperfectives with a Different Segmental Form Than the Verb Stem

| Language | Verb Stem | Imperfective | Gloss |
| :---: | :---: | :---: | :---: |
| Neyo (Eastern) | li | lye | eat |
|  | ka | k $\varepsilon$ | have |
|  | ku | kue | die |
| Lakota Dida (Eastern) | 6lū | 6lē | pound |
|  | pi | pe | cook |
| Grebo (Western) | du | dui | pound |
|  | mu | mi | go |
|  | to | toe | string |
|  | po | pe | throw |
| Nyabo (Western) (a dialect of Southern Grebo) | nu | ni | do |
|  | di | di | eat |
|  | wo | w $\varepsilon$ | finish |

In some languages, the segment $/ 1 /$ appears to be part of the imperfective verbal suffix for some verbs (Table 3.28). Marchese (1986) observes that Siamou also has a number of verbs with $/ 1 /$ in the imperfective (Marchese 1986:51, originally from Prost 1964:366). The Siamou examples in Table 3.28 are reproduced as they appear in Marchese's (1986) work. The currently-accepted forms are in brackets. (The original source (Prost 1964) did not mark tone or the nasal consonant of the imperfective.) ${ }^{115}$

[^77]Table 3.28 Kru Imperfectives with /l/

| Language | Verb Stem | Imperfective | Gloss |
| :---: | :---: | :---: | :---: |
| Neyo (Eastern) | ze | zele | read |
|  | mu | mule | go |
| Vata (Eastern) ${ }^{116}$ | ka | kala | have |
|  | gāl $\bar{\varepsilon}$ | glāl̄̄ | follow |
| Koyo (Eastern) | mù (PRFV) | $\mathrm{ml} \bar{\varepsilon}$ | go |
| Siamou ${ }^{117}$ | to (tó) | tع1 (t'ź ln ) | hunt |
|  | ko (kwo) | $\mathrm{kl} \mathrm{\varepsilon}$ (kl $\varepsilon \varepsilon \mathrm{n}$ ) | do |
|  | di (di) | le (leen) | eat |
|  | duko (dukú) | duklo (duklósn) | raise |

These data lead Marchese (1986) to hypothesize that the Proto-Kru imperfective had both a subject suffix and a verbal suffix. She postulates the form S-a V-e (or possibly S-a V-le) for the Proto-Kru imperfective. Nasal consonants are never mentioned in connection with Kru imperfective aspect. This appears to be a Siamou innovation, or it may be the counterpart to the /l/ found in other Kru langauges. Irregular Siamou verbs, however, have remnants of the original Kru suffix. The regular form of the imperfective does not have $/ 1 /$, but this is a common characteristic of irregular imperfectives, and sometimes irregular perfectives as well. ${ }^{118}$ The irregular verbs do more to connect the Siamou imperfective to the Kru imperfective than the regular ones. In a more general way, Siamou regular imperfectives do pattern with other Kru imperfectives in that they differ segmentally from the bare verb, whereas perfectives do not.

### 3.4.4 Aspectual Inflection and Negation: Siamou Diverges from Kru

There is a strategy for differentiating the perfective and imperfective in Kru which does not exist in Siamou. All the Kru languages in Marchese's (1986) study for which she had the relevant data had different negation strategies for the perfective and imperfective.

### 3.4.4.1 Perfective Uses Negative Auxiliary with OV Order

All perfectives in the Kru languages discussed by Marchese (1986) are negated by an auxiliary. The auxiliary causes the word order to change from VO to OV. Example (76a) shows an affirmative perfective. Notice that the verb (pi) precedes the object (say $\grave{\varepsilon}$ ). Example (76b) is a perfective negated by the auxiliary se. In this sentence, the object precedes the verb.

[^78]76. language: Dewoin (from Marchese 1986:168)

| a. | S | V | O |
| :--- | :--- | :--- | :--- |
|  | o | pi | sayè. |
|  | he | cook | meat |
|  | He cooked meat. |  |  |

affirmative
negative (with AUX)

| b. | S | AUX | O | V |
| :--- | :--- | :--- | :--- | :--- |
|  | 0 | se | sayè | pi. | he NEG.AUX meat cook He didn't cook meat.

### 3.4.4.2 Imperfective Uses Negative Particle with VO Order

Imperfectives are negated by a particle. The particle does not cause a change in word order. In the affirmative sentence in (77a), the verb (na) precedes the object (tawa), the same as (76a). In the negative sentence (77b), the verb still precedes the object.
77. language: Dewoin (from Marchese 1986:168)
a. S
-0
he-IMPF
He smokes.

| b. | S | PART | V | O |
| :--- | :--- | :--- | :--- | :--- |
|  | o-o | ní | na | tawa. |
|  | he-IMPF | NEG.PART | drink | tobacco | He doesn't smoke.

$\begin{array}{llr}\mathrm{V} & \mathrm{O} & \text { affirmative } \\ \text { na } & \text { tawa. } & \\ \text { drink } & \text { tobacco } & \end{array}$

| V | O | affirmative |
| :--- | :--- | :--- |
| na | tawa. |  |
| drink | tobacco |  |

negative (with PART) ne

The difference between auxiliaries and particles is that auxiliaries always occur in clauses where the basic word order is $\mathrm{S}(\mathrm{Aux}) \mathbf{O V}$ whereas particles occur in clauses where the basic word order is S(Part)VO. Thus, negative auxiliaries induce a change in word order from SVO in the affirmative (35a) to S (Aux)OV in the negative (76b). Negative particles do not have such an effect (77b).

Notice in (78) that the object kùà and the verb $n u$ are reversed from one example to the next: the negative perfective has OV word order while the negative imperfective has VO word order. It also appears that the verbs are uninflected in this case, since the verb for the perfective (78a) and imperfective utterances have the same form.
78. language: Borobo (from Marchese 1986:167)

| a. | S | AUX | O | V | negative perfective |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 0 | $\mathbf{i}$ | kùà | nu |  |
|  | he NEG.AUX | work | do |  |  |
|  | He didn't do work. |  |  |  |  |


| b. | S | PART | V | o | negative imperfective |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 0 | ne | nu | kùà |  |
| he NEG.PART | do | work |  |  |  |
|  |  |  |  |  |  |
|  | He's not working. |  |  |  |  |

Siamou differs from the other Kru languages in that it does not make use of different negation strategies to differentiate between perfective and imperfective clauses. Instead, both are negated with a clause final particle, bo. ${ }^{119}$ In fact, Siamou does not distinguish at all between second-position particles and auxiliaries like Kru does. The word order is always S (Part) O V. The only difference between (79a) and (79b) is the actual form of the verb. There is no auxiliary/particle alternation and no change in word order.
79.

| a. | A | ri | le | dì | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | S | PART | o | V | PART |
|  | 3SG FIN | food | eat.PRFV | NEG |  |
|  | S/he didn't eat food. |  |  |  |  |
|  |  |  |  |  |  |
| b. | A | ri | le | leè-n | bo. |
|  | S | PART | o | V | PART |
|  | 3SG FIN | food eat-IMPF | NEG |  |  |
|  | S/he [doesn't eat]/[isn't eating] food. |  |  |  |  |

In Table 3.29 I summarize these different negation strategies.

Table 3.29 Negation Strategies

|  | Siamou |  | Other Kru |  |
| :--- | :--- | :--- | :--- | :---: |
|  | Perfective/Imperfective | Perfective | Imperfective |  |
| Negation Strategy | PART + NEG ENCL | NEG.AUX | NEG.PART |  |

[^79]
### 3.4.5 Conclusion

Table 3.30 summarizes the findings about the general patterns of Kru perfectives and imperfectives as discussed above and compares them with the Siamou perfective and imperfective.

Table 3.30 Kru Perfectives and Imperfectives

| Characteristic | Perfective Aspect |  |  | Imperfective Aspect |
| :--- | :---: | :--- | :--- | :--- |
|  | Siamou $\quad$ Kru | Siamou | Kru |  |
| a. Absence of <br> marking | yes (sometimes) | no |  |  |
| b. Tone Melody | low tone (if marked) | mid tone |  |  |
| c. Segmental Form | no (except Siamou <br> irregular verbs) | yes (nasal suffix, always) <br> (and irregular verbs) | yes (usually a <br> vowel, /l/) |  |
| d. Suffix | yes (on verb, if marked) | yes (on verb only) | yes (on verb, <br> subject, or both) |  |

The Siamou perfective fits extremely well with Kru, even to the extent of having both an unmarked group and marked (low tone) group. As in other Kru languages, when it is marked, it is a tonal suffix on the verb. It does not change the segmental form of the bare verb (except for irregular verbs in Siamou). The Siamou imperfective also resembles other Kru imperfectives in some ways: it is always marked in some way, it bears mid tone, it has segmental content, and it is suffixal. However, while the Siamou imperfective is marked by a nasal consonant suffix on the verb, the Kru imperfective is generally marked by a vowel, and sometimes the consonant / $1 /$, and it may be either a verbal suffix or a suffix on the subject, or both. Siamou is part of the group that marks it on the verb. Irregular imperfective forms in Siamou show some similarities with the form of the Kru imperfective, which I show in an appendix to chapter 3, following the conclusion.

### 3.5 Conclusion

In this chapter, I have introduced three tone classes of aspectual suffixes: $L$ tone perfective, completive and stative, $M$ tone imperfective and prospective aspect 1 and HL tone prospective aspect 2. I argued in 3.2 that aspect appears to be right-headed in Siamou, and in 3.3 that there are two aspect heads: a lower head containing the perfective and imperfective and a higher head containing the other four aspects. In 3.4 I described perfective and imperfective aspect in Kru and noted many similarities between other Kru languages and Siamou with respect to aspect.

This chapter deals heavily with tone patterns. However, it is largely descriptive. I use the observed tone markings mainly as diagnostics for aspectual classes. It would be useful, at some later date, to do an analysis of the tone patterns described in this chapter in a phonological framework such as optimality theory.

### 3.6 Appendix: Stem Allomorphy

In this section, I give a detailed description of the patterns of irregular verbs in Siamou. This information is not crucial to the analyses given in this dissertation, and may be passed over without harm. However, these patterns have never been described in detail before, and they are expected to be of interest to linguists working on Siamou as well as other Kru languages.

The perfective and imperfective are the only verbs forms that may be irregular. The completive, stative, prospective aspect 1, and prospective aspect 2 are all completely regular, so they are not discussed here.

As I showed in 3.1, the perfective and imperfective are marked by suffixes on the verb. The perfective is a $L$ tone suffix ( $-L$ ), which does not always surface (3.1.3). Regular perfectives are sometimes identical to the bare verb, and sometimes have a different tone than the bare verb. These tone differences are predictable based on the tone melody of the bare verb. Regular imperfectives, on the other hand, are formed by a $M$ tone nasal consonant suffix (- $\bar{n}$ ) (3.1.4). Therefore, regular perfective verbs always have the same segmental form as the bare verb, and regular imperfective verbs always have the same segmental form as the bare verb with the addition of the nasal consonant.

When verbs have irregular perfective and imperfective forms, the irregularities are always segmental. The tone patterns are always regular, and the nasal consonant of the imperfective is always present, even on irregular verbs.

In this description, I look only at one-syllable Siamou verbs taken from the Siamou dictionary (Thiessen et al. n.d). I have excluded all homonyms. However, if a verb is homophonous with another verb in one or two forms, but not all three (i.e. bare verb, perfective, imperfective), I included both verbs. To illustrate this, in Table 3.31, I give a number of verb pairs that are homophonous in one or two forms but not completely homophonous. The homophone pairs are in bold.

Table 3.31 Homophone Pairs

| Gloss | Tone Melody | Bare Verb | Perfective | Imperfective |
| :---: | :---: | :---: | :---: | :---: |
| a. give | L | tè | tı̀ | t ¢ |
| b. shower | L | tè | tyèl | tyeln |
| c. open | M(L) | fli | flì | flin |
| d. survive | M(H) | fli | fle | flen |
| e. dip (water) | M(L) | kwo | kwò | klen |
| f. kill | M(L) | kwo | kwò | kron |
| g. weave | H | tín | hlén | hlé |
| h. knead | H | shín | hlén | hléen |
| i. look | M(L) | yi | yì | len |
| j. resemble | M(L) | li | lغ̀ | IEn |

For example, in Table 3.31a-b, the bare verb forms are both tè, but the perfective and imperfective forms both differ from one verb to the next ( $t \grave{\varepsilon}$ vs $t y \grave{\varepsilon} l$ and $t \varepsilon n$ vs $t y \varepsilon l n$ ). In Table $30 \mathrm{c}-\mathrm{d}$, the forms are homophonous in the infinitive (fli), even though they belong to different tone melody groups $(\mathrm{M}(\mathrm{L})$ and $\mathrm{M}(\mathrm{H})) .{ }^{120}$ In Table 3.31e-f I show a pair of verbs that have homophonous bare and perfective forms but differ in the imperfective. The pair in Table 3.31g-h are homophonous in the perfective and imperfective, but differ in the bare verb form. The pair in Table 3.31i-j are homophonous in the imperfective only. Among the one-syllable verbs, I did not manage to find a pair that shared a perfective form but differed in the bare verb form and in the imperfective. This is because there is a strong trend in the irregular verbs either for the perfective and the imperfective to pattern together, or for the perfective and the bare verb to pattern together.

For this description, I look at a total of 268 verbs, of which 79 are irregular (about $30 \%$ ). The distribution of irregular forms sorted according to their tone melody groups is given in Table 3.32. The first column of this chart lists the tone melody groups. The second column gives the total number of one-syllable verbs in each group (for a grand total of 268). The third and fourth columns give the total number and percentage of verbs that have irregularities. The fifth and sixth columns give the total number and percentage of verbs that are irregular in the perfective

[^80]and imperfective, and the seventh and eighth columns give the total number and percentage of verbs that are irregular in the imperfective only. ${ }^{121}$

Table 3.32 Irregular Siamou Verbs

| Tone Melody | \# of Verbs | Irregularities |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total |  | PrFV and IMPF |  | IMPF only |  |
| H | 72 | 35 | 49\% | 30 | 42\% | 5 | 7\% |
| L | 37 | 9 | 24\% | 9 | 24\% | 0 | 0\% |
| M | 39 | 1 | 3\% | 1 | 3\% | 0 | 0\% |
| M (! H ) | 29 | 7 | 24\% | 7 | 24 \% | 0 | 0\% |
| M(L) | 53 | 26 | 49\% | 14 | 26\% | 12 | 23\% |
| HL | 24 | 1 | 4\% | 0 | 0\% | 1 | 4\% |
| H! H | 11 | 0 | 0\% | 0 | 0\% | 0 | 0\% |
| M!HL | 3 | 0 | 0\% | 0 | 0\% | 0 | 0\% |
| Total | 268 | 79 | 30\% | 61 | 23\% | 18 | 7\% |

From the information in Table 3.32, we can make a few observations. First of all, irregularities are most common in the largest tone melody groups (H and $M(L)$ ). Nearly half of all $H$ and $M(L)$ verbs are irregular. About a quarter of the verbs in the $L$ and $M(H)$ are irregular, and the $M$ and HL groups have one irregular verb each. The two smallest tone melody groups (HM and MHM) have no irregularities.

Of the 79 irregular verbs, 61 have an irregular perfective and imperfective. The remaining 18 have an irregular imperfective, but the perfective is regular. There are no irregular verbs with an irregular perfective and a regular imperfective.

Next I look at the forms of the irregular verbs. The irregularities, although unpredictable, are not completely random, but form patterns that I like to think of as regularities in the irregularities.

Irregular verbs fall into one of two sets. The first set of verbs all have the vowel $\varepsilon$ in the bare form. The second set of verbs all have an ATR vowel ( $u, i, o, e$ ) in the bare form. There are 15 verbs in the first group and 64 in the second. It is possible that these different groups are the remnants of a verb class system, but since they share phonological properties as well, it is unlikely.

[^81]
### 3.6.1 Set 1: / $\varepsilon /$ Verbs

The 15 verbs in the $\varepsilon$ group are shown in Table 3.33. All of them belong to the H or $\mathrm{M}(\mathrm{L})$ tone melody groups (the largest groups). These verbs all have the vowel $/ \varepsilon /$ and an open syllable in the bare form.

Table 3.33 Irregular Siamou Verbs with $/ \varepsilon /$

| Gloss | Tone | Bare Verb | Perfective | Imperfective |
| :---: | :---: | :---: | :---: | :---: |
| a. take | H | s ¢́ | $\mathrm{s}(\mathrm{h})(\mathrm{y}) \dot{\varepsilon}$ | hláan |
| b. shoot (arrow) | H | tı́ | tyé | hláan |
| c. shoot (gun) | H | f ¢́ | fyé | fláan |
| d. break | H | ké | ky | kláan |
| e. close/pinch | H | kp $\varepsilon$ | kyé | $\mathrm{k}(\mathrm{p})$ láan |
| f. eat (meat) | M(L) | $\mathrm{k} \varepsilon$ | kyè | klaàn |
| g. insult | M(L) | f $\varepsilon$ | fyè | flaàn |
| h. come | M(L) | $\mathrm{b} \varepsilon$ | byè | blaàn |
| i. drink | M(L) | $\mathrm{gb} \varepsilon$ | yè | laàn |
| j. plant | H | tég ${ }^{122}$ | tyén 1 | hláayn |
| k. hull | H | f f́n | fyénl | fláayn |
| 1. give | H | kén | kyénl | kláayn |
| m. burn | H | ¢m $\varepsilon^{123}$ | myél | (y)mláan |
| n. sharpen/sleep | H | d $\varepsilon$ ' | dyél | láan |
| o. hit | M(L) | 1m $\varepsilon$ | Ømè | ymec̀ln |

First I look at how the perfective differs from the bare verb. All of them, except Table 3.33o, have the glide /j/ (orthographically, $y$ ) inserted between the onset and the vowel. ${ }^{124}$ Verbs with a nasalized vowel (usually written with $\eta$ after the vowel) also gain an $/ 1 /$ in the coda (Table 3.33 j $\mathrm{m})$. There is one exception to this: $d \varepsilon$ in Table 3.33 n is not nasalized but it also has an $/ 1 /$ in the coda of the perfective. Usually the onset of the bare verb stays the same in the perfective, except if it would result in an illegal cluster. For example, in Table 3.33i, the perfective would have the onset $/ \mathrm{gbj} /$, which is not a possible Siamou cluster. The solution is to drop the double articulation, /gb/.)

In the imperfective form, the vowel changes to $/ \mathrm{a} /$, without exception. Also, every verb (except in Table 3.33o) inserts an /l/ between the onset and the vowel. If this would result in an

[^82]illegal cluster, the original onset is deleted or changed. (Again, $/ \mathrm{gb} /$ is deleted in Table 3.33i, as well as the voiced alveolar /d/ in Table 3.33n.) The voiceless alveolars, /s,t/, become /h/ (Table $3.33 \mathrm{a}-\mathrm{b}$ ). The verb $\eta m \varepsilon$ (hit) in Table 3.33 o does not fit in with the rest. It has a regular perfective without a $/ 1 /$ in the coda. In the imperfective it gains an $/ 1 /$ in the coda, instead of in the onset. This completes the description of the set of $\varepsilon$ verbs.

### 3.6.2 Set 2: ATR Verbs

The remaining 64 irregular verbs all have a + ATR vowel $(u, i, o, e)$ in the bare form. This group can be subdivided into two categories: verbs where only the imperfective is irregular ( 17 verbs), and verbs where both the perfective and imperfective are irregular (47 verbs). If the perfective and imperfective are both irregular, they always pattern together. That is, if you know the perfective form, you can correctly predict the imperfective form, and vice versa. Another way of looking at it is that sometimes the perfective patterns with the bare verb (i.e. it's regular) and sometimes it patterns with the imperfective (i.e. it is irregular). I could not find any way to predict which way the perfective would swing. It may be that this is language change in progress- either the perfective is regularizing (patterning with the bare verb) or becoming irregular (patterning with the imperfective). This is one of the key differences between the +ATR verbs and the $/ \varepsilon /$ verbs. With $/ \varepsilon /$ verbs, the perfective does not pattern either with the bare verb or with the imperfective.

In Table 3.34, I give a few examples of verbs from both of these groups: Table 3.34a-c shows verbs with a regular perfective, and Table $3.34 \mathrm{~d}-\mathrm{g}$ shows verbs with an irregular perfective. For each verb, the pairs that pattern together are in bold.

Table 3.34 Irregular ATR Siamou Verbs

| Gloss | Tone | Bare Verb | Perfective | Imperfective |
| :--- | :--- | :--- | :--- | :--- |
| a. run/drive | H | tú | tú | hlóon |
| b. eat | $\mathrm{M}(\mathrm{L})$ | di | dì | len |
| c. cry | $\mathrm{M}(\mathrm{L})$ | to | tò | hlعєn |
| d. leave/resemble | M(L) | li | lı̀ | lєn |
| e. write | H | núr | jwár | jwáarn |
| f. age | M(L) | kol | kl̀̀ | klon |
| g. give | L | tè | t̀̀ | t\&n |

For the purposes of the next part of the discussion, I look at the differences between the bare verb and the imperfective. I set aside the perfective since it is always either like the infinitive or like the imperfective.

The 64 verbs in this group all have one of four +ATR vowels in the bare form ( $u, i, o, e$ ). This vowel always changes in the imperfective. There are ten different vowel changes in all, listed in Table 3.35. The first column of this chart lists the vowel of the bare verb (and the number of verbs in that group). The second column lists the vowel of the imperfective. The third column lists the number of verbs that follow that pattern.

From Table 3.35, I make a number of observations. These vowels all undergo lowering, most become -ATR (except for six verbs where the vowel becomes /e/ or / $\mathrm{o} /$ ), and some become fronted in the imperfective ( $/ \mathrm{o} /$ becomes $/ \varepsilon /$ in eleven verbs, and $/ \mathrm{u} /$ becomes $/ \mathrm{e} /$ in one). None of them undergo raising or backing.

Table 3.35 Vowel Changes of Irregular ATR Siamou Verbs

| Bare Verb Vowel | IMPF Vowel | $\#$ |
| :--- | :--- | :--- |
| u (19 verbs total) | e | 1 |
|  | $\mathbf{0}$ | 4 |
|  | 0 | 7 |
|  | a | 7 |
| (14 verbs total) | $\mathbf{e}$ | 1 |
|  | $\varepsilon$ | 9 |
|  | a | 4 |
|  | $\varepsilon$ | 11 |
| e (15 verb total) | $\varepsilon$ | 15 |

In Table 3.36, I show the set of $/ \mathrm{u} /$ verbs. Perfectives that are regular are in bold. Besides the vowel changes, some of the other changes that occur in these verbs are similar to the $\varepsilon$ verbs. Most imperfective forms with $/ \mathrm{o} /$ or $/ \mathrm{\rho} /$ gain an $/ 1 /$ in the onset (Table $3.36 \mathrm{~b}-\mathrm{j}$ ). If this would create an illegal cluster, these are simplified or changed to $/ \mathrm{h} /$, as with the $\varepsilon$ verbs (Table 3.36b-d, $\mathrm{f}, \mathrm{g}, \mathrm{j})$. The imperfectives with $/ \mathrm{a} /$ do not gain an $/ \mathrm{l} /$ in the coda. Sometimes a coda $/ \mathrm{r} /$ metathesizes with the vowel and becomes part of the onset (Table 3.36a,k,l). Some of the imperfectives with /a/ gain a glide $/ \mathrm{w} /$ in the onset (Table 3.36q-s).

There may be a connection between the coda of the bare verb and the vowel change that occurs. The verbs that change to $/ \mathrm{o} /$ have no coda. The verbs that change to $/ \mathrm{\rho} /$ mostly have a
nasal coda ( or $/ \mathrm{r} /$ ), and the verbs that change to $/ \mathrm{a} /$ (and the one that changes to $/ \mathrm{e} /$ ) have an $/ \mathrm{r} /$ coda.

Table 3.36 Irregular Siamou Verbs with /u/

| /u/Verbs |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ImPF vowel | Gloss | Tone Melody | Bare Verb | PRFV | IMPF |
| e | a. put | H | búr | bré | bréen |
| 0 | b. climb | H | dú | dú | lóon |
|  | c. run/drive | H | tú | tú | hlóon |
|  | d. say/wash/fill | H | wú | ló | lóon |
|  | e. die | H | kú | kló | klóon |
| 0 | f. scrub | H | tún | tún | hlónn |
|  | g. tap/beat | M(L) | tun | tùn | hlon |
|  | h. eat (chew) | M(L) | kun | kùn | klon |
|  | i. suck | M(L) | mun | mùn | mlon |
|  | j. know | M(L) | shu | hlò | hlon |
|  | k. expand | H | gbúr | gbró | gbróon |
|  | 1. collect | H | kúr | kró | krósn |
| a | m. pay (a debt) | H | túr | tár | táarn |
|  | n. roll into balls | L | mùr | màr | marn |
|  | o. touch lightly | M(L) | dwur | dwàr | dwarn |
|  | p. split | M(H) | gbur | gbar | gbarn |
|  | q. write | H | núr | jnwár | nwáarn |
|  | r. blacken | M(L) | bur | bwàr | bwarn |
|  | s. dry | M(L) | fur | fwàr | fwarn |

Table 3.37 contains the set of $/ \mathrm{i} /$ verbs. Of these, the imperfectives with $/ \mathrm{e} /$ or $/ \varepsilon /$ gain an $/ \mathrm{l} /$ in the onset, but not the imperfectives with $/ \mathrm{a} /$. The set of verbs that change to $/ \mathrm{a} /$ all have a coda $/ \mathrm{r} /$ in the bare form. These patterns are similar to the $/ \mathrm{u} /$ verbs in Table 3.36.

Table 3.37 Irregular Siamou Verbs with /i// ${ }^{125}$

| /i/ Verbs |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ImPF vowel | Gloss | Tone Melody | Bare Verb | PRFV | IMPF |
| e | a. eat | M(L) | di | dì | len |
| $\varepsilon$ | b. throw | M(L) | nin | nìn | len |
|  | c. look | M(L) | yi | yì | len |
|  | d. leave/resemble | M(L) | li | lı̀ | len |
|  | e. remove | MH | li | $1 \varepsilon$ | leqn |
|  | f. survive | MH | fli | $\mathrm{fl} \varepsilon$ | flecn |
|  | g . weave | H | tín | hlén | hléen |
|  | h. knead | H | shín | hlén | hléen |
|  | i. defecate | H | ní | lén | léen |
|  | j. tie on | L | tìn | hlèn | hlecn |
| a | k. scatter | L | kir | kàr | karn |
|  | 1. tremble | L | jir | jàr | jarn |
|  | m. hang | M(L) | tir | tàr | tarn |
|  | n. be insufficient | M(L) | dir | dàr | darn |

In Table 3.38, I show the set of /o/ verbs. The verb don (Table 3.38a) is the most unusual verb in Siamou. Not only does it seem to have two perfective forms (dòn and dénno), but its imperfective has a completely different onset: /k/. It is also the only Siamou verb where the tone patterns of the 'second' perfective (dénno) and the imperfective (kj́วŋn) are not what is predicted for M(L) verbs. ${ }^{126}$

The verb kwo (Table 3.38b) has an unusual onset change from $/ \mathrm{kw} /$ in the bare form to $/ \mathrm{kr} /$ in the imperfective. Some of the other changes that occur in this set are coda $/ 1 /$ metathesizing with the vowel and becoming part of the onset (Table 3.38d-e), and /1/-insertion either in coda position (Table 3.38f,g,j,k) or onset position (Table 3.38h,i,p).

[^83]Table 3.38 Irregular Siamou Verbs with /o/

| /o/Verbs |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| IMPF vowel | Gloss | Tone Melody | Bare Verb | PRFV | IMPF |
| 0 | a. go | M(L) | don | dòn (dénno) | kósŋn |
|  | b. kill | M(L) | kwo | kwò | kron |
|  | c. become/move | H | kwó | kwó | kwóon |
|  | d. train | M(L) | bol | blò | blon |
|  | e. age | M(L) | kol | klò | klon |
| $\varepsilon$ | f. dry | H | kwó | kwó | kwé ${ }^{\text {ln }}$ |
|  | g. hunt | H | tó | tó | tézln |
|  | h. remove | M(L) | kwo | kwò | klen |
|  | i. cry | M(L) | to | tò | hlen |
|  | j. begin | M(L) | jo | jò | $\mathrm{j} \varepsilon$ ln |
|  | k. fall | HL | wô | wô | wézln |
|  | 1. land/perch | H | twól | twél | twézln |
|  | m. sew | L | $\mathrm{k}(\mathrm{p}) \mathrm{o} \mathrm{l}$ | kwèl/kpèl | kweln/kpeln |
|  | n. take out of | MH | wol | wel | weln |
|  | o. hit | H | kól | kwél/kpél | kwézln/kpézln |
|  | p. do | M(L) | kwo | klغ̀ | klen |

The set of /e/ verbs is given in Table 3.39. For all of these verbs, the vowel changes to $/ \varepsilon /$ in the imperfective (and the perfective as well). These verbs all either have no coda or an $/ 1 / \mathrm{coda}$. For all of these verbs except Table 3.39o, the only irregularity is the vowel change. The verb tè in Table 3.39 o gains a glide $/ \mathrm{j} /$ in the onset and a $/ 1 /$ in the coda of the perfective and imperfective forms.

Table 3.39 Irregular Siamou Verbs with /e/

| /e/ Verbs |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| IMPF vowel | Gloss | Tone Melody | Bare Verb | PRFV | IMPF |
| $\varepsilon$ | a. bud | H | té | ṫ́ | té¢n |
|  | b. plant | H | kpé | kp ¢ | kpéen |
|  | c. move | H | gbé | gbé | gbéen |
|  | d. blow | H | fé | f ¢́ | f ¢́¢ |
|  | e. enter | H | dé | dé | dé $\varepsilon$ n |
|  | f. walk | H | kél | kél | ké $¢$ ln |
|  | g. leave alone | H | jél | jél | jéćln |
|  | h. give | L | tè | tı̀ | t $\varepsilon$ n |
|  | i. swing | L | fè | f | f $\varepsilon$ |
|  | j. wear out | L | dè | d ¢̀ | d $\varepsilon$ n |
|  | k. throw | M(H) | fe | f $\varepsilon$ | f $\varepsilon \varepsilon n$ |
|  | 1. lose | M(H) | jel | jel | jecln |
|  | m. cross | $\mathrm{M}(\mathrm{H})$ | kel | kel | kecln |
|  | n. pour | M | gbe | gbs | gben |
|  | o. wash/purify | L | tè | tyèl | tyeln |

This concludes the description of irregular verb forms in Siamou. These forms are interesting because they may show a connection between Siamou and other Kru languages. Marchese (1986) suggests that the imperfective in Kru might have contained an $/ 1 /$. The prevalence of $/ 1 /$ in many of the Siamou irregular forms could support this. She also suggests that proto-Kru may have marked imperfectives with an -e suffix on the verb. Many of the irregular forms seen above have imperfectives with a front vowel. This may be the remnants of an imperfective suffix. The fact that the perfective forms show this as well is unexpected, but it may be that some perfective forms are becoming irregular to match their imperfective counterparts. This would explain why some perfectives pattern with the bare verb and some pattern with the imperfective.

## 4. The Semantics of Perfective and Imperfective Aspect

This chapter examines the semantics of the perfective and imperfective in four easy steps. First, I show how aspect is formally distinguished from tense (4.1), drawing on the work by Reichenbach (1947) and Klein (1990). Then I hone in on the perfective/imperfective contrast (4.2), and in so doing compare and contrast two theories: that of Klein (1994) and Kratzer (1998). The next section (4.3) outlines the theory of lexical aspect, and in particular Vendler's (1957) event types. I then turn my attention to the diagnostics used to identify perfective and imperfective aspect (4.4), and conclude (4.5).

### 4.1 Distinguishing Tense from Aspect

Tense and aspect encode temporal relations. Tense locates an event in time: for example, 'before now' (i.e., past), 'now' (i.e., present), and 'after now' (i.e., future). Aspect characterizes the internal structure of an event (Comrie 1976): for example, 'ongoing' (e.g. imperfective, progressive) versus 'completed' (e.g., perfective, perfect). Section 4.1.1 introduces Reichenbach's (1947) theory of tense and aspect. Section 4.1.2 introduces Klein's (1994) theory, which is a further refinement of Reichenbach (1947) and Hornstein (1990).

### 4.1.1 Ordering Speech Time, Reference Time, and Event Time (Reichenbach 1947)

Reichenbach (1947) defines tense as an ordering relation between three time intervals: speech time (S), event time (E), and reference time (R). These are defined in (1).

1. a. Speech time: time at which an utterance is made
b. Event time: time at which the situation described by the utterance takes place c. Reference time: time about which an utterance makes a claim

Before Reichenbach (1947), it might have been supposed that tense only ordered two time intervals: the speech time (S), and the event time (E). If this were so, then past tense would order the event time before the speech time, present tense would have the two overlap, and future tense would order the event time after the speech time. These ordering relations are shown in Table 4.1. In the notation for this table, and in following tables, a comma (,) between two time intervals indicates overlap. A hyphen ( - ) indicates that the time interval on the left precedes that on the right.

Table 4.1 Tense: Naïve Version

| Tense | Ordering Relation | Notation | Example |
| :--- | :--- | :--- | :--- |
| a. past tense | Event time precedes Speech time | E - S | He came. |
| b. present tense | Event time overlaps with Speech time | E , S | He comes. |
| c. future tense | Speech time precedes event time | S - E | He will come. |

Two time intervals are inadequate, however, when dealing with more complex situations. Consider the following sentence (2).

## 2. Reference time Event time <br> [When I get there], [he will have left.]

The event (leaving) is most likely after the speech time. This means that when I say the sentence in (2), the event has not yet occured. However, that description does not completely capture the meaning of this sentence. Instead, there is a third time interval that is relevant-the time that I get there. Reichenbach (1947) was the first to point out the existence of this third time interval, and he called it the reference time. In this example, the reference time (when I get there) is after the speech time, so it is in the future. At the reference time, the event has already occurred. This means that the event time is before the reference time, or in the past relative to the reference time. This ordering of events, shown in (3), is called a future perfect.
3. future perfect $S-E-R$

In (2), the reference time (when I get there) is overtly stated, but often it is not. Listeners sometimes draw upon the discourse to determine what the reference time for a particular utterance is.

Reichenbach (1947) lists all the different ways that the intervals S, R, and E can be organized. They can precede or follow each other, and they can also overlap. This allows for thirteen possible configurations, which are all shown in Table 4.2. As Reichenbach himself was aware, this is more configurations than most (or all) languages distinguish. He proposed a total of nine tenses, which are listed in Table 4.2 (Reichenbach 1947:297). Two of these tenses include three possible ordering relations, which are discussed in more detail in 4.1.2.

Table 4.2 Tense according to Reichenbach (1947)

| Tense | Ordering Relation Notation | Example |
| :--- | :--- | :--- |
| a. simple present | S , R , E | He comes. |
| b. simple past | E , R - S | He came. |
| c. simple future | S - R, E | He will come. |
| d. present perfect | E - S , R | He has come. |
| e. past perfect | E - R - S | He had come. |
| f. future perfect | S - E - R | He will have come. |
|  | S , E - R |  |
| E - S - R | present prospective | S, R - E |
| h. past prospective | R - E - S <br>  <br>  <br>  <br> R - S , E <br> R - S E | He is going to come. |
| i. future prospective | S - R - E |  |

In the three 'simple' tenses and the present perfect, the reference time overlaps with the speech time or the event time. This makes it easy to ignore, but the reference time is always there. Without the reference time, it would be impossible to mark all the temporal contrasts that languages make. For example, the reference time is needed to distinguish the simple past (4a) from the present perfect (4b).
4. a. He came. E, R - S
b. He has come. E - S , R

Both the simple past and the present perfect refer to events that precede the speech time. The event of coming is in the past in (4a) and (4b). In the simple past, the reference time coincides with the event time, which means that the relevant time in the discourse is the past. In the present perfect, the reference time coincides with the speech time, which means that the relevant time in the discourse is the present. This is what leads to the current relevance reading of many present perfects in the world's languages.

In some of the ordering relations, all three time intervals (S, R, E) are distinct. For example, in the past perfect (5a) and future perfect (5b) the reference time overlaps with neither the speech time, nor the event time, but with some other time that is contextually determined.
5. a. He had come. E - R - S
b. He will have come. S - E - R
(could also be S, E-R or E-S - R)

Reichenbach (1947) is focused on the logic of time. Following up on the concepts introduced above, Hornstein (1990) explained how Reichenbach's (1947) ordering relations map onto the tense structure of natural language. His work paved the way for Klein (1994), who is also interested in tense as it relates to natural language semantics. His work is outlined in the next section.

### 4.1.2 Structuring the Ordering Relation (Klein 1994)

Reichenbach's (1947) system does not take aspect into consideration. Rather, he considers all of the ordering relations in Table 4.2 to be tense. Klein (1994) refines Reichenbach's theory by extracting two relations from the thirteen configurations, and calling them tense and aspect. Section 4.1.2.1 looks at tense, and section 4.1.2.2 looks at aspect.

### 4.1.2.1 Tense as an Ordering Relation between Speech Time and Reference Time

Klein (1994) defines tense as the relation between the reference time (R) and speech time (S). The reference time may precede the speech time (past tense), coincide with it (present tense), or follow it (future tense). These three possibilities are diagrammed in Table 4.3.

Table 4.3 Tense as the Relation between Speech Time and Reference Time

| Tense | Ordering Relation | Example |
| :--- | :--- | :--- |
| a. past tense | R - S | He came. |
| b. present tense | R , S | He comes. |
| c. future tense | S - R | He will come. |

Table 4.4 compares Klein's (1994) version of tense with the naïve version that we started out with, and with Reichenbach's (1947) version.

Table 4.4 Comparison of Tense Theories

| Tense | Naïve Version | Reichenbach (1947) | Klein (1994) | Example |
| :--- | :--- | :--- | :--- | :--- |
| a. past tense | E - S | E , R - S | R - S | He came. |
| b. present tense | E , S | S , R , E | R, S | He comes. |
| c. future tense | S - E | S - R , E | S - R | He will come. |

Klein's (1994) version resembles the naïve version, except that the $E$ is replaced with $R$. This is important because it means that we now understand past tense to indicate that a contextually relevant time (R) precedes the speech time (S), and not that a certain event (E) precedes the speech time (S).

Klein's (1994) version differs from Reichenbach's (1947) in that he considers the relation between $S$ and R independent from E, whereas Reichenbach (1947) looks at tense as a set of relations between S, R and E. Reichenbach (1947) did observe that the key relations in his set of tenses were the relation between S and R (i.e. the $\mathrm{S} / \mathrm{R}$ relation) and the $\mathrm{R} / \mathrm{E}$ relation, and that the S/E relation was largely irrelevant. It was only Klein (1994), however, who separated the S/R relation, which he calls tense, from the $\mathrm{R} / \mathrm{E}$ relation, which he calls aspect.

### 4.1.2.2 Aspect as an Ordering Relation between Reference Time and Event Time

Klein (1994) defines aspect as the relation between the event time (E) and the reference time (R). The relative ordering of $E$ and $R$ derives different aspectual meanings. E may precede $R$ (perfect aspect), coincide with it in various ways (perfective and imperfective aspect) or follow it (prospective aspect).

Table 4.5 Aspect as the Relation between Event Time and Reference Time

| Aspect | Configuration | Example |
| :--- | :--- | :--- |
| a. perfect aspect | $\mathrm{E}-\mathrm{R}$ | He has come. |
| b. perfective/imperfective ${ }^{127}$ | $\mathrm{E}, \mathrm{R}$ | He came./He was coming. |
| c. prospective aspect | $\mathrm{R}-\mathrm{E}$ | He is going to come. |

Klein's (1994) theory teases apart Reichenbach's (1947) nine "tenses" into a tense component (the $\mathrm{S} / \mathrm{R}$ relation), which includes past, present and future, and an aspect component (the R/E relation), which includes perfect, prospective, perfective and imperfective. The table below shows how these two theories compare. In Table 4.6a-c, we can see that Reichenbach's (1947) "simple tenses" all have the same kind of aspect: R and E overlap. Similarly, in all of Reichenbach's (1947) "perfect tenses," E precedes R, and in all of the "prospective tenses," R precedes E. This is true in both Reichenbach's (1947) system and Klein's (1994) system, but it is easier to see in Klein's system.

[^84]Table 4.6 Comparison of Reichenbach (1947) and Klein (1994)

| Label | Reichenbach (1947) | Klein (1994) |  | Example |
| :---: | :---: | :---: | :---: | :---: |
|  | Tense | Tense | Aspect |  |
| a. simple present | S, R, E | S, R | R, E | He comes. |
| b. simple past | E, R - S | R-S | R, E | He came. |
| c. simple future | S-R, E | S - R | R, E | He will come. |
| d. present perfect | E-S, R | S, R | E-R | He has come. |
| e. past perfect | E-R-S | R - S | E-R | He had come. |
| f. future perfect | $\begin{aligned} & \hline \text { S - E - R } \\ & \text { S, E - R } \\ & \text { E - S - R } \\ & \hline \end{aligned}$ | S - R | E-R | He will have come. |
| g. present prospective | S, R - E | S, R | R - E | He is going to come. |
| h. past prospective | $\begin{aligned} & \text { R-E - S } \\ & \text { R - S , E } \\ & \text { R-S - E } \end{aligned}$ | R-S | R-E | He was going to come. |
| i. future prospective | S-R-E | S - R | R-E | He will be going to come. |

Klein's (1994) theory emphasizes the fact that there is no direct relation between S and E . Rather, the relation between $S$ and $E$ is mediated by R. This is why the future perfect (Table 4.6f) and the past prospective (Table 4.6h) have more than one possible configuration. A future perfect only requires that $S$ precedes $R(S-R)$ and that $E$ precedes $R(E-R)$. Each of Reichenbach's (1947) three ordering relations for future perfect meets these two requirements. The ordering of $S$ and $E$ is not specified. This means that a future perfect is compatible with situations where the E precedes $S$, overlaps with $S$, or follows $S$, as shown in (6).

## 6. Configuration of Future Perfect

a. $\quad S-E-R$
b. $\quad S, E-R$
c. $\quad \mathrm{E}-\mathrm{S}-\mathrm{R}$

Reichenbach's (1947) theory only has room for three R/E relations (which Klein (1994) calls aspect): perfect, prospective and "simple." Klein (1994) introduces more fine-grained aspectual distinctions by allowing R and E to overlap in more than one way. This means that the aspect relation shown in Table 4.6a-c (i.e. R , E) is ambiguous. It includes both perfective and imperfective aspect. These aspects are discussed in great detail in 4.2.

Klein (1994) lists all the logically possible kinds of tense and aspect allowed by his theory. However, there is cross-linguistic variability in the ways that languages grammaticalize
tense and aspect. First of all, languages may combine more than one category. For example, Matthewson (2006) argues that St'át'imcets has a covert morpheme that is indeterminate between a past tense and a present tense reading. It simply specifies "non-future." Secondly, languages may not necessarily mark all the potential tense or aspect contrasts. In such cases, a particular tense or aspect construal may arise by default. ${ }^{128}$

The definition of aspect given in this section is sometimes called grammatical aspect to distinguish it from lexical aspect. Furthermore, Liao (2005) argues that grammatical aspect can be split into two kinds: temporal aspect, which includes perfect and prospective aspect, and viewpoint aspect, which includes perfective and imperfective aspect (see 3.3.1 for more information). In the next section I look first at grammatical aspect in more detail, and then at lexical aspect and its interaction with grammatical aspect in 4.3.

### 4.2 Distinguishing Perfective and Imperfective Aspect: The Theoretical Framework

The goal of any semantic inquiry is to determine the meaning of whatever part of a language is under investigation. For the purposes of this study, I use the framework of truth-conditional semantics (see, among many others, Davidson 1967, Heim and Kratzer 1998). In this framework, the meaning of an utterance is understood to be made up of truth and felicity conditions. Truth conditions are the facts about a situation that are required in order for an utterance to be judged true. In truth-conditional semantics, knowing the meaning of an utterance includes knowing the conditions under which that utterance is true (Heim and Kratzer 1998, among others). For example, the utterance in (7a) is judged to be true only if rain is falling at the time when the utterance is spoken (usually also at the same place where the utterance is spoken). The utterance in (7b) on the other hand, is judged to be true only if rain was falling at some time before the utterance was spoken.

## 7. a. It is raining. <br> b. It was raining.

We see from these examples that truth conditions are sensitive not only to the actual occurrence of the events themselves, but also to the relative timing of the events.

[^85]Along with truth conditions, felicity conditions are an important component of the meaning of an utterance. Felicity conditions are the facts about a situation that are required in order for an utterance to be judged appropriate in that situation. Sometimes the structure of a sentence affects its felicity conditions (Austin 1975, Matthewson 2004). For example, (8a) and (8b) have different structures. The sentence in (8b) is a clefted version of (8a), where the subject (your mom) is moved and put in focus.
8. a. Your mom answered the phone.
b. It was your mom who answered the phone.

Both of these sentences require the situation to be one in which your mom answered the phone, but (8b) also requires both the speaker and the addressee to already believe that someone answered the phone. This means that the question Did someone answer the phone? in (9) can be answered by (9a), but not by (9b), even though both of them are true. Therefore these sentences have similar truth conditions, but different felicity conditions (Matthewson 2004).
9. Did someone answer the phone?
a. Yes, your mom answered the phone.
b. \# Yes, it was your mom who answered the phone.

Felicity conditions are contextually determined, which explains why certain utterances are judged odd by native speakers even though they are not ungrammatical. Speakers provide judgements such as: "You could say that, I suppose, but it would have to be in a certain context." For example, the utterance in (10) is perfectly well constructed, but native English speakers reject it on pragmatic grounds because the most common interpretation is that the whole sweater was knit during the one minute that is $2: 00$, which is very unlikely to happen.
10. \# She knit a sweater at 2:00.

Often, constructing an appropriate context will change speakers' felicity judgments. For example, if I said I was talking about a mythical creature who did everything at extremely high speeds, then I could say, 'She built a house at 1:57, moved in at 1:58, wrote a book at 1:59 and knit a sweater at 2:00.' Felicity judgments provide important clues to meaning. For example, under normal circumstances (10) is judged infelicitous, but (11) is judged felicitous. This cannot be
because of the typical length of these events because both of them usually take more than a minute. This tells us that there is something different about the meanings of these kinds of utterances. I show in 4.3.1.8 that these differences have to do with lexical aspect.
11. She ate dinner at $2: 00$.

My goal in the next chapter is to establish the truth and felicity conditions for two Siamou morphemes: the low tone suffix that I have been calling perfective aspect, and the $-n$ suffix that I hav been calling imperfective aspect, and to see how closely they match commonly accepted truth and felicity conditions for perfectives and imperfectives. In a language, when a certain phonological form regularly occurs in an utterance in conjunction with a consistent meaning or set of meanings, we associate that form with the meaning(s) accompanying it. We like to give the form some kind of name or label to identify it. Since similar sets of meanings occur in many different languages, if the interpretation of a particular form in one language is similar to one that occurs in one or more other languages, it is useful, for the sake of cross-linguistic comparison, to give them the same name. Therefore, I will test whether or not the Siamou low tone suffix fits the general definition for perfective aspect, and whether or not the Siamou - $n$ suffix fits the general definition for imperfective aspect. I will also determine how closely the meanings associated with these forms match meanings associated with other forms with the same label in other languages. If the Siamou forms have meanings similar to forms in other languages that are called perfective or imperfective, it is sensible to give the Siamou forms the same name. This is not to say they are equivalent, but they have some basic features in common.

In order to reach the goal of establishing truth and felicity conditions, we need a way of formalizing concepts so that a language can be examined systematically. This is the purpose of a theoretical framework. It provides a vocabulary and allows us to define the terms perfective and imperfective. Using these definitions, we can make predictions about the behaviour of these forms, and then test these predictions by eliciting utterances, along with truth and felicity judgments, from native speakers of a language. These tests are called diagnostics. Over the next few pages, I discuss the theoretical framework that I adopt for my analysis of the Siamou verb forms that correspond to the perfective and imperfective.

Perfective and imperfective aspect both belong to the category of grammatical aspect. However, their deployment is sensitive to the lexical properties of the verbs that they combine
with. Therefore, in order to understand the perfective and imperfective, which are instances of grammatical aspect, we need to consider how lexical aspect interacts with grammatical aspect. In the following two subsections, I look first at two theories of grammatical aspect (4.2.1) and then at lexical aspect (4.2.2).

### 4.2.1 Theory 1: Event Time Fully Contained in Reference Time (Kratzer 1998)

This section explores two theories of grammatical aspect-from now on simply aspect - that are very closely related, but different. The first is from Kratzer (1998) (4.2.1.1) and the second from Klein (1994) (4.2.1.2). I show that while Klein and Kratzer have the same definition for imperfective aspect, Klein's definition of perfective aspect is slightly broader than Kratzer's (4.2.1.3), and I discuss the implications of adopting the second type of perfective.

For Kratzer (1998), perfective aspect arises when the event time is contained within the reference time $(\operatorname{time}(\mathrm{e}) \subseteq$ time $(\mathrm{r})$ ). Imperfective aspect arises when the reference time is contained within the event time (or, in other words, the event time extends past the boundaries of the reference time) $(\operatorname{time}(\mathrm{r}) \subseteq$ time (e) $)$. These two definitions are formalized in (12) below, from Kratzer (1998:17).
12. Kratzer's definitions of Perfective and Imperfective Aspect
a. $\quad$ Perfective: $\quad \lambda \mathrm{P}_{<1,<\mathrm{s}, \gg} . \lambda \mathrm{t}_{\mathrm{i}} . \lambda \mathrm{w}_{\mathrm{s}} . \exists \mathrm{e}_{1}(\mathbf{t i m e}(\mathbf{e}) \subseteq \mathbf{t} \& \mathrm{P}(\mathrm{e})(\mathrm{w})=1)$
b. $\quad$ Imperfective: $\lambda \mathrm{P}_{<1,<\mathrm{s}, \triangleright>} . \lambda \mathrm{t}_{\mathrm{i}} . \lambda \mathrm{w}_{\mathrm{s}} . \exists \mathrm{e}_{1}(\mathbf{t} \subseteq \mathbf{t i m e}(\mathbf{e}) \& \mathrm{P}(\mathrm{e})(\mathrm{w})=1)$

The definitions in (12) are shown schematically in (13). Perfective aspect is often described metaphorically as seeing a situation from the outside as a completed whole while imperfective aspect sees a situation from the inside, and often as incomplete or on going (Comrie 1976). These intuitive descriptions of perfective and imperfective aspect fall out from the definitions in (12). For perfectives, the reference time is outside the event time, and for imperfectives, the reference time is inside the event time.
13. a. The Perfective (Kratzer 1998)

b. The Imperfective (Kratzer 1998)


The perfective and imperfective are illustrated in (14) with English examples. The reference time is crucial to understanding the difference between a perfective (e.g. She painted the house purple.) and imperfective (e.g. She was painting the house purple.) (cf. Kamp and Rohrer 1983:253, Partee 1984, Hinrichs 1986, Klein 1994:28-29). For both utterances in (14), the event is the painting of the house and the reference time is the time the speaker was watching. In (14a) the event time covers a shorter time span than the reference time, so the understood meaning is that the whole house was painted while the speaker watched. In (14b), on the other hand, the reference time is inside the event time, so the painting started before the speaker began watching and continued after the speaker stopped watching. ${ }^{129}$
14. a. Illustrating the Perfective: She painted the house purple while I watched.

b. Illustrating the Imperfective: She was painting the house purple while I watched.


Kratzer's (1998) approach uses containment relations to define perfective and imperfective aspect: either R contains E (perfective) or E contains R (imperfective). Klein (1994) also uses containment relations to mark aspectual contrasts, with the additional component of overlap, or partial containment.

[^86]
### 4.2.2 Theory 2: Reference Time Partially Contained in Event Time (Klein 1994)

Klein's theory defines three possible ways that R relates to E , which are given in (15) (Klein 1994:99-100).
15.

| a. | R at E: | partial inclusion | R is partly contained in E. |
| :--- | :--- | :--- | :--- |
| b. | R INCL E: | full inclusion | R is completely contained in E. |
| c. | R EX E: | full exclusion | R is completely uncontained in E. |

R at E means that $R$ is partly contained within E. There are three subcases of this, listed and illustrated in (16).
16. $R$ at $E: R$ is partly contained within $E$.
a. $\quad \mathrm{R}$ overlaps with the left edge of E

b. $\quad$ overlaps with the right edge of $E$

c. $\quad \mathrm{R}$ completely contains E (i.e. extends past both the right and left edge) ${ }^{130}$


Full inclusion (15b) means that R is completely contained within E , as illustrated in (17).
17. R INCL $\mathrm{E}: \mathrm{R}$ is completely contained within E .


[^87]Full exclusion (15c) means that there is no overlap of R and E . There are two subcases of this, as shown in (18).

## 18. R EXE

a. $\quad \mathrm{R}$ follows E

b. $\quad$ precedes E


Klein (1994) uses the relations in (15) to define four aspect categories. He defines perfective aspect as R AT E and imperfective aspect as R INCL E. R EX E marks either perfect aspect if R follows E or prospective aspect if R precedes E . This is summarized in (19). From now on in this section, I only consider the perfective and imperfective.
19.
a. Perfective: R at E
b. Imperfective: R INCL E
c. Perfect: R EX E (precedence)
d. Prospective: R EX E (succession)

These definitions mean that the perfective has three possible orderings, as shown in (20).
20. The Perfective (R At E) (Klein 1994)
a.

b.

c.


The imperfective has one possible ordering (21).
21. The Imperfective (Klein 1994)


Klein (1994:103) argues that the sentence in (22) can be interpreted as a perfective where either $R$ overlaps with the right edge of $E$, or where $R$ contains $E$ (20b-c).
22. Mary slept.

In the context of a witness being questioned about everything he observed between 2:00 and 5:00, (22) is felicitous as a response either if Mary was asleep before 2:00 and slept until some time before 5:00 (23a), or if she fell asleep after 2:00 and slept until some time before 5:00 (23b) (Klein 1994:103). Klein is less sure about whether or not (22) is felicitous in the case where Mary falls asleep at some time after 2:00 and sleeps past 5:00 (23c), but concludes that it probably is. If Mary slept from before 2:00 until after 5:00, that would be expressed with an imperfective.
23. a. Scenario 1: Mary was asleep before 2:00 and slept until some time before 5.00.

Q: What happened between 2:00 and 5:00?
A: Mary slept.

b. Scenario 2: Mary fell asleep after 2:00 and slept until some time before 5:00.

Q: What happened between 2:00 and 5:00?
A: Mary slept.

c. Scenario 3: Mary fell asleep after 2:00 and slept until some time after 5:00 Q: What happened between 2:00 and 5:00? A: Mary slept.


If Klein's interpretation of this utterance in this context is correct, then it means perfective predicates in English sometimes denote events that have either an initial point or a final point that is outside the reference time (but not both).

### 4.2.3 Comparing Theory 1 and Theory 2

A comparison of Kratzer (1998) and Klein (1994) shows that their definitions of imperfective aspect are identical. The Kratzer/Klein imperfective is shown in (24).
24. The Imperfective (Kratzer (1998) and Klein (1994))


Kratzer (1998) and Klein (1994) have slightly different definitions of perfective aspect, however. Klein's perfective has three sub-types (25). The third sub-type is exactly the same as Kratzer's perfective in (13a).
25. The Perfective (Kratzer (1998) and Klein (1994))
a. Klein only

b. Klein only

c. Klein and Kratzer


Kratzer's (1998) definitions of perfective and imperfective aspect are repeated in (26) below. In (27) I show what Klein's (1994) definitions of perfective and imperfective aspect would look like using Kratzer's terminology. For the perfective, I took Kratzer's definition from (26a) and changed "time (e) $\subseteq \mathrm{t}$ " to "t $\circ$ time(e)." The imperfective remains the same.
26. Kratzer (1998)
a. $\quad$ Perfective: $\quad \lambda \mathrm{P}_{<1,<\mathrm{s}, \triangleright>} . \lambda \mathrm{t}_{\mathrm{i}} . \lambda \mathrm{w}_{\mathrm{s}} . \exists \mathrm{e}_{1}(\boldsymbol{t i m e}(\mathbf{e}) \subseteq \mathbf{t} \& \mathrm{P}(\mathrm{e})(\mathrm{w})=1)$
b. $\quad$ Imperfective: $\lambda \mathrm{P}_{<1,<\mathrm{s}, \triangleright>} . \lambda \mathrm{t}_{\mathrm{i}} . \lambda \mathrm{w}_{\mathrm{s}} . \exists \mathrm{e}_{1}(\mathbf{t} \subseteq \operatorname{time}(\mathrm{e}) \& \mathrm{P}(\mathrm{e})(\mathrm{w})=1)$
27. Klein (1994)
a. $\quad$ Perfective: $\quad \lambda \mathrm{P}_{<1,<\mathrm{s}, \downarrow>.} \lambda \mathrm{t}_{\mathrm{i}} . \lambda \mathrm{w}_{\mathrm{s}} . \exists \mathrm{e}_{1}(\mathbf{t} \circ \mathbf{t i m e}(\mathbf{e}) \& \mathrm{P}(\mathrm{e})(\mathrm{w})=1)$
b. $\quad$ Imperfective: $\lambda \mathrm{P}_{<1,<\mathrm{s}, \triangleright>} . \lambda \mathrm{t}_{\mathrm{i}} . \lambda \mathrm{w}_{\mathrm{s}} . \exists \mathrm{e}_{1}(\mathbf{t} \subseteq \boldsymbol{t i m e}(\mathbf{e}) \& \mathrm{P}(\mathrm{e})(\mathrm{w})=1)$

Notice that while Kratzer (1998) holds the relation (containment) constant, and reverses the order of the time intervals (R and E), Klein (1994) holds the time intervals constant and changes the relation (AT, INCL, EX). ${ }^{131}$ Both Klein and Kratzer define perfective and imperfective aspect in a way that contrasts them with each other. Kratzer draws the contrast by reversing the containment relation: either $R$ is (fully) contained in $E$ (imperfective) or $E$ is (fully) contained in $R$ (perfective). Klein also defines perfective and imperfective as a containment relation between $R$ and $E$. However, instead of reversing the containment relation to differentiate perfective and imperfective, he views the contrast as a difference between full and partial containment: either R is fully contained in E (imperfective) or R is partially contained in E (perfective).

### 4.2.4 What Theory 2 Predicts about Perfectives

By allowing a partial overlap of R and E, Klein (1994) broadens the meaning of the perfective. His theory predicts that cross-linguistically, perfectives should include certain types of events

[^88]that are not included in Kratzer's (1998) definition. In order to determine if this is so, it is important to pay attention to exactly how R and E overlap. In the diagrams in (25), the first and third perfectives ( $25 \mathrm{a}, \mathrm{c}$ ) have an event time that begins inside the reference time. In other words, the initial point of E is in R . The second and third perfectives ( $25 \mathrm{~b}-\mathrm{c}$ ) have an event time that ends inside the reference time. That is, the final point of $E$ is in R. Since the reference time is a time that is relevant in the discourse in some way, we expect the initial points of $(25 \mathrm{a}, \mathrm{c})$ to be relevant, and we expect the final points of $(25 b-c)$ to be relevant. Therefore, in order to determine which perfective aspect a morpheme represents, we need to test whether or not the initial and final points of E are inside R .

Testing the initial and final points of E is complicated by the fact that if an event described by a perfective-marked utterance lacks an initial or final point, this may be due to either lexical aspect or grammatical aspect. It may be difficult to tell which one, especially since they are interdependent. For example, if a perfective-marked activity event has no final point within the reference time, it may be because activities have no final points or it may be because the perfective in question refers to an event that has no final point within the reference time. My goal is not to untangle them, but simply to determine whether or not perfective aspect does sometimes refer to events that lack either an initial point or a final point within the reference time, as Klein (1994) predicts. (It can never lack both because that is an imperfective in both Klein (1994) and Kratzer's (1998) definitions.)

Some data accords better with Klein's (1994) broader meaning approach to the perfective. Allowing a perfective to lack a final point easily accounts for the inceptive reading that perfectives may have with punctual adverbs in languages such as Skwxwú7mesh (Bar-el 2005)). One potential problem with adopting Klein's perfective is a lack of solid evidence (besides the vague intuitions of native English speakers such as that given in (16-17)) that perfectives can lack initial points. However, this does not mean that such evidence does not exist. I have not found any satisfactory test for initial points at all, so this is an area of research that needs attention.

### 4.2.5 Conclusion

In this section, I have outlined my goals for establishing truth and felicity conditions for the identification of perfective and imperfective aspect. I have described and contrasted two different
accounts of the contrast between perfective and imperfective aspect: one from Kratzer (1998) and one from Klein (1994).

### 4.3 Lexical Aspect

This section is an overview of the theory of lexical aspect. Lexical aspect is concerned with what types of events predicates refer to, and the inherent temporal properties of those predicates.

### 4.3.1 Four Event Types: States, Activities, Achievements, Accomplishments (Vendler 1957)

 Vendler (1957) divided English verbs into four categories: states, activities, achievements and accomplishments. ${ }^{132}$ These are called event types. A few examples of these are given in (28).28. 

| a. | STATE | 1. | I am hungry. |
| :---: | :---: | :---: | :---: |
|  |  | ii. | I love chocolate! |
| b. | ACTIVITY | 1. | My nephew rode his bike. |
|  |  | ii. | The baby rolled around on the floor. |
| c. | ACHIEVEMENT | i. | Mom and Dad arrived in Los Angeles. |
|  |  | ii. | I lost my bus pass! |
| d. | ACCOMPLISHMENT | 1. | I ran three miles. |
|  |  | ii. | Tim drew a plan for the chicken hutch. |

Although lexical aspect is often explained with reference to different types of verbs, really it would be more accurate to say predicates, since not all predicates are verbal, but even non-verbal predicates have lexical aspect. Also, it is the whole predicate (the verb, if there is one, and its arguments and adjucts) that determines the event type, not just the verb.

### 4.3.2 Properties of Event Types: Stativity, Telicity and Durativity

Events can be classified, first of all, as either static (stative) or dynamic (non-stative) (Vendler 1957, Dowty 1979, Smith 1997). States are stative, and all the other event types (activities, accomplishments, and achievements) are dynamic. Statives "consist of a single undifferentiated period" (Smith, 1997:19), while dynamic verbs involve some kind of change over time. For example, know is stative while walk is dynamic. The state of knowing something is constant, without change, but the activity of walking requires putting one foot in front of the other, over

[^89]and over, and therefore involves change over time. ${ }^{133}$ Often adding an object to a verb phrase will change the event type. For example, running is an activity, but running three miles is an accomplishment.

Event types may be further classified as atelic (with no well defined endpoint) or telic (with a well defined endpoint). Atelic events are never actually completed; they just end. An example of this is a running event. If a person begins running and runs for any amount of time and then stops, they have run. Telic events, on the other hand, must be completed. An example of this is falling. If a person begins falling, and continues to fall for some (probably short) amount of time and then stops before they finish their fall, they can not be said to have fallen. This is because the telic event of falling must be completed in order to have occurred. States and activities are atelic and achievements and accomplishments are telic.

The third, and final, parameter classifies verbs according to whether they are durative or instantaneous (Smith 1997). This has to do with whether an event takes up a span of time, or occurs in an instant. A durative event could be, for example, running a race, and an instantaneous event, crossing the finish line, or sneezing. Achievements are instantaneous while states, activities and accomplishments are durative.

The four event types all have different values for these three features, as shown in Table 4.7 (adapted from Smith 1997:20). I am mainly interested in the first two of these features: I need to consider states separately from dynamic predicates, and I need to make use of the telic/atelic contrast when I look at culmination entailments in the perfective later in this section. The third parameter, durative/instantaneous, serves to distinguish accomplishments and achievements, but this contrast is not relevant to the concerns of this chapter.

Table 4.7 Event Types (Smith 1997)

| Situation Type | Static/Dynamic | Telic/ <br> Atelic | Durative/ <br> Instantaneous | Examples |
| :--- | :--- | :--- | :--- | :--- |
| a. State | Static | Atelic | Durative | be tall, love rice |
| b. Activity | Dynamic | Atelic | Durative | ride a bike, run |
| c. Achievement | Dynamic | Telic | Instantaneous | reach the top, lose a bus pass |
| d. Accomplishment | Dynamic | Telic | Durative | run three miles, build a house |

[^90]
### 4.3.3 Verb Class Templates (Rothstein 2004)

Rothstein (2004) proposes a set of verb class templates for these four event types using three operators: DO, BECOME and CUL(MINATE), as shown in Table 4.8.

Table 4.8 Verb Class Templates (Rothstein 2004)

| Situation Type | Template | Examples |
| :--- | :--- | :--- |
| a. State | $\lambda \mathrm{e} . \mathrm{P}(\mathrm{e})$ | be tall, love rice |
| b. Activity | $\lambda \mathrm{e} .(\mathrm{DO}(\mathrm{P}))(\mathrm{e})$ | ride a bike, run |
| c. Achievement | $\lambda \mathrm{e} .(\mathrm{BECOME}(\mathrm{P}))(\mathrm{e})$ | reach the top, lose a bus pass |
| d. Accomplishment | $\left.\left.\begin{array}{l}\lambda \mathrm{e} . \exists \mathrm{e}_{1} \exists \mathrm{e}_{2}\left[\mathrm{e}=\left(\mathrm{e}_{1} \cup \mathrm{Ue}_{2}\right) \wedge(\mathrm{DO}(\mathrm{P}))\left(\mathrm{e}_{1}\right)\right. \\ \\ \end{array} \mathrm{\Lambda( } \mathrm{\operatorname{CUL}(P))(e}_{2}\right)\right]$ run three miles, build a house |  |

This is based on Dowty's (1979) work, but Rothstein's templates are framed within a neoDavidsonian approach to event semantics in which verbs are predicates of events.

In this notation, e stands for event and P for predicate. The $\lambda$ is a notational tool that serves to introduce a variable (here, an event). States are bare predicates. Activities are predicates under the scope of the operator DO. Achievements are predicates under the scope of the operator BECOME, and accomplishments are predicates that are composed of two sub-events. The first sub-event predicate is under the scope of a DO operator and the second is under the scope of a CULMINATE (CUL) operator.

The operator DO marks the predicate as being under the control of an agent (Dowty 1979:118). The operator BECOME marks a predicate as going from not being the case to being the case. This is written formally in (29a), and diagrammed in (29b). BECOME $\varphi$ is true at an interval in between an interval where $\neg \varphi$ is true and an interval where $\varphi$ is true.
29. ${ }^{134}$ a. $[\operatorname{BECOME} \varphi]$ is true at $I$ iff there is an interval $J$ containing the initial bound of $I$ such that $\neg \varphi$ is true at J and there is an interval K containing the final bound of I such that $\varphi$ is true at K (Dowty 1979:140).
b. $\quad[\neg \varphi$ is true $]\{\operatorname{BECOME} \varphi$ is true $\}[\varphi$ is true $]$.

The operator CUL is defined by Rothstein as the final minimal event in an incremental process (Rothstein 2004:106)

[^91]The BECOME and CULMINATE operators mark an event type as containing either an initial or a final point. BECOME may mark both, and CULMINATE, by virtue of its definition, marks only final points. This means that states and activities do not have any inherent initial or final points because they do not contain BECOME or CULMINATE operators. Achievements have both an initial and a final point because they consist only of a single BECOME operator. (Since they are instantaneous, their initial point and their final point are the same.) Accomplishments have a final point, due to the CUL operator, but no initial point, since they begin with a DO operator.

### 4.3.4 Cross-Linguistic Variation in Event Types

The event types described so far are not universal (von Fintel and Matthewson, 2008). Even event classes with the same name may not have exactly the same characteristics from one language to the next. For example, accomplishments in English are not quite the same as accomplishments in Skwxwú7mesh (Bar-el 2005).

Bar-el (2005) shows that Skwxwú7mesh has the following classes of verbs: inchoative states, activities, accomplishments, and achievements. Kiyota (2008) argues that Sənčá日ən and Japanese have all of these event types plus homogenous states. These are listed in Table 4.9.

Table 4.9 Sənčá $\theta ə n$ and Japanese Situation Types

| Situation Type | Template |
| :--- | :--- |
| Homogenous State | $\lambda \mathrm{e} . \mathrm{P}(\mathrm{e})$ |
| Inchoative State | $\lambda \mathrm{e} . \exists \mathrm{e}_{1} \exists \mathrm{e}_{2}\left[\mathrm{e}=\left(\mathrm{e}_{1} \mathrm{Ue}_{2}\right) \wedge(\mathrm{BECOME}(\mathrm{P}))\left(\mathrm{e}_{1}\right) \wedge \mathrm{P}\left(\mathrm{e}_{2}\right)\right]$ |
| Activity | $\lambda \mathrm{e} .(\mathrm{DO}(\mathrm{P}))(\mathrm{e})$ |
| Achievement | $\lambda \mathrm{e} .(\mathrm{BECOME}(\mathrm{P}))(\mathrm{e})$ |
| Accomplishment | $\lambda \mathrm{e} . \exists \mathrm{e}_{1} \exists \mathrm{e}_{2}\left[\mathrm{e}=\left(\mathrm{e}_{1} \mathrm{U} \mathrm{e}_{2}\right) \wedge(\mathrm{DO}(\mathrm{P}))\left(\mathrm{e}_{1}\right) \wedge(\mathrm{CUL}(\mathrm{P}))\left(\mathrm{e}_{2}\right)\right.$ |

Homogenous states are the same as Rothstein's states described in Table 4.6. Inchoative states, on the other hand, have two sub-events: a $\operatorname{BECOME}(\mathrm{P})$ event and a simple P event (i.e. an inchoative sub-event and a stative sub-event). In Skwxwú7mesh, inchoative states sometimes have an inchoative interpretation and sometimes have a stative interpretation. When they are perfective, they can have both readings (30a). When they are imperfective, they only have a stative reading (30b).
30. a. chen t'ayak'.
inchoative reading: I got angry/upset. stative reading: I am angry.
b. chen t'a-t'ayak'.
(from Bar-el 2005:273 ex. 67a)
1S.SG REDUP-angry stative reading: I am angry. (inchoative reading (unavailable): I got angry/upset.)

Bar-el (2005) argues that the reason the stative interpretation arises with the imperfective of inchoative states is that the reference time is contained within the state sub-event, and not the inchoative sub-event (Bar-el 2005:274).

### 4.3.5 Teasing apart the Contribution of Lexical Aspect and Grammatical Aspect

There are two main reasons why lexical aspect must be taken into consideration in an analysis of grammatical aspect. The first is that the event type of the verb affects the interpretation of an aspectual morpheme (Smith 1997). For example, the perfective of an activity verb may have different implications or entailments than the perfective of an accomplishment verb. Thus, the diagnostics that allow us to characterize perfective and imperfective aspect are sensitive to lexical aspect. The second reason that one must factor in lexical aspect when developing an analysis of grammatical aspect is that grammatical aspect and lexical aspect have overlapping properties. For example, a verb phrase may be construed as having an endpoint because that is part of its meaning (e.g. achievement verbs), or because of its grammatical aspect (e.g. it is marked with perfective aspect). For this reason, we need to control for event type in order to avoid accidentally ascribing properties to a grammatical morpheme that are actually properties inherent to specific lexical aspect categories.

Often languages do not overtly specify tense or grammatical aspect (see Marchese 1986, Déchaine 1993, Lin 2003, Bohnemeyer and Swift 2004, Matthewson 2006, among others). In these cases, temporal and aspectual interpretations may arise by default. A number of authors (e.g. Lin 2003, Bohnemeyer and Swift 2004) have observed that a lexical aspect contrast (telic/atelic) can result in default grammatical aspect. Bohnemeyer and Swift (2004) argue that the inherent lexical aspectual properties of verbs may cause them to be interpreted as either perfective or imperfective without any overt perfective or imperfective marking. Specifically, telic verbs have a default perfective interpretation, and atelic verbs have a default imperfective
interpretation. Such interpretations are derived by implicature. In languages such as German, the implicature is easily cancelled, allowing a telic predicate to have an imperfective interpretation. In other languages, such as Inuktitut, the implicatures have undergone pragmatic strengthening and have become entailments, which means they can no longer be cancelled (Hopper and Traugott 1993, Bohnemeyer and Swift 2004). Bohnemeyer and Swift (2004) describe default aspect as in (31).
31. Default aspect is merely the preferred or exclusive aspectual interpretation of predicates not overtly marked for aspect in languages in which aspect marking and aspectual reference depend on event realization.

From this we see that lexical aspect properties of verbs can result in both default tense interpretations and default grammatical aspect interpretations.

It is also possible for grammatical aspect to have default tense interpretations. Smith (2008) shows that the default temporal interpretation of perfectives is past, and the default temporal interpretation of imperfectives is present. Clearly, lexical aspect, grammatical aspect and tense interact in a variety of ways. Just because a certain morpheme has a certain temporal or aspectual interpretation, it is not immediately clear that that is the lexical meaning of that morpheme, since the meaning may be a pragmatic default.

In chapter 5, I look at the factative effect, which is a particular type of default tense common in Niger-Congo languages based on lexical aspect properties of verbs (i.e. dynamic vs stative) (Déchaine 1993).

### 4.4 Distinguishing Perfective and Imperfective Aspect: The Diagnostics

The goal in this section is to provide a set of tests that can be used to show that a morpheme encodes perfective aspect (4.4.1) and a set of tests that can be used to show that a morpheme encodes imperfective aspect (4.4.2).

### 4.4.1 Tests for Perfective Aspect

First I look at tests for perfective aspect. Since my main purpose is to test Siamou grammatical aspect, the tests are chosen and tailored to suit Siamou. In particular, I spend some time on tests to show that a morpheme is not a past tense. This is relevant to Siamou because the Siamou perfective almost always has a past interpretation. In other languages, this may not be an issue.

In general, however, most of the tests are applicable to other languages and have been used before.

A summary of the diagnostics introduced in this section is given in Table 4.10. First, I discuss a common tendency of perfective aspects to have a past interpretation (which turns out to be very strong in Siamou) and describe three diagnostics that show that a morpheme that might at first glance look like a past tense is not actually a past tense. Then I look at four diagnostics that, when taken together, show that, despite the fact that this morpheme is compatible with past tense construals, it is in fact a perfective aspect. This requires some discussion of tests for initial and final points, since they are integral to the definition of perfective. I argue that at least two of Klein's (1994) perfectives, namely those which code the overlap of E with the right edge (final point) of $R$ (16a), and the inclusion of $E$ within $R$ (16c), are represented by the Siamou perfective morpheme, based on tests for final points. However, I am not able to determine if the overlap of E with L-edge (initial point) of R is attested in Siamou (16b) because I have not yet been able to find a satisfactory initial point test.

Table 4.10 Perfective Diagnostics

| Diagnostic | What this Tells Us |  |
| :---: | :---: | :---: |
| consistent with: | Past | Perfective |
| TESTING FOR ORDERING RELATION |  |  |
| 1a. default past interpretation | $\checkmark$ | $\checkmark$ |
| TESTING FOR PAST TENSE |  |  |
| 2a. acceptable in non-past contexts | $x$ | $\checkmark$ |
| 2 b . not required in past contexts | $x$ | $\checkmark$ |
| 2c. combines with past | X | $\checkmark$ |
| TESTING FOR PERFECTIVE ASPECT |  |  |
| 3a. incompatible with imperfective | X | $\checkmark$ |
| 3 b . event time contained in temporal adverbial boundaries | X | $\checkmark$ |
| 3c. event non-continuation clause (tests for termination entailment) | X | $\checkmark$ |
| 3d. event completion clause (tests for culmination entailment) | $x$ | $\checkmark^{136}$ |
| 3e. no interruption interpretation (tests for culmination entailment) | $x$ | $\checkmark^{137}$ |
| 3 f . inceptive reading with punctual adverbials | X | $\checkmark$ |

[^92]
### 4.4.1.1 Perfective Aspect Has a Default Past Interpretation

It is a common characteristic of perfective aspects cross-linguistically to have a past interpretation by default (Smith 1997:99). ${ }^{138}$ Some languages with this kind of perfective include Navajo, and many members of the Kru language family, including Siamou, as I show in 4.5 (Marchese 1986, Smith 1997). The default past interpretation can be explained by something which Smith (2008) calls the Bounded Event Constraint ${ }^{139}$, which states that bounded events can not be located in the present. Most perfectives have initial and final points within the reference time (i.e. a Kratzer-type perfective). This means they are bounded. Events in the present are (usually) unbounded because the present is taken to be a single moment and a bounded event can not usually fit inside a single moment (Bennett and Partee 1978; see also Smith 2008, Kamp and Reyle 1993:536-537). ${ }^{140}$ For example, we know that the whole event of building a house takes more than a moment. It makes sense that one can not build a complete house at this exact instant in the present. Therefore, given the choice of understanding an event of house-building to have occurred in the past, or at this exact instant, listeners will be much more likely to interpret the event in the past. This is why perfectives often have a default past interpretation. Therefore, if in a language we find a morpheme with a past interpretation, it could be that it is a past tense, or it could be that it is a perfective aspect with a default past interpretation.

### 4.4.1.2 Perfective Aspect Need Not Be Construed as Past

Without additional contextual information, a morpheme that has a past interpretation in an out-of-the-blue context is just as likely to be a marker of past tense as it is to be a marker of perfective aspect. Therefore, the next step in testing whether or not a morpheme is perfective aspect is to verify that it is not past tense. That is the focus of this and the following two diagnostics. These diagnostics on their own are not conclusive. However, if all of them are considered together, they strengthen each other, and may be considered strong evidence. The first diagnostic has to do with whether or not the morpheme in question can ever be useevents that do not have a past interpretation. If it usually has a past interpretation, and if that interpretation does not occur in all contexts, it may in fact be a marker of perfective aspect. This

[^93]does not necessarily mean that it is a marker of perfective aspect because it is possible for a past tense to occur in non-past environments, as is the case with conditionals in some languages.

### 4.4.1.3 Perfective Aspect Is Not Required in Contexts That Force a Past Construal

The second test to show that a morpheme is not past tense has to do with whether or not there are events with a past interpretation that do not use this morpheme. This is also not an airtight test because even a true past tense marker may not be required for all past contexts. For example, the English historical present (as in (32)) is used for past contexts, even though it does not have past morphology. However, depending on the nature of the other past-like elements in the language in question, this may help show that a morpheme is not past tense.
32. So this morning the cops stop by my house, and they want to know if I've seen any suspicious activity.

### 4.4.1.4 Perfective Aspect Combines with Past Tense

The final test to show that a morpheme is not past tense is whether or not it can combine with past morphology. This test is stronger than the previous two. First of all, if other past morphology exists in the language, the role of past tense marker may already be taken, which means the morpheme in question is likely not past tense. ${ }^{141}$ Secondly, we would not expect the past tense to be marked twice by two distinct morphemes in one utterance. If one morpheme is already marking past, the other one is likely doing something else.

### 4.4.1.5 Perfective Aspect Does Not Combine with Imperfective

If a grammatical morpheme is a perfective aspect, it is expected that it can not combine with imperfective morphology. ${ }^{142}$ Perfectives and imperfectives are expected to be in complementary distribution because by definition, an utterance cannot have both perfective and imperfective aspect. ${ }^{143}$

[^94]
### 4.4.1.6 Perfective Has Event Time Contained in Temporal Boundary of Adverbial Modifier

The remaining three tests (4.3.1.6-4.3.1.8) involve determining whether or not a morpheme marks events as having an initial point, a final point or both (Klein's (1994) three types of perfectives). One test is to show that an event has both an initial and a final point within the reference time, the second shows an utterance to have a final point within the reference time, without giving any information on whether or not it has an initial point, and the third shows an utterance to lack a final point within the reference time. The third test has been used as a test for initial points (Bar-el 2005), but I argue that it makes more sense to use it as a test for final points. Without a dedicated initial point test, I find no way to conclusively determine if Klein's (1994) second type of perfective exists (the one with a final point but no initial point, shown in (16b)).

The same morpheme can potentially mark all three types of perfective, depending on factors such as context or the event type of the verb. This means, for example, that just because a test shows a morpheme to have a final point in one context does not mean it has a final point in all contexts. However, if a morpheme marks one or more of Klein's (1994) three types of perfective, calling that morpheme perfective is warranted.

In the next few paragraphs I give a summary of the initial/final point tests. The third test, the inceptive reading test, is the most controversial, so I spend extra time discussing it.

The first of these tests is a test for initial and final points. Its purpose is to show that in at least some cases (and probably in most cases) utterances marked with this morpheme are characterized by having an event time that is completely contained within a reference time, which is a perfective with an initial and a final point (shown in 16c). I look at utterances with temporal adverbial phrases that mark the reference time and show that an event described by a verb inflected with this morpheme is understood to occur completely within the time frame given by the adverbial phrase. For example, in the sentence She painted the house purple while I watched, the temporal phrase while I watched provides the reference time. English speakers understand the event painting the house purple to be completely contained within the time frame of the period defined by the phrase while I watched. That is to say, the whole event of painting was completed while I watched. If the Siamou morpheme in question has this property, it must be a perfective (in both Kratzer's (1998) and Klein's (1994) theories).

### 4.4.1.7 Perfective May Have Termination or Culmination Entailments

The second endpoint test is for final points, and it is made up of three subtests. Its purpose is to determine whether or not perfective-marked verbs indicate eventualities that have final points within the reference time. There are two types of final points: termination and culmination. Termination refers to the cessation of an event for any reason. For example, if I am running, and I stop running, the running event has terminated. If I am building a house, and I stop building a house for any reason, the house building event has terminated. It could be that I finished the house, and that is why I stopped, or it could be that I ran out of money and had to abandon the project. Culmination, on the other hand, refers to the cessation of an event after it has reached its natural endpoint. A natural endpoint is the point at which an event is completed. For example, the natural endpoint of running three miles is the point at which I have run three miles (completed), and not the point at which I get a cramp and have to stop (terminated). If I am building a house, the natural endpoint is the point at which the house is done. If I run out of money and stop building, the house building event never reaches its natural endpoint.

To test whether perfective-marked verbs indicate eventualities that have final points within the reference time, we can test utterances for termination entailments (subtest a) and for culmination entailments (subtests band c). ${ }^{144}$ The reason we need both kinds of tests is that some situation types (such as activities) do not have natural endpoints and can not have culmination entailments, but only termination entailments. ${ }^{145}$ It is a common (but not mandatory) ${ }^{146}$ characteristic of perfective aspect for telic verbs (accomplishments and achievements) to have a culmination entailment in the perfective (Dowty 1977, Smith 1997). In other languages, they may only have a termination entailment (Bar-el 2005). Atelic verbs, on the other hand sometimes have a termination entailment in the perfective (as in Dëne Sųtiné (Bar-el 2005)), but not always (as in English). This cross-linguistic variation supports Klein's (1994) definition of perfective aspect because it allows perfectives to lack final points. If perfectives were required to have final points, we would expect that all event types that are perfective-marked would minimally have termination entailments.

In order to test whether or not a certain utterance has a termination entailment, the utterance is conjoined with a clause asserting that the event is still in progress (Bar-el 2005). If

[^95]this is felicitous, there is no termination entailment. If it is not, there is a termination entailment. For example, the utterance in (33a) has to mean that I am no longer writing my thesis because an attempt to assert that the writing is still in progress (33b) is infelicitous.

In a similar way, to test for a culmination entailment, the utterance is conjoined with a clause asserting that the event is not finished (subtest b) (Bar-el 2005). If it is felicitous, there is no culmination entailment. If it is not, there is a culmination entailment. Therefore, the utterance in (33a) must mean that the thesis is complete because an attempt to assert that it is not finished is infelicitous (33c).
33. a. I wrote my thesis.
b. \# I wrote my thesis and I'm still writing it.
c. \# I wrote my thesis but I'm not finished yet.

ACCOMPLISHMENT
TERMINATION ENTAILMENT
CULMINATION ENTAILMENT
In English, both accomplishments (as shown in (33)) and achievements (as shown in (34) have a culmination entailment.
34. a. The train arrived at the station.

ACHIEVEMENT
b. \# The train arrived at the station and it's still arriving.

TERMINATION ENTAILMENT
c. \# The train arrived at the station but is not there yet.

CULMINATION ENTAILMENT
Activities in English do not have termination entailments, and, since they do not have natural endpoints, they can not have culmination entailments. This is shown in (35). ${ }^{147}$
35. a. He danced all night. ACTIVITY
b. He danced all night and he's still dancing. NO TERMINATIONENTAILMENT c. ${ }^{148}$ He danced all night and he's not finished dancing yet.

## NO CULMINATION ENTAILMENT

In at least one language, activities do have termination and culmination entailments in the perfective: Dëne Sųliné (Wilhelm 2003). The examples in (36) show that the activities of jumping and talking/praying have ended. It is infelicitous to add a phrase saying that the event is

[^96]still in progress (36a), or not finished (36b). If this is the case, then this means that at least one of Klein's three perfectives is not possible in Dëne Sųliné: the one in which the event time extends past the end of the reference time.
36. Dëne Sųliné Perfective-Marked Activity Predicates (from Wilhelm 2003:6-7, ex 19a, 22)
a. \# yághelgus-ú Paṭú yálgus yá\#ghe-l-gus ?' $\quad$ Paṭú yá\# $\varnothing$-l-gus th\#PRFV-CL-jump and still th\#IMPF-CL-jump intended reading: He jumped and he's still jumping. TERMINATION ENTAILMENT

$\begin{array}{llll}\text { b. }{ }^{149} & \text { \# yaghilti } & \text { kúlú } & \text { Panast'e-íle } \\ & \text { ya\#ghe-i-1-ti } & \text { kúlú } & \text { Panast'e-íle } \\ & \text { th\#PRFV-1s-CL-talk/pray } & \text { but } & \text { 1s.finish-not } \\ & \text { intended reading: I talked/prayed but I didn't finish. }\end{array}$

In Thai, perfectives of accomplishment verbs do not have culmination entailments. They do, however, still have termination entailments. ${ }^{150}$ In (37), perfective aspect is marked by $k^{h} \hat{u} n$. An utterance asserting that Surii composed a poem and that he is still composing them is not felicitous (37a), but asserting that Surii composed a poem and that he is not finished is felicitous (37b). Thus, the Thai perfective requires that the event ends, but not that it finishes (Koenig and Muansuwan 2000). This suggests that in Thai, Klein's perfective that allows a reading in which the event continues past the end of the reference time is not available for accomplishment verbs. It may or may not be available for activities.

## 37. Thai Perfective-Marked Accomplishments

a. \# Surii tè $\varepsilon$ k kloon sǎam bòt $\mathbf{k}^{\mathrm{h}} \hat{\mathbf{u} n} 1 \varepsilon$ ? kamlan tè $\varepsilon y$ jùu Surii write poem three CLASS ascend and PROG compose CONT Surii composed three poems and is still composing them. (Koenig and Muansuwan 2000:158 example (18b), in Bar-el 2005:215 example (25b)) TERMINATION ENTAILMENT

[^97]b. Surii tè $\varepsilon$ k kloon $\mathbf{k}^{\mathrm{h}} \hat{\mathbf{u}}$ n tè $\varepsilon$ jay mâj sèd Surii compose poem ascend but still not finish Surii composed a/the poem, but has not finished it yet. (Koenig and Muansuwan 2000:157 example (14), in Bar-el 2005:214 example (24)) NO CULMINATION ENTAILMENT

A summary of the patterns listed above is given in Table 4.11.

Table 4.11 Termination and Culmination Entailments Cross-Linguistically ${ }^{151}$

| Language | Activities | Accomplishments |  |
| :--- | :--- | :--- | :--- |
|  | Termination Entailment | Culmination Entailment | Termination Entailment |
| Dëne Sųtiné | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| English | $\boldsymbol{x}$ | $\checkmark$ | $\checkmark$ |
| Thai | - | $\mathbf{x}$ | $\checkmark$ |

Another way of testing for culmination entailments is to see if an event has an interruption interpretation if it is followed by another event that has the potential to interrupt it (subtest c). ${ }^{152}$ If it does, there is no culmination entailment. For example, in (38) the first event is washing clothes and the second is the mother calling. For an imperfective (38a), the first event is interpreted as being interrupted by the second event, so there is no culmination entailment. For the perfective (38b), the washing event is understood to be complete at the time the mother calls. This suggests (but does not prove) that it has a culmination entailment.
38. a. She was washing clothes and then her mother called.
context: In the middle of washing clothes, her mother called. inappropriate context: She was already finished washing clothes when her mother called.
b. She washed clothes and then her mother called.
context: She was already finished washing clothes when her mother called. inappropriate context: In the middle of washing clothes, her mother called.

[^98]
### 4.4.1.8 Perfective Has an Inceptive Reading with Punctual Adverbs

The third endpoint test has to do with punctual adverbs. Smith (1997:65) observes that sometimes certain perfective-marked event predicates have an inceptive reading when they occur with a punctual adverbial. This means that the event denoted by the predicate is understood to begin within the (extremely brief) timeframe denoted by the punctual adverb, and not that the whole event is contained within that time frame. ${ }^{153}$ Examples of predicates with an inceptive reading are given in (39).
39. a. We ate dinner at 1:00.
b. The senior girls basketball team played at 4:30.
c. When the bell rang, she swam. (context: a swimming competition)

It is understood that the whole meal was not eaten in one minute in (39a), nor did the basketball team only play for one minute in (39b), nor did the swimmer only swim while the bell rang in (39c). Instead, dinner began at 1:00 in (39a), the playing began at 4:30 in (39b), and the swimming began when the bell rang in (39c).

Various theories have been put forward to explain what brings about the inceptive reading (see Smith (1997) and Bar-el (2005), among others). Regardless of what causes this reading, the fact is that if perfectives are defined strictly as having the whole event time completely contained within the reference time, it is an anomaly that is either seen as an exception to the rule (Smith 1997) or resolved with a shift operation (from Rothstein 2004) that turns a durative event into an instantaneous event so it can fit inside the reference time (Bar-el 2005). In Klein's theory, however, it is simply one of the manifestations of the perfective. Both theory 1 and theory 2 (from 4.2) have to explain why the inceptive reading comes about, but only Klein's theory predicts it to be possible.

Smith (1997) explains that if the event is durative and the reference time has a very brief duration (for example, when the bell rang), then it is not possible for the event to be contained in such a short reference time. The inceptive reading arises simply because it is much more plausible (Smith 1997:65). In her view, activities and accomplishments have an inceptive reading with a punctual adverb because they are durative, but achievements do not have an inceptive

[^99]reading because they are not durative. Instead, achievements have an instantaneous reading. Her views are summarized in Table 4.12.

Table 4.12 Punctual Adverbs according to Smith (1997)

| Event Type | Criterion | Outcome (reading) |
| :--- | :--- | :--- |
| a. activity | durative | inceptive |
| b. accomplishment | durative | inceptive |
| c. achievement | not durative | instantaneous |

Bar-el (2005) argues that durativity can not be the cause of the inceptive reading because accomplishments are durative, but they are usually infelicitous with a punctual adverb in English. For example, the utterance in (40) is infelicitous. The inceptive reading is not possible with these accomplishments.
40. ${ }^{154}$ \# Mary painted a picture at midnight.

Bar-el (2005) argues that only event types with initial points are felicitous with punctual adverbials (either with an inceptive or instantaneous reading) and uses this as a test for inherent initial points (i.e. initial points that are part of the make-up of an event type). ${ }^{155}$ She states that activities and achievements are compatible with punctual adverbials because they have inherent initial points. Activities (41a) get an inceptive interpretation because they are durative, and achievements (41b) get an instantaneous interpretation because they are instantaneous (i.e. they would have an inceptive reading, except that they end too quickly). ${ }^{156}$ Accomplishments (41c), on the other hand, do not have initial points, and are therefore infelicitous with punctual adverbs.
41. ${ }^{157}$ a. He pushed the cart at noon. ${ }^{158}$
b. The clock struck at noon.
c. \# She knit a sweater at noon.

ACTIVITY: inceptive
ACHIEVEMENT: instantaneous
ACCOMPLISHMENT: infelicitous

[^100]This is summarized in Table 4.13.

Table 4.13 Punctual Adverbs according to Bar-el (2005)

| Event Type | Criterion | Outcome (reading) |
| :--- | :--- | :--- |
| a. activity | has initial point | felicitous (inceptive) |
| b. achievement | has initial point | felicitous (instantaneous) |
| c. accomplishment | no initial point | infelicitous |

Since Bar-el (2005) claims that the punctual adverb test shows that activities have an inherent initial point, she has to change the template for activities from (42a) to (42b) so that they have initial points. (Recall that DO operators do not provide initial or final points, and BECOME operators provide initial points.)
42. a. $\lambda \mathrm{e} .(\mathrm{DO}(\mathrm{P}))(\mathrm{e})$
b. $\quad \lambda \mathrm{e} . \exists \mathrm{e}_{1} \exists \mathrm{e}_{2}\left[\mathrm{e}=\left(\mathrm{e}_{1} \cup \mathrm{e}_{2}\right) \wedge(\operatorname{BECOME}(\mathrm{P}))\left(\mathrm{e}_{1}\right) \wedge(\mathrm{DO}(\mathrm{P}))\left(\mathrm{e}_{2}\right)\right.$

Bar-el (2005) is using Kratzer's definition of perfective aspect which does not allow the event time to continue past the reference time so she also needs an operation to change the event type of inceptive predicates so that the event time is contained within the reference time.

I have a different approach than both Smith (1997) and Bar-el (2005). Before continuing, I wish to point out an important difference between my approach and Bar-el's (2005): I have chosen to use Klein's (1994) definition of perfective aspect, while she is using Kratzer's (1998). This means that, for me, perfectives do not necessarily have both an initial and a final point. Therefore I do not need to explain away the inceptive reading (i.e. a perfective without a final point) using a change-of-event-type operation (from Rothstein 2004).

Another difference between our approaches is that Bar-el (2005) is looking for the solution to the problem in the realm of lexical aspect, whereas I am looking in the realm of grammatical aspect.

I believe that Bar-el (2005) is correct that durativity can not be the reason that some predicates have an inceptive reading with a punctual adverb while others do not. Although Smith (1997) has examples similar to We ate dinner at 1:00 (39a), where an accomplishment has an inceptive reading, these seem to be the exception, rather than the norm, as Bar-el (2005)
demonstrates. ${ }^{159}$ However, unlike Bar-el (2005), I do not think that compatibility with punctual adverbs is a test for inherent (i.e. lexical aspect) initial points, but rather for (grammatical aspect) final points. ${ }^{160}$ Predicates that have an inceptive reading with punctual adverbs do not have a final point within the reference time. Predicates that have an instantaneous reading with punctual adverbs do have a final point within the reference time. This is diagrammed in (43).
43. Interpretation of Perfective Activities and Achievements with Punctual Adverbs
a. Activity
(e.g. I swam at 2:00.) interpretation: Inceptive

b. Achievement
(e.g. I arrived at 2:00.) interpretation: Instantaneous


In both these cases, the predicates also have an initial point within the reference time. Inceptive predicates must have an initial point within the reference time because they lack a final point within the reference time. They can not lack both because then they would be imperfectives. Instantaneous predicates must also have an initial point within the reference time because they occur in an instant so the whole event from beginning to end is contained within the reference time. Therefore, the punctual adverb test can correctly diagnose some initial points, but not all. ${ }^{161}$

The reason accomplishments are usually infelicitous with punctual adverbs is not because they do not have initial points, but rather because English speakers interpret this to mean that the whole event occurred at one brief moment. The sentence \#She knit a sweater at noon in (41c) is infelicitous because people do not usually knit sweaters in one minute. If we were talking about mythical creatures that knit extremely fast, (41c) becomes acceptable (44).

[^101]44. Interpretation of Perfective Accomplishments with Punctual Adverbs

> Accomplishment
> (e.g. * I knit a sweater at noon) interpretation: Infelicitous
> (wants to be instantaneous, but can't for pragmatic reasons)


The question is why do accomplishments want to be instantaneous when they occur with punctual adverbs, even though that interpretation makes no sense. I argue that this is because lexical aspect has an effect on the type of perfective that is realized. Specifically, telic predicates (i.e. predicates with an inherent final point given by lexical aspect) also require a perfective aspect that has a final point. That is, the type of perfective shown in (43a), where the initial point of E overlaps with the right edge of R , is not compatible with a telic event type. This is because telic predicates are required to culminate in the perfective, and they can not culminate if they do not even terminate within the reference time.

This stipulation is required in Klein's (1994) theory, but not Kratzer's (1998). This is because Klein's theory allows a perfective with no final point, so we need to explain why an inceptive reading occurs in some cases but not others. Kratzer's theory does not have this problem because it prohibits perfectives without final points. The challenge for Kratzer's theory is to explain the existence of the inceptive reading in the first place.

Accomplishments are durative and telic, and therefore they are infelicitous with a punctual adverb. Being durative means that they do not fit inside the timeframe designated by a punctual adverb, but being telic means that they are required to. This creates a conflict, which causes these types of utterances to be rejected.

Activities, on the other hand, are compatible with the type of perfective shown in (43a) when they occur with punctual adverbs because activities are durative and atelic. Being durative means they do not fit into a punctual reference time, and being atelic means that they are not required to, so there is no conflict.

Achievements, finally, have the type of perfective shown in (43b) because they are instantaneous so they fit into a punctual reference time. They are also telic, which means they are required to fit into the punctual reference time, but this creates no conflict because they already do.

To put this in other words, a telic perfective predicate $P$ (e.g. knit a sweater) is only true of an event E if R includes the culmination of that event (i.e. the completion of the sweater). Therefore if E is a knit-a-sweater event, then any initial proper-sub-event E' (i.e. any event E' that starts at the same time as E but ends before E does) is not a knitting-a-sweater event (41c). If E is a telic instantaneous perfective predicate (i.e. an achievement), then there is no E ' because E begins and ends at the same time. The culmination of E is within R , and the utterance is felicitous. For an atelic perfective predicate like swim, any initial sub-event E' of E is also a swimming event. Therefore, for atelic events in the perfective it is enough for an initial sub-event of $E$ to be included in $R$ (i.e. the inceptive reading), whereas for a telic event in the perfective, the whole event needs to be included in $R$ (Rullmann p.c). This is shown in (45).
45.
a. Telic Perfectives (Accomplishments and Achievements)
i. Accomplishment (durative, telic)

P: $\quad \# \quad$ I knit a sweater at 2:00.
E: knitting a sweater
E': a sub-interval of knitting a sweater, no culmination R: at 2:00

culmination outside of R: infelicitous
ii. Achievement (instantaneous, telic)

P: I arrived at 2:00
E: arriving
R: at 2:00

culmination inside of R : felicitous
b. Atelic Perfectives (Activities)

P: I swam at 2:00
E: swimming
R: at 2:00

no culmination: felicitous

### 4.4.1.9 Conclusion

To summarize, I have looked at eight diagnostics for perfectivity in this section. The first diagnostic involves showing that a morpheme, X , has a default past interpretation. This could mean that the morpheme is past tense, or that it is perfective aspect.

Next I introduced three tests to show that X is not past tense (which would lead us to suspect that it is perfective aspect). These three tests are: 1. Is $X$ acceptable in any non-past contexts? 2. Is $X$ not required in some past contexts? and 3. Does $X$ combine with other past morphology in the language? The fifth test is to show that X is incompatible with imperfective aspect, which is expected for perfectives.

The final three diagnostics have to do with the initial and final points. Test 1 is testing for initial and final points. Can X mark verbs that refer to eventualities where the event time is contained within boundaries given by a temporal adverbial? Tests 2 and 3 test for final points. Test 2 tests for termination entailments using an event non-continuation clause and for culmination entailments using event completion clauses and interruption interpretations. Test 3 tests whether accomplishment verbs marked with X have an inceptive reading. The summary of diagnostics is repeated below in Table 4.14.

Table 4.14 Perfective Diagnostics

| Diagnostic | What this Tells Us |  |
| :---: | :---: | :---: |
| consistent with: | Past | Perfective |
| TESTING FOR ORDERING RELATION |  |  |
| 1a. default past interpretation | $\checkmark$ | $\checkmark$ |
| TESTING FOR PAST TENSE |  |  |
| 2a. acceptable in non-past contexts | X | $\checkmark$ |
| 2 b . not required in past contexts | $x$ | $\checkmark$ |
| 2c. combines with past | X | $\checkmark$ |
| TESTING FOR PERFECTIVE ASPECT |  |  |
| 3a. incompatible with imperfective | X | $\checkmark$ |
| 3 b . event time contained in temporal adverbial boundaries | X | $\checkmark$ |
| 3c. event non-continuation clause (tests for termination entailment) | $x$ | $\checkmark^{162}$ |
| 3d. event completion clause (tests for culmination entailment) | $x$ | $\checkmark^{163}$ |
| 3e. no interruption interpretation (tests for culmination entailment) | X | $\checkmark^{164}$ |
| 3f. inceptive reading with punctual adverbials | X | $\checkmark$ |

### 4.4.2 Tests for Imperfective Aspect

Here I look at a number of tests to show whether or not a morpheme encodes imperfective aspect, which is defined by Kratzer (1998) and Klein (1994) as having a reference time fully contained within the event time, as shown in (46). Table 4.15 lists these diagnostics, which I elaborate on below. ${ }^{165}$
46. The Imperfective


[^102]Table 4.15 Imperfective Diagnostics

| Diagnostic ${ }^{\text {c }}$ consistent with: | What this Tells Us |  |  |
| :---: | :---: | :---: | :---: |
|  | Present | Imperfective |  |
| TESTING FOR ORDERING RELATION |  |  |  |
| 1a. default present interpretation | $\checkmark$ | $\checkmark$ |  |
| TESTING FOR PRESENT TENSE |  |  |  |
| 2a. acceptable in non-present contexts | $x$ | $\checkmark$ |  |
| 2b. not required in present contexts | $x$ | $\checkmark$ |  |
| 2c. combines with past | X | $\checkmark$ |  |
| TESTING FOR IMPERFECTIVE ASPECT |  |  |  |
| 3a. incompatible with perfective | $x$ | $\checkmark$ |  |
| 3b. event time exceeds temporal adverbial boundaries | $x$ | $\checkmark$ |  |
| 3c. no culmination/termination entailments | $x$ | $\checkmark$ |  |
|  |  | Prog. | Hab. |
| 3d. in-progress reading | $x$ | $\checkmark$ |  |
| 3e. habitual reading | X |  | $\checkmark$ |
| 3f. acceptable with lexical statives |  | n/a |  |

First, imperfectives commonly have a default present interpretation (Table 4.15a).
However, despite this default it is possible to distinguish imperfective aspect from present tense because imperfectives are predicted to be acceptable in some non-present contexts, not required in some present contexts, and to be compatible with past morphology (Table 4.15b-d). Imperfective aspect is expected to be incompatible with perfective morphology (Table 4.15e). An imperfective is also expected to be compatible with situations that have the structure of (46) (Table 4.15f), and, unlike the perfective, imperfectives should not have culmination or termination entailments since they do not have endpoints inside the reference time (Table 4.15 g ). The final three diagnostics for imperfective aspect serve to differentiate imperfective aspect from progressive and habitual aspect, which are subtypes of imperfective aspect. Imperfectives are expected to have both progressive and habitual readings, as well as stative readings.

### 4.4.2.1 Imperfective Aspect Has a Default Present Interpretation

In languages without overt tense, the default tense reading for imperfective aspect is present tense (Smith 1997:99). This means that in an out-of-the-blue context, an event described by an imperfective-marked verb will be interpreted as present. Smith (2008) uses two principles to derive this default: the deictic principle, which states that the speech time is the central orientation point for language, and the simplicity principle of interpretation, which states that the
preferred interpretation is the one that requires the least information added or inferred (Smith 2008:231).

The first diagnostic for whether a certain morpheme (morpheme X ) encodes imperfective aspect is whether or not it has a default present interpretation in an out-of-the-blue context. ${ }^{166}$ This means it could be either present tense or imperfective aspect.

The tendency for imperfectives to have a present interpretation is not nearly as strong as the tendency for perfectives to have a past interpretation. This has to do with the bounded event constraint which strongly precludes perfectives from having a present interpretation. There is no such constraint for the present interpretation of imperfectives, which is why this default is easier to cancel.

### 4.4.2.2 Imperfective Aspect Need Not Be Construed as Present

Just like a perfective is not inherently past, an imperfective is not inherently present. However if imperfectives generally have a present interpretation there is some danger of misanalyzing them as present tense. ${ }^{167}$ There are three tests that can help to show that a morpheme with a default present interpretation is not present tense. First of all, this morpheme is expected to be acceptable occasionally in non-present contexts (either past or future) because there is no part of its meaning that forces it to be present tense. ${ }^{168}$ The second and third tests are given in the following two sub-sections.

### 4.4.2.3 Imperfective Aspect Is Not Required in Contexts That Force a Present Construal

The second test that morpheme X is not present tense involves showing that it is not required in all present contexts. If a morpheme encoded present tense, it would be somewhat surprising (although not impossible) for it not to appear in utterances that are interpreted as present tense. This test, like the previous one, is not airtight. Present construals can arise in utterances that have no tense or aspect marking at all, as is the case for non-verbal predicates. For example, Modern Hebrew has a present tense, but it does not occur in non-verbal predicates such as (47). Nevertheless, these kinds of predicates have a present interpretation (Doron 1983).

[^103]47. ה'א א׳שה
/hi ifa/
3sG.F woman
She is a woman.

### 4.4.3.4 Imperfective Aspect Combines with Past Tense

The third test to rule out a present tense meaning is to show that morpheme X combines with past morphology. This would be baffling if this morpheme were actually a present tense marker because present tense and past tense are incompatible by definition. Imperfective aspect, on the other hand should be able to combine with past tense morphology. In addition, if the morpheme is an imperfective, the resulting utterance should have a past imperfective interpretation.

### 4.4.2.5 Imperfective Aspect Does Not Combine with Perfective

The fifth test for imperfectivity is incompatibility with perfective aspect. This is the mirror image of the test for perfectivity in 4.3.1.5. An imperfective morpheme is expected to not be able to combine with a perfective morpheme. Instead, perfectives and imperfectives should be in complementary distribution by definition.

### 4.4.2.6 Imperfective Has Event Time That Exceeds Temporal Boundary of Adverbial

By definition, imperfective-marked verbs describe events that exceed the boundaries of a given reference time. English speakers understand the event in (48) (painting the house purple) to be longer than the time frame of the period defined by the phrase while I watched. This means that I only watched part of the event of painting the house purple. If the Siamou imperfective is really an imperfective, we expect it to follow this pattern. This is the sixth diagnostic for imperfective aspect.
48. She was painting the house purple while I watched.

This part of the diagnostic is simpler for imperfective aspect than perfective aspect because there is only one kind of imperfective aspect in both Klein's (1994) and Kratzer's (1998) theories of aspect. This means that there is no need to contrast two competing viewpoints of perfective aspect. It is also easier because Klein's (1994) perfective has three sub-types, but the imperfective only has one.

### 4.4.2.7 Imperfective Lacks Culmination and Termination Entailments

Culmination and termination entailments, although usually used to diagnose perfective aspect, are also helpful with imperfective aspect because imperfectives are expected to not have these kinds of entailments. Therefore, lack of culmination and termination entailments for imperfectives can also serve as a diagnostic for imperfective (or progressive) aspect.

Termination refers to the cessation of an event for any reason. For example, if I am building a house, and I stop building a house, the house building event has terminated. It could be that I finished the house, and that is why I stopped, or it could be that I ran out of money and had to abandon the project. Culmination, on the other hand, refers to the cessation of an event after it has reached its natural endpoint. A natural endpoint is the point at which an event is completed. For example, if I am building a house, the natural endpoint is the point at which the house is done. If I run out of money and stop building, the house building event never reaches its natural endpoint, and therefore never culminates.

If an utterance does not have a termination entailment, it should be felicitous when conjoined with a clause asserting that the event is still in progress (Bar-el 2005). For example, the past progressive utterance in (49a) is compatible with such a clause, as (49b) shows. This means that there is no termination entailment. Similarly, if an utterance does not have a culmination entailment, it should be felicitous when conjoined with a clause asserting that the event is not finished (Bar-el 2005). The utterance in (49c) shows that (49a) does not have a culmination entailment.
49. a. I was writing my thesis
b. I was writing my thesis and I am still writing it. (No termination entailment)
c. I was writing my thesis and I have not finished writing it.
(No culmination entailment)

### 4.4.2.8 Imperfective Has an In-Progress Reading

The last three diagnostics have to do with sub-types of imperfectivity. The category of imperfective can be subdivided into more specific categories of meaning. In order to show that a morpheme that looks like an imperfective is not actually a morpheme with a more narrowly defined meaning, I need to show that it may have all the readings commonly associated with imperfective aspect. The two main classes of imperfective meaning are habitual and continuous.

Continuous aspect is further subdivided into stative (i.e. nonprogressive) and progressive. This is shown in Figure 4.1.

\section*{| Perfective Imperfective |
| :--- |
| Habitual Continuous |
| $\frac{\text { Stative (non-progressive) Progressive }}{}$ |}

Figure 4.1 Aspectual Oppositions ${ }^{169}$
Comrie (1976) describes habitual aspect as "a situation which is characteristic of an extended period of time, so extended in fact that the situation referred to is viewed not as an incidental property of the moment, but precisely, as a characteristic feature of a whole period" (Comrie 1976:27-28). An example of a past habitual in English is given in (50).
50. I used to eat mushroom soup for breakfast.

Continuousness is described negatively as "imperfectivity that is not habituality" (Comrie 1976:26). Progressive aspect is used to refer to on-going activity. Progressives and statives (nonprogressives) are given as separate categories because progressive aspect is generally considered to be incompatible with stative verbs. ${ }^{170}$

If morpheme X is used to characterize events as having ongoing activity, it may be either an imperfective or a progressive.

### 4.4.2.9 Imperfective Has Habitual Reading

Comrie's (1976) hierarchy provides a way to differentiate between imperfectives and progressives. First, we need to test for habitual readings. A progressive, such as English be +ing, is incompatible with a habitual reading (51a), but an imperfective, such as French $V+I M P F$, is compatible with a habutal reading (51b).

[^104]
## 51. habitual context

a. English progressive

* I was eating eggs for breakfast every morning. ${ }^{171}$
b. French imperfective

| Je | mang-eais | des | oeuf-s chaque matin. |
| :--- | :--- | :--- | :--- |
| 1SG.NOM | eat-IMPF.PST | INDEF.PL | egg-PL every morning |

I ate eggs every morning.

### 4.4.2.10 Imperfective Has Stative Reading

Secondly, imperfectives are expected to be compatible with stative verbs, but progressives are expected to be incompatible with them (Comrie 1976). The English progressive is contrasted with the French imperfective in the following example. The English progressive is not accepted with a stative verb (52a), but the French imperfective is (52b).
52. with a stative verb
a. $\quad$ I was knowing the answer.
b. Je connais-sais la réponse.

1SG.NOM know-IMPF.PST DEF.F answer
I knew the answer.

### 4.5 Conclusion

This chapter introduced the theoretical framework of tense and aspect and summarized the diagnostics used in chapter 5 to diagnose the Siamou perfective and imperfective. The discussion began with Reichenbach (1947) who was the first to show that a reference time is necessary for understanding temporal relations. Klein (1994) took this concept and expanded it by separating tense from aspect. He defined tense as the relation between speech time and utterance time, and aspect as the relation between reference time and event time. These definitions allowed him, and also Kratzer (1998), to formally characterize the difference between perfective and imperfective aspect using different kinds of overlap relations between the reference time and event time.

[^105]Perfective and imperfective aspect are sensitive to properties of the predicates they modify, especially to the inherent aspectual properties of these predicates. Therefore, the later part of the theoretical discussion included a description of the theory of lexical aspect and how it interacts with grammatical aspect categories such as perfective and imeprfective. This framework made it possible to compile a set of diagnostics for perfective and imperfective aspect. These diagnostics were tailored to the Siamou language, taking into account the fact that Siamou aspectual morphemes have strong default tense. However, these diagnostics are expected to be a useful way of testing for perfective and imperfective aspect in any language.

## 5. The Semantics of Perfective and Imperfective Aspect in Siamou

In the previous chapter, I described a theoretical framework for tense, grammatical aspect and lexical aspect. I showed how these three categories interact and how defaults can arise, and I introduced diagnostics for perfective and imperfective aspect. In this next chapter, I use these theoretical concepts and diagnostics to analyze two verbal suffixes as perfective and imperfective aspect.

First, in 5.1 and 5.2, I identify and diagnose the perfective and imperfective aspect. Section 5.1 is about the perfective. I show that the $-L$ suffix (1) introduced in chapter 3 is a perfective. Section 5.2 is about the imperfective. I show that the $-n$ suffix (2) from chapter 3 is an imperfective.

| 1. | Ń | ni | à | jà. |
| :--- | :--- | :--- | :--- | :--- |
|  | 1SG | FIN | 3SG | grab.PRFV |
|  | I grabbed it. |  |  |  |
|  | French: Je l'ai attrapé. (C) |  |  |  |

2. Ń ni à jaà-n.

1 SG FIN 3 SG grab-IMPF
I am grabbing it.
French: Je l'attrape. (C)
Then in 5.3 I give a brief description of perfective and imperfective aspect in Kru. Finally, in 5.4, I show that many Niger-Congo languages have a contrast between eventive and stative verbs where eventives have a default past interpretation (as do Siamou perfectives), and statives have a default present interpretation (as do Siamou imperfectives). This is called the factative effect. This contrast is predicted to occur in Siamou. However, the attempt to prove this ends up revealing that Siamou does not have stative verbs.

### 5.1 Perfective Aspect in Siamou

In this section I analyze the semantics of the Siamou $L$ tone suffix. In 5.2.1 I identify the morpheme in question and in 5.2.2 I test it to show that it encodes perfective aspect.

### 5.1.1 Low Tone Suffix Is Perfective Aspect in Siamou

Recall from chapter 3 that there was a morpheme that I analyzed as a suffixal $L$ tone.
Morphologically, this morpheme follows one of two general patterns: either it is marked by a L tone (3a), or it is unmarked (3b). Usually it has the same segmental form as the bare verb (3a-b), but it may differ from it in irregular verbs (3c).
3. a. bare verb: ja
tone melody: $\mathrm{M}(\mathrm{L})$
translation: catch
Nìn yméqn jà. tone melody: L thirst 1PL.EMPH catch.PRFV
We were thirsty.
Literally: Thirst grabbed us.
French: Nous avions soif. (C)
b. bare verb: yen
translation: yawn
À ri yen. tone melody: M
3SG FIN yawn.PRFV
He yawned.
$\begin{array}{llllll}\text { c. } & \begin{array}{l}\text { bare verb: } \\ \text { translation: }\end{array} & \begin{array}{l}\text { gbs } \\ \text { drink }\end{array} & \text { tone melody: } & \text { M(L) } \\ & & & & \\ \text { N } & \text { ni } & \text { nun } & \text { yè. } & \text { tone melody: } & \text { L } \\ & \text { 1SG FIN } & \text { water } & \text { drink.PRFV } & & \\ & \text { I drank water. } & & & \end{array}$
In the following section, I show that this morpheme encodes perfective aspect.

### 5.1.2. Identifying Perfective Aspect in Siamou

I use nine diagnostics to show that the L tone suffix in Siamou is a perfective. I start by showing that it has a default past interpretation (diagnostic 1), but that it is not past tense (diagnostics 24). Then I show that it is incompatible with imperfective aspect (diagnostic 5). The following three diagnostics are for specific types of perfective. Diagnostic 6 shows that the $L$ tone suffix has the structure of a perfective with the event time contained in the reference time. Diagnostic 7 shows that accomplishments have a final point within the reference time. Diagnostic 8 shows that with punctual adverbs, activities may have an inceptive reading (i.e. no final point within the
reference time). The final diagnostic is Siamou specific (although it may very well be applicable to more languages, especially those that have been said to have a factative): I show that inchoative verbs marked with the L tone suffix have a result state reading. These diagnostics are listed in Table 5.1.

Table 5.1 Perfective Diagnostics

| Diagnostic | What this Tells Us |  |
| :---: | :---: | :---: |
| consistent with: | Past | Perfective |
| TESTING FOR ORDERING RELATION |  |  |
| 1a. default past interpretation | $\checkmark$ | $\checkmark$ |
| TESTING FOR PAST TENSE |  |  |
| 2a. acceptable in non-past contexts | X | $\checkmark$ |
| 2 b . not required in past contexts | X | $\checkmark$ |
| 2c. combines with past | X | $\checkmark$ |
| TESTING FOR PERFECTIVE ASPECT |  |  |
| 3a. incompatible with imperfective | X | $\checkmark$ |
| 3b. event time contained in temporal adverbial boundaries | $x$ | $\checkmark$ |
| 3c. event non-continuation clause (tests for termination entailment) | $x$ | $\checkmark^{172}$ |
| 3d. event completion clause (tests for culmination entailment) | $x$ | $\checkmark^{173}$ |
| 3e. no interruption interpretation (tests for culmination entailment) | $x$ | $\checkmark^{174}$ |
| 3f. inceptive reading with punctual adverbials | $x$ | $\checkmark$ |
| 3g. result state reading with inchoative verbs | X | $\checkmark$ |

### 5.1.2.1 Low Tone Suffixed Verbs Have a Default Past Interpretation

Prost (1964) refers to the Siamou forms that I labeled perfective and imperfective in chapter 3 as past and present, respectively. Marchese (1986) predicts that they are more likely to be perfective and imperfective aspect, and although she does not have enough information about Siamou to state this with certainty, she turns out to be correct. First I demonstrate that the $L$ tone suffix has a strong default past interpretation.

In Siamou the $L$ tone suffixed verb form almost always has a past interpretation. This is a common characteristic of perfective aspect (Smith 1997). However, in Siamou, most of the time it does not seem possible to cancel this interpretation, which suggests that it is stronger than just a default. In fact, Marchese (1986) argues that Kru perfectives (or factatives) have a past interpretation for all verb classes except stative verbs.

[^106]In the examples below, I first show some examples in which a past interpretation is mandatory, The example in (4) shows a L-suffixed verb with a past perfective interpretation. A present interpretation (either present habitual or present progressive) is not accepted, and neither is a past imperfective interpretation.
4. a. À ri yen.

3SG FIN yawn.PRFV He yawned.
context 1: PAST PERFECTIVE
What did the baby do when he woke up?
context 2 (inappropriate): PAST IMPERFECTIVE
What was the baby doing when you got there?
context 3 (inappropriate): PRESENT PROGRESSIVE
What is the baby doing now?
context 4 (inappropriate): PRESENT HABITUAL
What does the baby do whenever he wakes up?
b. Ń ni bá yè.

1SG FIN porridge drink.PRFV
I drank porridge.
context 1: PAST PERFECTIVE
What did you have for breakfast this morning?
context 2 (inappropriate): PAST IMPERFECTIVE
What were you doing when I called you?
context 3 (inappropriate): PRESENT PROGRESSIVE
What are you doing right now?
context 4 (inappropriate): PRESENT HABITUAL
What do you do every morning?
It is impossible to cancel the past interpretation most of the time. For example, adding the adverb now to the perfective utterances in (5-7) does not change the interpretation from past to present, but just gives them a recent past interpretation.
5. a. À $\mathrm{A} \hat{\varepsilon}=\hat{\varepsilon}$ ri ló.

DEF1 cloth.PL=DEF2 FIN wash.PRFV
The clothes were washed.
context: The clothes we are talking about were washed.
inappropriate context: I am wondering if these clothes are clean. This is your response.
b. $\grave{A} \quad \mathrm{w} \hat{\varepsilon}=\hat{\varepsilon}$ ri ló kyágmo. DEF1 cloth.PL=DEF2 FIN wash.PRFV now The clothes were washed now. context: We are talking about clothes that were washed just recently.
6. a. Ń ni lò à di. 1SG FIN arrive.PRFV DEF1 home I arrived at home.
context: We are talking on the phone. I want to know if you're still on your way home, or if you've already arrived. This is your response.
$\begin{array}{lllllll}\text { b. } & \text { Ń } & \text { ni } & \text { lò } & \text { à } & \text { di } & \text { kyágmo. } \\ & \text { 1SG } & \text { FIN } & \text { arrive.PRFV } & \text { DEF1 } & \text { home } & \text { now }\end{array}$ 1SG FIN arrive.PRFV DEF1 home now I arrived at home now.
context: I just arrived at home recently.
7.

| a. | À | ri | tú. |
| :--- | :--- | :--- | :--- |
|  | 3 SGG | FIN | run.PRFV | He ran.

inappropriate context: I want to know why that guy is all sweaty. This is what you tell me. ${ }^{175}$
$\begin{array}{lllll}\text { b. } & \text { À } & \text { ri } & \text { tú } & \text { kyáymo. } \\ & \text { 3SG } & \text { FIN } & \text { run.PRFV } & \text { now }\end{array}$
He ran now.
context: He just ran recently.
The utterances in (5-7) are what make the L tone suffix look like a past tense. However, it is not a past tense. To show this, I present three pieces of evidence. First, it is acceptable in some nonpast contexts (5.1.2.2). Secondly, it is possible to have past meaning without the $L$ tone suffix (and in fact, there is a different morpheme that serves to mark past tense) (5.1.2.3), and finally, it can combine with other past morphology that exists in Siamou (5.1.2.4).

### 5.1.2 2 Low Tone Suffixed Verbs Need Not Be Construed as Past

First of all, the L tone suffix does not quite always have a past interpretation: Some L tone inflected performative verbs have a present interpretation (8).

[^107]8. a. Ń ni ń ká.

1SG FIN 1SG refuse.PRFV
I refuse.
comment: This is a popular utterance among children at Téndenno (the courtyard I live in when I am in Tin.)
b. Ń ni lé $\varepsilon$ bla gbo yegn-gbòn á se. 1SG FIN morning come.IMPF.NOM thing mouth-take.PRFV 2SG to I promise you that I will come in the morning.

There is also a small class of verbs, which I am calling inchoatives, that often have a present result state interpretation with the L tone suffix (9). This is covered in more detail in 5.2.2.9. ${ }^{176}$
9. À la kyánmı à hl̀̀

3SG then now 3SG come.to.know.PRFV
$\mathrm{d}^{\prime}$ à ver=î jen-nèn.
QUOT DEF1 cup=DEF2 heat-STAT
So now he knows that the cup is hot.
Literally: So now he has come to know that the cup is hot.
context: because he touched it

### 5.1.2.3 Low Tone Suffixed Verbs Are Not Required for Contexts That Force a Past

## Construal

Furthermore, if the L tone suffix were a past tense morpheme, we might expect it to appear whenever there is a past tense context (although not necessarily). This is definitely not the case. The perfective (10a), the completive (10b), the stative (10c), ${ }^{177}$ the past imperfective (10d) and past non-verbal predicates (10e) all have a past reference time, but only the first one contains the morpheme in question.
10. a. À $\mathrm{r}^{\prime}$ à yè.

3SG FIN 3SG drink.PRFV
S/he drank it.

[^108]b. $\begin{array}{llll}\text { À } & r^{\prime} & \text { à } \\ \text { gbè̀è. }\end{array}$ 3SG FIN 3SG drink-CMPL S/he drank everything.
c. $\grave{A} \quad \mathrm{r}^{\prime} \quad$ à gbè-jèn. 3SG FIN 3SG drink-STAT S/he's drunk it./She drank it.
d. $\grave{\text { A }} \mathrm{r}^{\prime}$ à laà-n ín. 3SG FIN 3SG drink-IMPF PST S/he was drinking./S/he used to drink.
e. Klô ń to ín.
hunger 1 SG to PST
I was hungry.
Literally: Hunger was to me.

### 5.1.2.4 Low Tone Suffixed Verbs Combine with Past Tense

The particle ín in (10d-e) above marks past tense. (See chapter 6.) When it occurs with imperfectives and in non-verbal predicates it clearly serves to shift the reference time to the past. The (a) utterances in (11-12) have a present interpretation. The (b) utterances, with in, have a past interpretation.
11.
a.

| A | r' | à | laà- n. |
| :--- | :--- | :--- | :--- |
| 3SG | FIN | 3SG | drink-IMPF |

b. $\begin{array}{lllll}\mathrm{A} & \mathrm{r}^{\prime} & \text { à laà-n }\end{array}$ 3SG FIN 3SG drink-IMPF
ín.
S/he [was drinking]/[used to drink].
12.


It is possible to combine this particle with a $L$ tone suffixed verb (13).

| 13. | a. | À | $\mathrm{r}^{\prime}$ | a | yè | ín. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 3SG |  | 3SG | drink.PRFV | PST |
|  |  | S/he drank it. |  |  |  |  |
|  | b. | Nunlô |  |  | mímí | ín. |
|  |  | flood |  | RFV | over.there | PST |
|  |  | The fl | ood | ne till | here. |  |

Since this verb form generally has a past interpretation on its own, the contribution of $i n$ here is uncertain. This particle is discussed in more detail in chapter 6 where I show that adding $i n$ to a perfective utterance often seems to give the utterance a sense of remoteness.

I have shown so far that most of the time $L$ tone inflected verbs have a past interpretation. The only places that I know of in which they do not is in the context of performative utterances, as well as possibly hearsay expressions. However, there are other morphemes that also have a past interpretation, including one that clearly has the effect of shifting a present reference time to the past (11-12). Later, in 5.3.2, I show that $-n$ is definitely not a present tense marker. This in itself strengthens the argument that the $L$ tone suffix is not a past tense because it would be odd to have a past tense/imperfective aspect contrast in a language, but quite natural to have a perfective/imperfective contrast.

In the next four sub-sections I consider the final four diagnostics from Table 5.1. First I show that the L tone suffix can not combine with the $-n$ suffix (which I show in 5.3 to be an imperfective). This in itself is not a strong argument for perfective aspect, especially since I have not yet shown that $-n$ is actually imperfective, but it is what we would expect if these were perfective and imperfective. They have complementary meanings so it is expected that they would be in complementary distribution. The remaining three tests focus on the initial and final points of the Siamou L tone suffix. I demonstrate that it has an initial and final point in most contexts using the temporal adverbial test, that it has a final point in most contexts using the termination/culmination entailment tests, and that it sometimes lacks a final point using the punctual adverb test. These all confirm that it marks perfective aspect.

### 5.1.2.5 Low Tone Suffixed Verbs Do Not Combine with Imperfective

As I showed in chapter 3, all six aspectual morphemes, including the $L$ tone suffix (i.e. perfective) and the $-n$ suffix (i.e. imperfective) are verbal suffixes. These suffixes are not able to
stack. ${ }^{178}$ For the L tone suffix and the $-n$ suffix, it is difficult to even construct examples of them stacking because they are largely supra-segmental, and often the $L$ tone suffix is not realized. An imperfective combined with an unmarked perfective would look just like an imperfective. If we take a verb where the low tone suffix is visible (14a) and combine it with the nasal suffix that is part of the imperfective (14b), the result is ungrammatical (14c). If we try to add in the mid tone marking that is also part of the imperfective, placing it after the low tone of the perfective (like this: $\grave{v}$ ), the results are still ungrammatical (14d). ${ }^{179}$
14. a. À bisháaŋn=î ri kùr. DEF1 child=DEF2 FIN gain weight.PRFV The child gained weight.
b. À bisháayn=î ri kuùr-n.

DEF1 child=DEF2 FIN gain.weight-IMPF
The child is gaining weight./The child gains weight.
c. * À bisháayn=1̂ ri kùr-n. DEF1 child=DEF2 FIN gain.weight.PRFV-IMPF
d. * À bisháaŋn=î ri kùur-n. DEF1 child=DEF2 FIN gain.weight.PRFV-IMPF

Although it is possible that the perfective and imperfective combine in some other way, I am not aware of it and do not expect it.

### 5.1.2.6 Low Tone Suffixed Verbs Have Event Time Contained within Temporal Boundary of Adverbial Modifier

The examples in (15) show that $L$ tone suffixed verbs can refer to events that are fully contained within a reference time, and are therefore compatible with both Kratzer's (1998) and Klein's (1994) definition of perfective aspect. I give examples using temporal adverbs to represent the reference time. Perfectives are interpreted as beginning and ending within the bounds of the reference time. ${ }^{180}$

[^109]15. Perfectives (Event time contained by reference time)
a. Ń $\mathrm{n}^{\prime}$ à jùmlay=â gbśn 1SG FIN DEF1 corn=DEF2 gather.PRFV
ń $\mathrm{kloŋ}=\hat{\mathrm{o}}$ mっ dír.
1SG field=DEF2 in yesterday
Yesterday I harvested the corn in my field.
Hier, j'ai recolté le maïs dans mon champ. (L)
context: Yesterday morning I started harvesting the corn in my field, and in the evening I finished.
context (inappropriate): I started harvesting the corn before yesterday. Last night hadn't finished yet, and this morning I continued harvesting.
reference time: yesterday
event time: harvesting corn
[YESTERDAY . . . . . [HARVESTING. . . . . . ]. . . . .]

$\begin{array}{lllll}\text { b. } & \begin{array}{ll}\text { A } & \text { kló } \\ \text { DEF1 } & \text { jìr } \\ =\hat{\varepsilon} & \text { week }\end{array} & \text { pass=DEF2 } & \text { se, } \\ & \text { at }\end{array}$
à méèl=î $\quad \mathrm{r}^{\prime}$ à won=î telc. DEF1 woman.PL=DEF2 FIN DEF1 hibiscus=DEF2 peel.PRFV Last week, the women shelled the hibiscus.
French: La semaine passé les femmes ont décortiqué le dah. ${ }^{181}(\mathrm{~L})$
context: At the beginning of last week, the women started shelling hibiscus. At the end of the week, they finished.
context (inappropriate): Two weeks ago, the women started shelling hibiscus. At the end of last week, they hadn't finished yet. This week, they continued shelling.
reference time: last week
event time: shelling hibiscus
[LAST WEEK . . . . . [SHELLING. . . . . . ]. . . . . ]

[^110]$\begin{array}{lllllll}\text { c. } & \text { Ń } & \text { ni } & \text { dír } & \text { dénno } & \text { Musa sádi. } \\ & \text { 1SG } & \text { FIN } & \text { yesterday } & \text { go.PRFV? } & \text { Musa } & \text { home }\end{array}$
Mún tèn-nèn gbâr ye ín,
1SG.EMPH be-STAT time at PST
à $\mathrm{r}^{\prime}$ à ló=ô tokukûr.
3SG FIN DEF1 house=DEF2 paint.PRFV
Yesterday I went to Musa's place. While I was there, he painted the house.
context: He painted the whole house while I was there, beginning after I got there and finishing before I left. ${ }^{182}$ consultant comment: With this verb tense you know that the whole house was painted.
reference time: yesterday when I was at Musa's house
event time: painting the house
[AT MUSA'S HOUSE . . . . . . [PAINTING. . . . . . ]. . . . . ]

### 5.1.2 7 Low Tone Suffixed Verbs Have a Culmination Entailment with Accomplishments, No Termination Entailment with Activities

I showed how to test for termination and culmination entailments using the following three tests (16).
16. a. event non-continuation clause (tests for termination entailment)

$$
P \ldots \text { and still } P
$$

b. event completion clause (tests for culmination entailment)
$P$. . .but not yet $P$
c. no interruption interpretation (tests for culmination entailment)
$P$. . and then $Q$
I also showed that cross-linguistically, perfectives vary in the kinds of termination and culmination entailments they have (Bar-el 2005). Some of these patterns are shown in Table 5.2 below.

[^111]Table 5.2 Termination and Culmination Entailments of Activities and Accomplishments

| Language | Activities | Accomplishments |  |
| :--- | :--- | :--- | :--- |
|  | Termination Entailment | Culmination Entailment | Termination Entailment |
| Dëne Suliné | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| English | $\boldsymbol{x}$ | $\checkmark$ | $\checkmark$ |
| Thai | - | $\mathbf{x}$ | $\checkmark$ |

In this section, I show that the Siamou L tone suffix patterns with English past tense ${ }^{183}$ in that when it occurs with activity verbs, there are no termination entailments, and when it occurs with accomplishment verbs, there are culmination entailments (and therefore also termination entailments).

Activity verbs with the L tone suffix are acceptable with clauses that state they are still in progress or incomplete (17). This means that they do not have termination or culmination entailments.
17. Activity: no termination or culmination entailments
a. $\grave{\mathrm{A}}$ ri sègn, 3SG FIN dance.PRFV He danced
fù nì à fon scèn-n yé tòmò-tomo. that and 3 SG be.at dance-IMPF still every.time and he's still dancing.
b. $\grave{\mathrm{A}}$ ri sè̀n, 3SG FIN dance.PRFV He danced

| fù nì | à | wo | kóyn | ken | seyn | to | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| that and | 3SG | NEG finish.PRFV | yet | dance | at | NEG |  |
| and he's not finished dancing yet. |  |  |  |  |  |  |  |

Accomplishment verbs with the $L$ tone suffix, on the other hand, entail that the event described by the verb culminates. They are infelicitous with a clause stating that the action continues (18a) or that it is incomplete (18b).

[^112]18. Accomplishment: termination and culmination entailments

fù nì à fon à hlé ay-n yé tòmò-tomo. that and 3 SG be.at 3 SG weave-IMPF still every.time and she's still weaving it.
b. \# Mún dye-mél=î ri kpàr hlégn, 1SG.EMPH child-woman=DEF2 FIN mat weave.PRFV \# My daughter wove a mat
kè, à wo la à tín kóyn ken bo. but 3SG NEG then 3SG weave finish.PRFV yet NEG and she's not done weaving it yet.

Achievement verbs inflected with the $L$ tone suffix also have culmination entailments (19). They are infelicitous with a clause stating that the action continues (19a) or that it is incomplete (19b).
19. Achievement: termination and culmination entailments
a. \# À jimiìn gbon mónblî=1 ri lò DEF1 people.PL take.PRFV.NOM truck=DEF2 FIN arrive.PRFV

| à | líi | fonn=1 | mっ, |
| :--- | :--- | :--- | :--- |
| DEF1 | stop.IMPF.NOM | place=DEF2 | in |

fù nì à fon loò-n yé.
that and 3 SG be.at arrive-IMPF still
\# The bus arrived at the station and it's still arriving
$\begin{array}{clllll}\text { b. \# À } & \text { jimiìn } & \text { gbon } & \text { mónblî=1 } & \text { ri } & \text { lò } \\ \text { DEF } & \text { people.PL } & \text { take.PRFV.NOM } & \text { truck=DEF2 } & \text { FIN } & \text { arrive.PRFV }\end{array}$

| à | líi | fonn=1 | mっ, |
| :--- | :--- | :--- | :--- |
| DEF1 | stop.IMPF.NOM | place=DEF2 | in |

kè à wo lò kóyn ken bo.
but 3SG NEG arrive finish.PRFV yet NEG \# The bus arrived at the station and it's not finished arriving yet.

The second test for culmination entailments involves interruption clauses. In the following examples, the first clause contains a $L$ tone suffixed verb, and the following clause asserts that some subsequent event took place. In all cases, the event in the first clause is understood to culminate before the event described by the second clause occurs. For example, in (20a) there is a perfective verb (ló), and the event of the mother calling is understood to take place after the event of washing is complete.
20.

| a. |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| A | r' | à | w $\hat{\varepsilon}=\hat{\varepsilon}$ | ló |
| 3SG | FIN | DEF1 | cloth.PL=DEF2 | wash.PRFV |
|  | She washed the clothes, |  |  |  |


| à | $\mathrm{n}=\hat{\mathrm{a}}$ | k | à | f'́nn |
| :--- | :--- | :--- | :--- | :--- |
| 3 SG | mother= $=\mathrm{DEF} 2$ | NFP | 3 SG | call |
| and then her mother called. |  |  |  |  |

context: She finished washing clothes.
inappropriate context: She left the clothes without finishing them.
consultant comment: As soon as she finished washing the clothes, her mom called.
b. Ń n' à yenìníin=î tónn, nò ki tónn 1SG FIN DEF1 tomato.PL=DEF2 gather.PRFV rain FIN fall
I gathered the tomatoes and then it rained.
French: J'ai ramassé la tomate et la pluie a tombé. (C)
context: I finished gathering the tomatoes before it rained.
inappropriate context: I was still gathering the tomatoes when it started to rain.
c. Ń ni sébê jwár, ń ki ló sonn.

1SG FIN paper write.PRFV 1SG NFP house buy
I wrote a book and then I bought a house.
French: J'ai écrit un livre, et puis j'ai acheté une maison. (L)
context: I finished the book and then I bought the house.
inappropriate context: I bought the house while I was still writing the book.

### 5.1.2.8 Low Tone Suffixed Verbs Have an Inceptive Reading with Punctual Adverbs

Some L tone suffixed verbs have an inceptive reading with punctual adverbs. This means that the initial part of the event is contained within the reference time, but not the end part of the event. In (21a-c) the reference time is 2:00. The event is understood to continue past 2:00. In (21d) the
reference time is when I woke up. The rooster started crowing at the time when I woke up, but continued crowing for a time after. In (21e), the reference time is the time when the man closed the door. At the moment when the man closed the door, the old man started counting his money, but he continued after the man closed the door. ${ }^{184}$
21. a. À gbâr món níin=î gbâr ye,
DEF1 time CL two=DEF2 time at
à jen-bisháayn=î ri sè̀n.
DEF1 man-child=DEF2 FIN dance.PRFV
At 2:00, the boy danced.
French: À deux heures, le garçon a dansé. (L)
[R:AT 2:00 . . . . . \{DANCE. . . . . ]. . . . . \}
b. À gbâr món níin=î gbâr ye,

DEF time REL two=DEF2 time at
à klonron $j 0=\hat{\jmath}$ r' án kpêgl=î dwôn.
DEF1 old.person man=DEF2 FIN POSS money=DEF2 count.PRFV
At 2:00, the old man counted his money.
French: À deux heures, le vieux a compté son argent. (L)
[R:AT 2:00 . . . . . \{COUNT MONEY. . . . . . ] . . . . . \}
c. À gbâr món níin=î gbâr ye,

DEF1 time CL two=DEF2 time at
à mél-bisháayn=î ri kpàr hlégn.
DEF1 woman-child=DEF2 FIN mat weave.PRFV
At 2:00, the girl wove a mat.
French: À deux heures, la fille a tissé une natte. (L)
[R:AT 2:00...... $\{$ WEAVE A MAT. . . . . . ]..... $\}$
d. Mún jìnèn gbâr ye à sùnkwój=ô ri tò 1SG wake.up time at DEF1 rooster=DEF2 FIN cry.PRFV When I woke up, the rooster crowed.
context: The rooster started crowing when I woke up.
[R:WAKE UP . . . . . . ROOSTER CROW. . . . . .]...... \}

[^113] DEF1 man=DEF2 NFP DEF1 house=DEF2 door=DEF2 close.PRFV time at à klòron $j 0=\hat{\jmath}$ r án kpêyl=î dwôn. DEF1 old.man man=DEF2 FIN POSS cowrie.shell.PL=DEF2 count.PRFV When the man closed the door, the old man counted his money.
context: The old man started counting after the door was closed.
reference time: when the man closed the door
event time: when the old man counted the money
[R:DOOR CLOSE . . . . . $\{$ COUNT MONEY. . . . . . ]. . . . . \}
The reason these utterances have an inceptive interpretation is because the reference time is so brief that the event can not fit inside of it. This shows that perfective-marked verbs in Siamou are able to refer to events that extend past the end of the reference time, as is common for perfectives in other languages. This supports Klein's (1994) definition of perfective aspect, which allows the event time to be partially outside the reference time.

### 5.1.2.9 A Test That Is Specific to Siamou: Low Tone Suffixed Inchoative Verbs Have a Result State Reading

The final test for perfective aspect is Siamou-specific, although it may turn out to be useful for other languages as well, especially other Kru languages. In Siamou, there is a certain class of verbs that often have an inchoative reading which I call inchoative verbs (see 5.4). When these verbs are inflected with the L tone suffix, they often (but not always) have a result state reading. For example, the verb teyn ('become') in (22a) is inflected with the L tone suffix and has the form tèpn. It is interpreted as a present state (i.e. the way it is). Examples (22a-c) show a present state reading, and (22d) shows a past state reading. In (23), I show that sometimes L tone inflected inchoative verbs have a past inchoative reading as well, which is also expected. For example, the same L tone inflected form tèyn is interpreted as 'became' in (23a).

22．Perfectives of Inchoative Verbs：Stative reading（past or present）
a．À nì mano tènn， 3SG if like．that become．PRFV
ń bè món dyàn 0 á kén－bê． 1SG MOD thing other with 2SG give－PRSP2 If that＇s the way it is，I＇m going to give you something． Literally：If it became like that，I＇m going to give you something．
context：Vultures offer a man a gift for giving them fresh meat．
b．À nun＝î jèn．
DEF1 water＝DEF2 heat．PRFV
The water is hot．
Literally：The water is heated．
French：L＇eau est chaude．（C）
c．À la kyánmo à hlò
3SG then now 3SG come．to．know．PRFV
$\mathrm{d}^{\prime}$ à ver＝î jen－nèn．
QUOT DEF1 cup＝DEF2 heat－STAT
So now he knows that the cup is hot．
Literally：So now he has come to know that the cup is hot．
context：because he touched it
d．Ń ni à hl⿳亠㐅
1SG FIN 3SG come．to．know．PRFV
kè ń ni à shi bo．
but 1SG FIN 3SG knowledge NEG
I knew him，but I don＇t know him．
Literally：I came to know him，but I have no knowledge of him．
23．Perfectives of Inchoative Verbs：Past Inchoative Reading
a．$\grave{\mathrm{A}} \quad \mathrm{j}=\hat{o}$ ri sós tè̀n．
DEF1 man＝DEF2 FIN big become．PRFV
The man became big．
French：L＇homme est devenu gros．（C）
$\begin{array}{lll}\text { b. } & \text { À } \quad \text { tènn } \quad \text { bel } \\ & \text { 3SG become.PRFV thoughtful } \\ & \text { It's become thoughtful. }\end{array}$
context: I was trying to elicit a phrase meaning 'He is tall.' I was trying to see if I could add a verb (ť̀yn) to a non-verbal predicate $\grave{A} b \varepsilon l$. ('He is tall.') $B \varepsilon l$ can mean 'tall' or 'thoughtful.' The perfective verb has an inchoative reading rather than the stative reading I was aiming for.
c. Ń n' à nun=î jèn. 1SG FIN DEF1 water=DEF2 heat.PRFV I heated the water.
d. Ń kalan kle fá hlò. 1SG read do.IMPF.NOM way come.to.know.PRFV I learnt how to read.
e. Ń fon hlò.

1SG place come.to.know.PRFV I was found.
French: J'étais decouvert. (C)
context: I did something wrong and was in hiding. They found out where I was.


Both the past inchoative reading and the past or present result state reading are predicted if the $L$ tone suffix marks perfective aspect. I already showed that perfectives have a default past interpretation. This means that the inchoative event itself (e.g. becoming) is in the past. However, if something became, it entails that it is. This is the result state. The result state entailment may or may not continue to hold in the present. For example, in (22d) above, the result state no longer holds (although it held at some time in the past). That is why it is not contradictory to say that you came to know someone, but that you no longer know him. I look more at inchoative verbs in 5.4.

### 5.1.3 Conclusion

In this section I argued that the $L$ tone suffix is a perfective aspect marker. It has a default past interpretation, which is expected for perfectives. However, it does not always have a past interpretation (as with performatives). It is not obligatory in all past tense environments. It also combines with the past tense morpheme $i n$. These three tests show that it is not past tense. I then showed that it does not combine with imperfective morphology, and that verbs inflected with the L tone suffix refer to events that have an event time contained within a reference time given by an adverbial. Activity verbs inflected with the $L$ tone suffix have no termination or culmination entailments, while accomplishment and achievement verbs have both. This pattern parallels perfectives in other languages, including English. Table 5.3 summarizes these diagnostics.

Table 5.3 Perfective Diagnostics in Siamou

| Diagnostic | What this Tells Us |  |
| :---: | :---: | :---: |
| consistent with: | Past | Perfective |
| TESTING FOR ORDERING RELATION |  |  |
| 1a. default past interpretation | $\checkmark$ | $\checkmark$ |
| TESTING FOR PAST TENSE |  |  |
| 2a. acceptable in non-past contexts | X | $\checkmark$ |
| 2b. not required in past contexts | X | $\checkmark$ |
| 2c. combines with past | X | $\checkmark$ |
| TESTING FOR PERFECTIVE ASPECT |  |  |
| 3a. incompatible with imperfective | $x$ | $\checkmark$ |
| 3 b . event time contained in temporal adverbial boundaries | X | $\checkmark$ |
| 3c. event non-continuation clause (tests for termination entailment) | $x$ | $\checkmark^{185}$ |
| 3d. event completion clause (tests for culmination entailment) | $x$ | $\checkmark^{186}$ |
| 3e. no interruption interpretation (tests for culmination entailment) | $x$ | $\checkmark^{187}$ |
| 3f. inceptive reading with punctual adverbials | X | $\checkmark$ |
| 3 g . result state reading with inchoative verbs | X | $\checkmark$ |

### 5.2 Imperfective Aspect in Siamou

In this section I analyze the semantics of the Siamou M tone nasal consonant suffix, $-n$. In 5.2.1 I identify this morpheme and in 5.2.2 I test it to show that it encodes imperfective aspect, using the diagnostics from 4.5.

[^114]
### 5.2.1 Mid Tone - $n$ Is Imperfective Aspect in Siamou

In chapter 3 I showed that Siamou has an aspectual morpheme that is marked by a M tone nasal consonant suffix. Unlike the L tone suffix, which is not always realized, $-n$ is always marked. M tone inflected verbs usually have the same segmental form as the bare verb (24a), with the addition of the nasal consonant, but irregular verbs may have a different segmental form than the bare verb (24b). In the following section, I show that this morpheme encodes imperfective aspect.
24.

| a. | bare verb: <br> translation:$\quad$ja <br> catch | tone melody: | M(L) |
| :--- | :--- | :--- | :--- | :--- |

### 5.2.2 Identifying Imperfective Aspect in Siamou

My strategy for showing that $-n$ is an imperfective is similar to that used to show that the L tone suffix is a perfective. First, in 5.2.2.1, I show that $-n$ often has a present interpretation but is not present tense. Then I go through the tests that show that it is imperfective. Although it has a default present tense reading, it is not present tense because it is acceptable in some non-present contexts (5.2.2.2), it is not required in some present contexts (5.2.2.3), and it combines with past tense morphology (5.2.2.4). Next I show that it is incompatible with perfective aspect, which is expected of an imperfective aspect (5.2.2.5). It marks events as continuing beyond the bounds of the reference time (5.2.2.6), it causes no termination or culmination entailments (5.2.2.7), and it may have an in-progress reading (5.2.2.8) or a habitual reading (5.2.2.9). The final test for imperfective aspect is compatibility with stative verbs, as discussed in 4.4.2.10. However, this test is not available for Siamou because, as I argue in 5.4, Siamou does not have stative verbs. Instead, I show that the class of inchoative verbs can have either an inchoative interpretation or a
result state interpretation in the perfective, and always have an inchoative interpretation (and not a result state interpretation) in the imperfective (5.2.10). These tests are summarized in the table below.

Table 5.4 Imperfective Diagnostics

| Diagnostic | What this Tells Us |  |  |
| :---: | :---: | :---: | :---: |
| consistent with: | Present | Imperfective |  |
| TESTING FOR ORDERING RELATION |  |  |  |
| 1a. default present interpretation | $\checkmark$ | $\checkmark$ |  |
| TESTING FOR PRESENT TENSE |  |  |  |
| 2a. acceptable in non-present contexts | $x$ | $\checkmark$ |  |
| 2 b . not required in present contexts | $x$ | $\checkmark$ |  |
| 2c. combines with past | X | $\checkmark$ |  |
| TESTING FOR IMPERFECTIVE ASPECT |  |  |  |
| 3a. incompatible with perfective | X | $\checkmark$ |  |
| 3b. event time exceeds temporal adverbial boundaries | $x$ | $\checkmark$ |  |
| 3c. no culmination/termination entailments | X | $\checkmark$ |  |
|  |  | Prog. | Hab. |
| 3d. in-progress reading | $x$ | $\checkmark$ |  |
| 3e. habitual reading | X |  | $\checkmark$ |
| 3f. acceptable with lexical statives | n/a |  |  |
| 3 g . inchoative reading with inchoative verbs | $x$ | $\checkmark$ |  |

### 5.2.2.1 Imperfective Aspect Has a Default Present Interpretation

Just like the default interpretation for the perfective is past, so the default interpretation for the imperfective is present. The examples in (25) contain $-n$ inflected verbs, and they were all given a present interpretation when elicited in out-of-the-blue contexts. Past interpretations were occasionally accepted as well when specifically asked for.
25.
a.

| À | ri | le | leè-n. |
| :--- | :--- | :--- | :--- |
| 3SG | FIN | food | eat-IMPF |

S/he is eating food. (also accepted: S/he was eating food.)
French: Il mange. (C) (also accepted: Elle mangeait du nourriture. (L))
context: You're watching someone eating and describing the situation.
$\begin{array}{llllll}\text { b. } & \text { Ń } & \text { ni } & \text { múkal } & \text { leè-n } & \text { gbângbâr. } \\ & \text { 1SG } & \text { FIN } & \text { tô } & \text { eat-IMPF } & \text { always }\end{array}$
I always eat tô (corn porridge).
(also accepted: I used to always eat tô (corn porridge).
French: Je manges du tô à tout moment (C)
(J'avais toujours l'habitude de manger du nourriture. (L))
c. Á jón-món kleغ̀-n?

2SG what-thing do-IMPF
What are you doing?
( $\neq$ What were you doing?)
French: Que fais-tu? (C)
( $\neq$ Qu'est-ce que tu faisais? (L))
Ń ni kpàr blíi-n.
1SG FIN mat fold-IMPF
I'm folding a mat.
$\neq \mathrm{I}$ was folding a mat.
French: Je plie une natte (C)
( $\neq$ Je pliais une natte. (L))

### 5.2.2.2 Imperfective Aspect Need Not Be Construed as Present

I show in 5.3.2.4 below that $-n$ combines with past tense $i n$ to form a past imperfective. However, in the right context, $-n$ may be interpreted as a past imperfective even without the help of $i n$. Attempts to get a past reading of $-n$ without past tense $i n$ in direct elicitation were usually unsuccessful (except for (25a-b) above), but I did encounter at least one clear example in conversation (26).
26. Owo ń (ni) láa-n.
no 1SG FIN sleep-IMPF
No, I was sleeping.
context: I asked a woman from our courtyard if she had heard the baby crying the night before. This was her response. I asked her to repeat it to be sure, and there was definitely no in. I am also quite sure she was not sleeping when she told me this, so I deduce that it has a past reading.

The suffix $-n$ also frequently occurs without past tense in, in narratives. It is possible that the time of the narrative is understood to be the "present" and past marking is only required for
events that precede that time, or to set the scene at the beginning of the story. ${ }^{188}$ In narratives, it is more common to have the imperfective without $i n$ than with it. The two examples in (27) are from the Siamou folktales I recorded. They show imperfectives with past interpretation but no past tense ín. ${ }^{189}$
27.

| a. | Yì | tyèl-d $\hat{\varepsilon}$ <br> marriage-enter.PRFV.NOM | $\text { kl } \varepsilon \grave{\varepsilon}-\mathbf{n} .$ |
| :---: | :---: | :---: | :---: |
|  | 3PL |  |  |
| a. | They (inter)married. |  |  |
|  | Ils faisaient le mariage. (C) |  |  |

context: describing the olden days when people, animals and spirits still associated with each other.
b. ...á gbo non klغc̀-n bo.

LOG thing good do-IMPF NEG
He didn't do good.
Il ne faisait pas de bonne chose. (C)
context: describing a bad man
In some instances, imperfectives may even refer to future events, as the examples in (28) show. Example (28a) is a promise made by a son to his father. Example (28b) is describing what happens after someone identifies the thing that they are eating.
28.
$\left.\begin{array}{llllllll}\text { a. } & \ldots \text { d' } & \text { á } & \text { mùlo } & \text { kló } \\ \ldots & \text { die.PRFV }\end{array}\right]$

[^115]b. ...d' à n' à món-ton yin hlò, ...QQUOT 3SG if 3SG thing-owner name know.PRFV
món=î mùmun 0 , dé à ri kwóon le leè-n. thing=DEF2 REL COP QUOT 3SG FIN after food eat-IMPF . . .that if he knew the name of the thing, of that thing there, then after that, he would eat.
French: . . .s'il a connu le nom de la chose, de la chose-là avant qu'il ne mange (C)
context: A young man brings a young woman home to his village, and tells her they have a tradition that before they let someone eat, that person has to know the name of the thing they're eating. If they can't name it, they can't eat it. (As far as I can tell, he's just being a jerk. Later she gets him back.)

### 5.2.2.3 Imperfective Aspect Is Not Required for Contexts That Force a Present Construal

The $-n$ suffix is not required for all present events. For example, verbs inflected with the stative suffix -nèn often (but not always) have a present interpretation but $-n$ is not required in this context.
29. À bwôn=1̂ ri kú-nèn.

DEF1 dog=DEF2 FIN die-STAT
It's a dead dog.
French: C'est un chien mort. (C)
context: You're describing the state of a (formerly) living creature that you notice has become dead.

### 5.2.2.4 Imperfective Aspect Combines with Past Tense

Unlike with the L tone suffix (i.e. the perfective), the default tense reading of $-n$ is quite easy to cancel. The examples in (30) are the same as (25) above, except for the addition of the particle in, which results in a past imperfective interpretation.
30.

| À | ri | le | leè-n | ín. |
| :--- | :--- | :--- | :--- | :--- |
| 3SG | FIN | food | eat-IMPF | PST |
| S/he was eating food. |  |  |  |  |

context: You were watching someone eating earlier and now you describe what you saw.
b. Ń ni múkal leè-n gbângbâr ín. 1SG FIN tô eat-IMPF always PST I used to always eat tô (corn porridge).
c. Á nón-món klcè-n ín?

2SG what-thing do-IMPF PST What were you doing?

| ń | ni | kpàr | blíi-n | ín. |
| :--- | :--- | :--- | :--- | :--- |
| 1SG | FIN | mat | fold-IMPF | PST | I was folding a mat.

The examples in (30) show, first of all that the $-n$ occurs in non-present contexts. It also shows that the imperfective may combine with past morphology, in which case the interpretation is past imperfective. These examples are compelling evidence that the imperfective is not a present tense. If it were, it would not be expected to be allowed to have a past reference time with added morphology, never mind result in a past imperfective reading when it does. On the other hand, if it is an imperfective, we quite sensibly expect such a reading. It is clear from the data provided in this section that analyzing $-n$ as a present tense is not warranted. In the next sections, I argue that the term imperfective is accurate.

### 5.2.2.5 Imperfective Aspect Does Not Combine with Perfective

The $L$ tone suffix (i.e the perfective) does not combine with $-n$. This, of course, also means that $-n$ does not combine with the L tone suffix. The examples from (14) are repeated in (31) below.
31. a. À bisháaŋn=î ri kùr. DEF1 child=DEF2 FIN gain.weight.PRFV The child gained weight.
b. ${ }^{190}$ À bisháayn=î ri kuùr-n. DEF1 child=DEF2 FIN gain.weight-IMPF The child is gaining weight./The child gains weight.
c. * À bisháayn=̂̂ ri kùr-n. DEF1 child=DEF2 FIN gain.weight.PRFV-IMPF
d. * À bisháaŋn=î ri kùur-n. DEF1 child=DEF2 FIN gain.weight.PRFV-IMPF

[^116]
### 5.2.2.6 Imperfective Event Time Exceeds Temporal Boundary of Adverbial Modifier

In this section I show that $-n$ marks verbs as having an event time that extends past the boundaries of the reference time, which is the definition of imperfective.

The following examples show that the verbs inflected with the $-n$ suffix are understood to begin at some point before the beginning of the time denoted by the temporal phrase and end at some point after the end of that time. In this case, the temporal phrase is an adverbial. In the imperfective examples below, the event is not contained in the reference time.
32. ${ }^{191}$ Imperfectives (Event time contains reference time)
a. Ń n' à jùmlay=â gbós-n ín 1 SG FIN DEF1 corn=DEF2 gather-IMPF PST ń kləŋ=̂ mo dír. 1SG field=DEF2 in yesterday Yesterday I was harvesting the corn in my field. Hier, j'étais en train de recolter le maïs dans mon champ. (L)
context (inappropriate): Yesterday morning I started harvesting the corn in my field, and in the evening I finished.
consultant comment: You can't specifically state when it started or when it ended. All you can say is what was being done in the field.
reference time: yesterday
event time: harvesting corn
[HARVESTING.......[YESTERDAY.......]......]

[^117]b. À kló jìr $=\hat{\varepsilon}$ se, DEF1 week pass=DEF2 at à méèl=̂̂ $\quad$ r' à won=î tel $\varepsilon$ rèn ín. DEF1 woman.PL=DEF2 FIN DEF1 hibiscus=DEF2 peel-IMPF PST Last week, the women were shelling the hibiscus.
French: La semaine passé les femmes était en train de décortiqué le dah. (L)
context (inappropriate): At the beginning of last week, the women started shelling hibiscus. At the end of the week, they finished.
reference time: last week
event time: shelling hibiscus
[SHELLING. . . . . . [LAST WEEK. . . . . . ]. . . . . ]

$\begin{array}{lllllll}c . & \text { Ń } & \text { ni } & \text { dír } & \text { dénno } & \text { Musa sádi. } \\ & \text { 1SG } & \text { FIN } & \text { yesterday } & \text { go.PRFV? } & \text { Musa } & \text { home }\end{array}$

Mún tè̀n-nèn gbâr ye ín,
1SG.EMPH be-STAT time at PST
à r à ló=ô tokukúur-n ín.
3SG FIN DEF1 house=DEF2 paint-IMPF PST
Yesterday I went to Musa's place. While I was there, he was painting the house.
context (inappropriate): He painted the whole house while I was there, beginning after I got there and finishing before I left.
consultant comment: It's not certain that he finished.
reference time: yesterday when I was at Musa's house
event time: painting the house
[AT MUSA'S HOUSE . . . . . . [PAINTING. . . . . . . . . . . . ]
d. Mún jìnèn gbâr ye à sùnkwó $=\hat{=}$ ô ri hlec̀-n ín. 1SG wake.up time at DEF1 rooster=DEF2 FIN cry-IMPF PST
When I woke up, the rooster was crowing.
context: The rooster was already crowing when I woke up.
reference time: when I woke up
event time: when the rooster was crowing
[ROOSTER CROWING. . . . . . .[WAKING UP. . . . . . ]. . . . . ]
DEF1 man=DEF2 NFP DEF1 house=DEF2 door=DEF2 close.PRFV time at
When the man closed the door,
à klı̀ron $j 0=\hat{\jmath} \quad r^{\prime}$ án kpêyl=î dwós-n ín. DEF1 old.man man=DEF2 FIN POSS cowrie.shell.PL=DEF2 count-IMPF PST the old man was counting his money.
context: The man saw him counting the money before he closed the door. reference time: closing the door event time: counting the money
[COUNTING THE MONEY. . . . . .[CLOSING THE DOOR. . . . . .]..... ]

### 5.2.2.7 Imperfective Lacks a Culmination Entailment

Imperfectives, unlike perfectives, have no termination or culmination entailments for any event type. The Siamou suffix - $n$ matches these requirements. Activity verbs inflected with $-n$ are compatible with clauses stating that the event continued (33a) and that the event is not yet finished (33b). The same is true for accomplishment verbs (34). Achievements, however, are still infelicitous with these types of clauses, likely because they are instantaneous, so anything that requires them to have duration is infelicitous (35).

## 33. Activity

$\begin{array}{lllll}\text { a. } & \text { A } & \text { ri } & \text { scèn-n } & \text { ín, } \\ & \text { 3SG } & \text { FIN } & \text { dance-IMPF } & \text { PST }\end{array}$
fù nì à fon scèn-n yé tòmò-tomo. that and 3 SG be.at dance-IMPF still every.time He was dancing and he's still dancing.
$\begin{array}{lllll}\text { b. } & \text { À } & \text { ri } & \text { scèn-n } & \text { ín, } \\ & \text { 3SG } & \text { FIN } & \text { dance-IMPF } & \text { PST }\end{array}$
3SG FIN dance-IMPF PST
fù nì à wo kónn ken senn to bo. that and 3 SG NEG finish.PRFV yet dance at NEG He was dancing and he's not finished dancing yet.

[^118]34. Accomplishment

$\begin{array}{lllllll}\text { a. } & \text { Mún } & \text { dye-mél=1 } & \text { ri } & \text { kpàr } & \text { hlé } \ell \text {-n, } & \text { ín } \\ \text { 1SG.EMPH } & \text { child-woman=DEF2 } & \text { FIN } & \text { mat } & \text { weave-IMPF } & \text { PST }\end{array}$ fù nì à fon à hléعn-n yé tòmò-tomo. that and 3 SG be.here 3 SG weave-IMPF still every.time My daughter was weaving a mat and she's still weaving it.
b. Mún dye-mél=î ri kpàr hlé $\varepsilon$ y-n ín, 1SG.EMPH child-woman=DEF2 FIN mat weave-IMPF PST $\begin{array}{lllllllll}\text { kè, } & \text { à } & \text { wo } & \text { la } & \text { à } & \text { tín kj́nn } & \text { ken } & \text { bo. }\end{array}$ but 3SG NEG then 3SG weave finish.PRFV yet NEG My daughter was weaving a mat and she's not done weaving it yet.
35. Achievement
a. \# ì jimiìn gbon mónblî=1 ri loò-n ín DEF1 people.PL take.PRFV.NOM truck=DEF2 FIN arrive-IMPF PST

| à | líi | fon=1 | mo, |
| :--- | :--- | :--- | :--- |
| DEF1 | stop.IMPF.NOM | place=DEF2 | in |

fù nì à fon loò-n yé.
that and 3 SG be.here arrive-IMPF still \# The bus was arriving at the station and it's still arriving.
b. \# À jimiìn gbon mónblî=1̂ ri loò-n ín DEF1 people.PL take.PRFV.NOM truck=DEF2 FIN arrive-IMPF PST

| à | líi | fon=1 | mっ, |
| :--- | :--- | :--- | :--- |
| DEF1 | stop.IMPF.NOM | place=DEF2 | in |

kè à wo lò kónn ken bo.
but 3SG NEG arrive finish.PRFV yet NEG
\# The bus was arriving at the station and it's not finished arriving yet.
When a past imperfective clause is followed by a clause indicating another event, the second event is understood to be an interruption to the imperfective event, indicating that the event in the first clause was never completed. This also shows that imperfectives lack culmination entailments. In (36), I show that $-n$ inflected verbs follow this pattern. The event of washing clothes in (36a) is interrupted by the mother calling.
36.

| a. | À | $\mathrm{r}^{\prime}$ | à | $\begin{aligned} & \mathrm{w} \hat{\varepsilon}=\hat{\varepsilon} \\ & \text { cloth.PL=DEF2 } \end{aligned}$ |  |  | lóo-n <br> wash-IMPF | $\begin{aligned} & \text { ín } \\ & \text { PST } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3SG | FIN | DEF1 |  |  |  |  |  |
|  | à | n ¢ $=\hat{\text { on }}$ |  | $\mathrm{k}^{\prime}$ | à | f ¢́gn. |  |  |
|  | 3SG | moth | = DEF2 |  | 3SG |  |  |  |
|  | She | as was | ing the | cloth | and then | n her | mother called |  |

consultant comment: While she was washing the clothes, her mother called.
b. Ń n' à yenìníin=î tóon-n ín, nò ki tónn. 1SG FIN DEF1 tomato.PL=DEF2 gather-IMPF PST rain NFP fall I was gathering the tomatoes and then it rained.
French: Je ramassais la tomate et la pluie a tombé. (C)
context: I was still gathering the tomatoes when it started to rain. inappropriate context: It started raining after I finished gathering the tomatoes.
consultant comment: They (i.e. gathering tomatoes and rain falling) happened at the same time.
$\begin{array}{llllllllll}\text { c. } & \text { N } & \text { ni } & \text { sćbê } & \text { nwáar-n } & \text { ín, } & \text { ń } & \text { ki } & \text { ló } & \text { sonn. } \\ & \text { 1SG } & \text { FIN } & \text { paper } & \text { write-IMPF } & \text { PST } & \text { 1SG } & \text { NFP } & \text { house } & \text { buy }\end{array}$ I was writing a book and then I bought a house.
context: I bought the house while I was still writing the book inappropriate context: I bought the house after I finished writing the book.

This is in contrast to what occurs with the perfective (as shown previously in (22)) where the event is understood to be completed before the event of the second clause takes place.

### 5.2.2.8 Imperfective Has an In-Progress Reading

We have already seen that $-n$ inflected verbs can refer to events that are in progress, ${ }^{193}$ either in the present without $i n$ (37a-b), or in the past with in (37c-d). ${ }^{194}$

[^119]37.

context: talking about a thief trying to get in
b. Be ń kon-ná bo kè ń sébe nwáar-n. NEG.IMP 1SG mouth-hear NEG because 1SG paper write-IMPF Don't bother me because I'm writing a letter.
context: Father asking his son not to disturb him because he's busy.

c. Mún $\quad \begin{aligned} & \text { by } \\ & \text { 1SG.EMPH } \\ & \text { come.PRFV }\end{aligned} \quad \begin{aligned} & \text { gbâr } \\ & \text { time }\end{aligned}$ ye,
à $\mathrm{r}^{\prime}$ án $\mathrm{b}_{\mathrm{o}=\hat{\jmath} \text { twoy-n ín. }}$
3SG FIN POSS house=DEF2 build-IMPF PST
When I got there, he was building his house.
d. Mún gbâr=î mún ye dé à ló=ô mo, 1SG.EMPH time=DEF2 REL at enter.PRFV DEF1 house=DEF2 in $\begin{array}{llll}\text { à } & \text { ri } & \text { kpé } \varepsilon \text { nl-n } & \text { ín. } \\ 3 \mathrm{SG} & \text { FIN } & \text { cough-IMPF } & \text { PST }\end{array}$
3 SG FIN cough-IMPF PST
When I came in the house he was coughing.
context: He was coughing already when I came in.
These examples show that $-n$ inflected verbs are compatible with an in-progress reading which means that they may mark imperfective aspect, or progressive aspect.

### 5.2.2.9 Imperfective Has a Habitual Reading

In order to show that $-n$ has a wider range of meaning than just progressive, I show that it is also felicitous in a habitual context, either as a present habitual (38a-b) or a past habitual (38c-d). ${ }^{195}$

[^120]38. a. $\grave{\text { a }}$ ri mycl kleغ̀-n. 3SG FIN voice make-IMPF It makes noise.
context: What happens if you tease a cat?
b. Solo kafe laà-n gbângbâr.

Solo coffee drink-IMPF always
Solo always drinks coffee.
c. À sćbê mo-nwáar-n ín.

3SG paper in-write-IMPF PST
He wrote letters.
context: Last year your brother worked at an office. What did he do there?
d. Gbângbâr lamusa núkur, Fòn̂ kro láa-n ín. always Thursday evening Tim knife sharpen-IMPF PST Every Thursday evening, Tim sharpened knives.

### 5.2.2.10 A Test That Does Not Apply in Siamou: Imperfective Has Stative Reading

The data in the previous section show that $-n$ is indeed an imperfective, since progressives are not expected to have habitual interpretations. As an imperfective, according to cross-linguistic patterns (Comrie 1976) it is expected to be compatible with lexical statives as well. However, as I show in 5.4, Siamou does not have stative verbs. Therefore this test does not apply. Instead, Siamou uses other strategies to express stativity, in particular, the class of inchoative verbs first discussed in 5.1.2.9. When these verbs are inflected with perfective aspect, they sometimes (but not always) have a result state interpretation. When these verbs are inflected with imperfective $-n$, the result state interpretation does not arise, but only the inchoative interpretation (39).

| ii. | *Ń | nun | gbs | à | lé $\varepsilon$. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1 SG | water | drink | DEF1 | morning |
|  | intended reading: | I drink | water in | the morning. |  |

In order to express the intended meaning of (ii), a "dummy verb," be ('come'), is inserted, as in (iii).
iii. N b $\varepsilon$ nì nun $\mathrm{gb} \varepsilon$ lé .

1SG come and water drink morning
I drink water in the morning.
39. Imperfectives of Inchoative Verbs: Inchoative Reading

| a. | Ton iron | nì nén <br> if put. | nén <br> put.PRFV | $\begin{array}{ll} \text { nyen mo } \\ \text { fire } \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | à | ná=â | ri | tcèn-n | kpz̀nl |
|  | DEF1 | face $=$ DEF2 | FIN | become-IMPF |  |
|  | yì | ki | kwóon | à | tún. |
|  | 3 PL | NFP | after | 3SG | form |

If iron is put into fire, the surface becomes red, and then you form it.
(Thiessen et al. n.d)
b. Mél má $\mathrm{n}^{\prime}$ á kàrwon fyé,
woman other FIN LOG.POSS breast appear.PRFV
à mél=î ri tcèn-n bel són.
DEF1 woman=DEF2 FIN become-IMPF tall big
If a(ny) woman grows breasts, the woman becomes tall.
French: Si d'autre femme pousse des seins, la femme gagne une grande taille.

$$
(\mathrm{C})^{197}
$$

c. $\grave{\mathrm{A}} \quad \mathrm{nun}=\hat{1}$ j $\varepsilon \varepsilon$-n.

DEF1 water=DEF2 heat-IMPF
The water is heating/heats.
d. Ń ni nun jec-n à bishéc̀n tyel o. 1SG FIN water heat-IMPF DEF1 child.PL.DEF2 showerCOP I'm heating water for the children's shower. (Thiessen et al. n.d)
e. À sébe keln fá hloo-n ín.

3SG book read.IMPF.NOM way know-IMPF PST
She was learning to read.
f. Nyen ton kpeèyl-n.
fire iron redden-IMPF
Fire reddens iron. (Thiessen et al. n.d)

### 5.2.3 Conclusion

To summarize, I have shown that $-n$ marks imperfective aspect in Siamou. It has a default present interpretation, but it is not present tense, which is proven by three things: it is acceptable

[^121]in some non-present contexts, it is not required in all present contexts, and it combines with past morphology to yield a past imperfective. I also show that it is incompatible with perfective morphology (the L tone suffix). I show that verbs inflected with $-n$ refer to events that are not contained within the reference time, and that they do not have culmination or termination entailments. As expected for imperfectives, $-n$ inflected verbs are compatible with in-progress and habitual readings, but they do not occur with stative verbs because Siamou does not have stative verbs. This information is summarized in Table 5.5.

Table 5.5 Imperfective Diagnostics in Siamou

| Diagnostic | What this Tells Us |  |  |
| :---: | :---: | :---: | :---: |
| consistent with: | Present | Imperfective |  |
| TESTING FOR ORDERING RELATION |  |  |  |
| 1a. default present interpretation | $\checkmark$ | $\checkmark$ |  |
| TESTING FOR PRESENT TENSE |  |  |  |
| 2a. acceptable in non-present contexts | X | $\checkmark$ |  |
| 2 b . not required in present contexts | X | $\checkmark$ |  |
| 2c. combines with past | X | $\checkmark$ |  |
| TESTING FOR IMPERFECTIVE ASPECT |  |  |  |
| 3a. incompatible with perfective | $x$ | $\checkmark$ |  |
| 3b. event time exceeds temporal adverbial boundaries | X | $\checkmark$ |  |
| 3c. no culmination/termination entailments | X | $\checkmark$ |  |
|  |  | Prog. | Hab. |
| 3d. in-progress reading | $x$ | $\checkmark$ |  |
| 3e. habitual reading | X |  | $\checkmark$ |
| 3f. acceptable with lexical statives |  | n/a |  |
| 3 g . inchoative reading with inchoative verbs | $x$ | $\checkmark$ |  |

### 5.3. Identifying Perfective and Imperfective Aspect in Kru

In this section I look briefly at semantic characteristics of the perfective and imperfective in different Kru languages. Within a language family, aspectual categories may have similarities not only in the morpho-phonology and morpho-syntax, but also in the semantics. As in chapter 3, information about Kru is mainly from Marchese (1986).

### 5.3.1 The Semantics of Perfective Aspect in Kru

Marchese (1986) observes that in Kru languages there is a verb form that has a past perfective interpretation for eventive verbs. Although she initially calls these forms perfective she later argues that the term perfective is inadequate and shows that they are actually factatives, similar
to the kind described by Welmers (1973) (see section 5.5). According to Marchese (1986:33), "the factative indicates past punctiliar action when referring to action verbs, but indicates present or undefined time for stative verbs." Although perfectives usually have a preference for a past tense interpretation, for factatives the preference is even stronger in the case of non-stative verbs, but does not apply to stative verbs, which usually have a present interpretation.

All Kru languages in Marchese's (1986) study for which she has the relevant information ${ }^{198}$ have a perfective that fits the description given for factatives. Kru factatives are unmarked in some languages, and marked by a low tone in other languages. Examples from Krahn (which has an unmarked factative) and Godié (which has a low tone factative) are given in (40-41). In (40), the factative with a non-stative verb has a past interpretation, and in (41), the factative with a stative verb has a present interpretation. ${ }^{199}$
40. with a non-stative verb

| a | $\tilde{\bar{O}}$ bà | dōbō. | (Krahn; Marchese 1986:33) |
| :--- | :--- | :--- | :--- |
| they whittle.PRFV | mortar |  |  |
|  |  |  |  |
|  | They whittled a mortar. |  |  |

b. 0 kû. he die.PRFV He died.
41. with a stative verb

| a. |  | jūbō | $\mathrm{d} \bar{\varepsilon}$. | (Krahn; Marchese 1986:31) |
| :---: | :---: | :---: | :---: | :---: |
|  | they | know.PRFV | thing |  |
|  | They know something |  |  |  |
| b. | $\tilde{\varepsilon}$ | zi . |  | (Godié; Marchese 1986:31) |
|  | it | red.PRFV |  |  |
|  | It is r |  |  |  |

In Section 5.5, I look at factatives in more detail. I argue that in Siamou, the factative effect is not needed to explain the present stative interpretation of certain perfective-marked

[^122]verbs. Instead, these verbs can be analyzed as inchoative verbs that sometimes have a result state interpretation when they are inflected for perfective aspect.

It is possible that this same analysis would work in other Kru languages as well. Perhaps Kru languages actually have no stative verbs, but only inchoative verbs that often have a stative interpretation (especially in the perfective). One clue in favour of this analysis comes from Saunders (2009), who observes that in Kouya the perfective of the verb $z a$ (redden) has a stative interpretation, either present or past (42). I show in 5.5 that this analysis fits for the Siamou language data.
$42 .{ }^{200}$

| we | -za |
| :--- | :--- |
| it | redden |

(from Saunders: 2009:182)
It is/was red.

### 5.3.2 The Semantics of Imperfective Aspect in Kru

Most Kru languages have both an imperfective aspect and a progressive aspect (Marchese 1986:25), with the progressive usually marked periphrastically using a locative verb. This is not unusual. Spanish, for example, also has both an imperfective and a progressive (Comrie 1976), as does French (43).
43. a. French Imperfective

Jean chante.
John sing.3SG.IMPF.PRES
John is singing./John sings.
b. French Progressive

| Jean est | en | train | de | chant-er. |
| :--- | :--- | :--- | :--- | :--- |
| John be.3SG.PRES | in | process | of | sing-INF |
| John is singing. |  |  |  |  |

Imperfectives in Kru may have both continuous (progressive) and habitual interpretations (44). They may also refer to non-present events (45).

[^123]
## 44. Imperfective

$\begin{array}{llllll}\text { a. } & \&^{201} & \bar{\jmath} & \overline{\mathrm{f}} & \begin{array}{l}\text { tl } \bar{\varepsilon} . \\ \\ \end{array} & \text { he } \\ & \text { eat.IMPF } & \text { snake }\end{array} \quad$ (Godié, Marchese 1986:39)
i. $\quad \mathrm{He}$ (habitually) eats snakes.
ii. He is eating a snake.
b. ${ }^{202}$ \& ne du-i ne ne. (Grebo, Innes 1966:74)

I pound-IMPF it be
i. I pound it (habitually).
ii. I am pounding it.
45. Past Imperfective
a. n mle-a suklu.
(Koyo, Marchese 1986:39)
I go.IMPF-REC school
I used to go to school.
b. né dú-ī-dà nè ne. (Grebo, Marchese 1986:39)

I pound-IMPF-T it be
I was pounding it.

The progressive (46), on the other hand, only refers to ongoing action and cannot have a habitual reading, according to Marchese (1986). ${ }^{203}$

## 46. Progressive

a. $\quad 0$ n $\varepsilon$ kə dũ lá.
(Krahn; Marchese 1986:64)
she be-at rice pound NOM
She is pounding rice.
b. e ne ne ji saka. (Aīzi, Marchese 1986:65)
he be-at ? eat rice
He is eating rice.
c. 0 ku sukí 6li d . she be-at rice pound place She is pounding rice.

[^124]Kru imperfectives are mostly like Comrie's imperfectives described in 4.5.2.8. That is to say, they have in-progress readings and habitual readings. However, I did not find examples of imperfectives of stative verbs in any Kru language described in the literature. My prediction is that these so-called stative verbs in Kru are actually inchoatives. If this is true, these verbs should have an imperfective inchoative interpretation when inflected for imperfective aspect.

### 5.4 A Curious Gap: Siamou Lacks Stative Verbs

It would be good to have a complete and well-defined inventory of event types in a language before attempting an analysis of grammatical aspect. Unfortunately, I do not have enough data to provide information about all of Siamou's event types. However, I would like to discuss the status of stative verbs in Siamou in the following sub-sections. As for the remaining event types, I assume for now that Siamou has the same standard Vendler (1957) event types, namely: activities, achievements, and accomplishments.

According to the data available at this time, it appears that Siamou has no stative verbs. Instead, there are at least four other strategies for expressing stativity: non-verbal predicates (5.4.1), the grammatical aspect suffix -nèn (5.4.2), imperfectives of certain eventives (5.4.3), and perfectives of inchoative verbs (5.4.4).

### 5.4.1 Being a Stative Predicate: Lexical Statives Are Always Non-Verbal

The first strategy to express stativity is non-verbal stative predicates, such as the ones in (47-49). This type of predicate is very common in Siamou. Some are formed with a post-positional phrase (47), others with a copular particle $\rho(48),{ }^{204}$ and still others with adjectives (49) or the noun shi 'knowledge/life (50).

The phrases in ( $47 \mathrm{~g}-\mathrm{i}$ ) express wanting. The thing that is wanted is in brackets.
47. Non-verbal Stative Predicates using Post-positional phrases

| a. | Klô | ri | ń | to. |
| :--- | :--- | :--- | :--- | :--- |
|  | hunger <br> elicited: <br>  <br> l'm hungry. | ISG | to |  |

[^125]b. Nìn à nìm $\hat{\varepsilon}=\hat{\varepsilon}$ to
thirst DEF1 animal.PL=DEF2 to
The animals are thirsty. (Thiessen et al. n.d)
literally: Thirst is to the animals.
c. Àni=̂ togbo ri ń se.

DEM=DEF2 necessity FIN 1 SG to
elicited: I need that.
literally: This is a necessity to me.
context: Your response to someone who wants your hat.
d. Mún ǹ jézn mo dé Tén jir o. 1SG.EMPH POSS thought in QUOT Tin person COP elicited: I think he's from Tin. literally: In my thoughts he is a Tin person.
e. Ákún náa fon myźn to.

2SG.EMPH eye be.here what at elicited: What do you see?
literally: Your eye is located at what?
Ń jáa fon naâl to.

1SG eye be.here cow.PL at elicited: I see cows.
literally: My eye is located at cows.
context: What do you see when you look out your window?
f. Nal ben bel ble ben to.
cow horn long goat horn to
Cow horns are longer than goat horns. (Thiessen et al. n.d) literally: Cow horns are long to goat horns.
g. Ń barana besé.

1SG banana behind
I want a banana.
literally: I am behind a banana.
context: This was said to me by a child from Téndenno as she eyed the bananas on the counter.
$\begin{array}{llllllllll}\text { h. } & \text { Ń } & \text { n' } & \text { à } & \text { se } & {[\text { ń }} & \text { ki } & \text { don } & \text { klonn } & \text { se. }] \\ & 1 \text { SG } & \text { FIN } & \text { 3SG } & \text { to } & 1 \text { SG } & \text { NFP } & \text { go } & \text { field } & \text { to }\end{array}$ elicited: I want to go to the fields. literally: I am at that I go to the fields.
i. $\mathrm{N} \quad \mathrm{ni}$ [kloŋn se kóənn] kpeŋn-ta. 1SG FIN field to go.IMPF.NOM hand-on elicited: I want to go to the fields. literally: I have my hand on going to the fields.
48. Non-Verbal Stative Predicates using the Copular Particle $\supset$
a. Mún fù ro.

1SG.EMPH part COP
That's mine.
literally: (It) is my part.
b. À̀ni=̂̂ tabli=̂̂ ki mún fù ro. DEM=DEF2 table=DEF2 NFP 1SG.EMPH part COP This table is mine.
c. Àni=î ki mún tabli=î o. DEM=DEF2 NFP 1SG.EMPH table=DEF2 COP
This is my table.
d. Yéeŋn no.
fish COP
That's a fish.
e. À klòron $j 0=\hat{o}$ shín- 10 =̂ ki ló bónbeln o. DEF1 old.man man=DEF2 lie.down-house=DEF2 NFP house round COP The old man's sleeping hut is round. (Thiessen et al. n.d))
49. Non-Verbal Stative Predicates using Adjectives
a. À gbo ri mún tìyà. DEF1 thing FIN 1SG.EMPH pleasing elicited: I love it. literally: The thing of it is pleasing to me.
b. À náa to ri nar.

3SG eye to FIN sharp
elicited: He can see far.
literally: To his eyes it is sharp.
The noun shi is the most common way to express the present state of knowing (50).
However, there is also a verb shu 'come to know' which sometimes has a result state reading when inflected for perfective aspect (see 5.4.4).
50. Non-Verbal Stative Predicates using the Noun shi 'knowledge/life'
a. $\mathrm{N}^{\prime} \quad \mathrm{n}^{\prime}$ à shi.

1SG FIN 3SG knowledge
I know (it).
literally: I have knowledge of it.
context: You came to tell me something I already know, so I save you the trouble of repeating it by telling you I already know.
b. $\mathrm{N} \quad \mathrm{n}^{\prime}$ à shi bo. 1SG FIN 3SG knowledge NEG I don't know him. literally: I do not have knowledge of him.
c. Ń kalan kle fá shi. 1SG read do.IMPF.NOM way knowledge I know how to read.
literally: I have knowledge of the way of reading.
d. $\grave{\text { A }} \quad \mathrm{r}^{\prime}$ à shi dé ń blaà-n.

3SG FIN 3SG knowledge QUOT 1SG come-IMPF
He knows that I'm coming.
literally: He has knowledge that I am coming.
French: Il sait que je viens. (C)

### 5.4.2 Creating a Stative Predicate 1: The Stativizing Suffix -nè̀n Creates Stative Verbs

The second strategy for expressing stativity is the verbal suffix -nèn, which gives predicates a stative interpretation, as in (51). This suffix is part of Siamou's grammatical aspect paradigm. (See 2.2.3.1 and 3.1.2 for more information about -nèn.)
51. a. À ri be-nèn.

3SG FIN come-STAT
She has come. (i.e. She is here/there.)
b. À nun=î jèn-nèn.

3SG water=DEF2 heat-STAT
The water is hot.
French: L’eau est dans un état chaude. (C)
c. À mél=̂̂ ri tè̀-nèn bel sóv.

DEF1 woman=DEF2 FIN become-STAT tall big
The woman is tall.
French: La femme à la taille grande. (C)

### 5.4.3 Creating a Stative Predicate 2: The Contribution of the Imperfective

There are a number of verbs in Siamou that usually have an eventive (i.e. dynamic) reading, but which also sometimes have a stative reading. In the examples below, I show first the eventive reading of the verb (52a, 53a), and then the stative reading (52b, 53b). Often the eventive reading is the literal meaning and the stative reading is figurative. At this point I do not know of any verbs that only have a stative reading when inflected for imperfective aspect, but only verbs that have a stative reading as an alternative meaning of an eventive verb. These examples are interesting and worth looking into, but I do not consider them further in this dissertation.
52. a. Ń dír dénno nan jén-ké.

1sg yesterday go.PRFV? wood look.for-go
Yesterday I went to look for wood.
b. Mún $\mathrm{n}^{\prime}$ à jé $\begin{aligned} & \text {-n. }\end{aligned}$

1SG.EMPH FIN 3SG look.for-IMPF
I want it.
literally: I'm looking for it.
context: You see a really pretty piece of cloth at the market that you want.
53.

| a. | Mún | wo | lò | Jìsa | dír | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1SG.EMPH | NEG | arrive.PRFV | Diossogo | yesterday | NEG |
|  | I didn't get to | Diossogo yesterday. | (Thiessen et al. n. ) |  |  |  |

b. À (ri) loò-n bo.

3SG FIN arrive-IMPF NEG
He can't do it.
literally: He doesn't arrive.

### 5.4.4 Creating a Stative Predicate 3: Result State Implicatures

The fourth strategy for expressing stativity involves the class of Siamou inchoative verbs. ${ }^{205}$ Inchoative verbs sometimes have a result state reading. Verbs in this set include teyn ('become/be'), jen ('heat/be hot'), shu ('come to know/know'), and kpeyln ('redden/be red'). When these verbs are inflected for imperfective aspect they do not have a result state reading, but only an inchoative reading (54).

[^126]54. Imperfectives of Inchoative Verbs: Inchoative Reading

$\left.\begin{array}{llllllll}\text { a. } & \begin{array}{l}\text { Ton } \\ \text { iron }\end{array} & \begin{array}{l}\text { nì } \\ \text { if }\end{array} & \begin{array}{l}\text { nén } \\ \text { put.PRFV }\end{array} & \begin{array}{l}\text { nyen } \\ \text { fire }\end{array} & \text { mo } & \text { in }\end{array}\right]$

If iron is put into fire, the surface becomes red, and then you form it.
(Thiessen et al. n.d)
b. Mél má n' á kàrwon fyé,
woman other FIN LOG.POSS breast appear.PRFV
à mél=î ri teغ̀n-n bel sóo.
DEF1 woman=DEF2 FIN become-IMPF tall big
If a(ny) woman grows breasts, the woman becomes tall.
French: Si d'autre femme pousse des seins, la femme gagne une grande taille. (C)
c. À nun=î je $\mathrm{A} \varepsilon$-n.

DEF1 water=DEF2 heat-IMPF
The water is heating/heats.
d. Ń ni nun jec-n à bishê̂y ty 0. 1SG FIN water heat-IMPF DEF1 child.PL.DEF2 showerCOP I'm heating water for the children's shower. (Thiessen et al. n.d)
e. À sćb $\varepsilon$ k ln fá hlos-n ín. 3SG book read.IMPF.NOM way know-IMPF PST She was learning to read.
f. Nyen ton kpeènl-n.
fire iron redden-IMPF
Fire reddens iron. (Thiessen et al. n.d)
When these verbs are inflected for perfective aspect, they sometimes have an inchoative reading and sometimes a stative reading. The inchoative reading is always interpreted as past, but the stative reading may be interpreted as past or present. In (55), I show some inchoative readings, and in (56) some stative readings. Examples (56a-c) show present stative readings, and (56d) shows that hlj (come.to.know.PRFV) can have a past stative reading as well.
55. Perfectives of Inchoative Verbs: Past Inchoative Reading
a. $\grave{\mathrm{A}} \quad \mathrm{j}=\hat{\mathrm{o}}$ ri sós tègn. DEF1 man=DEF2 FIN big become.PRFV
The man became big.
French: L'homme est devenu gros. (C)
b. À tènn bel.

3SG become.PRFV thoughtful It's become thoughtful.
context: I was trying to elicit a phrase meaning 'He is tall.' I wanted to see if I could add a verb (tèyn) to a non-verbal predicate $\grave{A} b \varepsilon l$. ('He is tall.') $B \varepsilon l$ can mean 'tall' or 'thoughtful.' The perfective verb has an inchoative reading rather than the stative reading I was aiming for.
c. Ń $\mathrm{n}^{\prime}$ à nun=î jèn.

1SG FIN DEF1 water=DEF2 heat.PRFV
I heated the water.
d. Ń kalan kle fá hlò.

1SG read do.IMPF.NOM way come.to.know.PRFV
I learnt how to read.
e. Ń fon hlò.

1SG place come.to.know.PRFV
I was found.
literally: My location became known.
French: J'étais decouvert. (C)
context: I did something wrong and was in hiding. They found out where I was.
f. À ri gbâr=̂̂ mun ye à hlò

3SG FIN time=DEF2 REL at 3SG come.to.know.PRFV
d' àkun ni klò.. .
QUOT 3SG.EMPH FIN old
When he realized that he was old. . .

56．Perfectives of Inchoative Verbs：Stative reading（past or present）
a．À nì mano tènn， 3SG if like．that become．PRFV
ń bè món dyàn 0 á kén－bê． 1SG MOD thing other with 2SG give－PRSP2 If that＇s the way it is，I＇m going to give you something． literally：If it has become like that，I＇m going to give you something．
context：Vultures offer a man a gift for giving them fresh meat．
b．À nun＝̂̂ jèn．
DEF1 water＝DEF2 heat．PRFV
The water is hot．
L＇eau est chaude．（C）
c．À la kyánmo à hlò
3SG then now 3SG come．to．know．PRFV
$\mathrm{d}^{\prime}$ à ver＝î jen－nغ̀n．
QUOT DEF1 cup＝DEF2 heat－STAT
So now he knows that the cup is hot．
literally：So now he has come to know that the cup is hot．
context：because he touched it
d．Ń ni à hl⿳亠㐅
1 SG FIN 3SG come．to．know．PRFV
kè ń ni à shi bo
but 1SG FIN 3SG knowledge NEG
I knew him，but I don＇t know him．
literally：I came to know him，but I have no knowledge of him．
These verbs can also have both an inchoative reading（57a）and a result state reading （57b）when they are inflected with prospective aspect morphology．

57．a．prospective aspect：inchoative reading
$\begin{array}{lllll}\text { À } & \text { bè } & \text { teyn－bê } & \text { bel } & \text { sóว } .\end{array}$
3SG MOD become－PRSP2 tall big
That will become tall．
French：Ça va devenir grand de taille．（C）
b. prospective aspect: stative reading

| Dmézn | bè | teŋn-bè | húnmo. |
| :--- | :--- | :--- | :--- |
| 1PL.EMPH | MOD | become-PRSP2 | here |

We are going to stay here.
context: That is why this place is called Tin-because our ancestors stopped on this spot and said they would stay here.

When there is a contrast between an active predicate and passive predicate, ${ }^{206}$ the active may be more likely to have an inchoative interpretation while the passive is more likely to have a stative interpretation. This is exemplified in (58) by the verb jèn ('heat.PRFV'). Example (58a) is transitive and active. It is interpreted as a past inchoative. Example (58b) is intransitive and passive and it is interpreted as a present stative.
58. a. Ń n' à nun=î jèn. 1SG FIN DEF1 water=DEF2 heat.PRFV I heated the water.
French: J'ai chauffé l'eau. (C)
b. À nun=î jèn.

DEF1 water=DEF2 heat.PRFV
The water is hot.
French: L'eau est chaude. (C)
In some ways, Siamou inchoative verbs resemble what Bar-el (2005) refers to as inchoative states in Skwxwú7mesh. Recall from 4.3.4 that inchoative states are made up of an inchoative sub-event (BECOME(P)) and a stative sub-event (P), as shown in (59).
59. inchoative state: $\lambda \mathrm{e} . \exists \mathrm{e}_{1} \exists \mathrm{e}_{2}\left[\mathrm{e}=\left(\mathrm{e}_{1} \mathrm{Ue}_{2}\right) \wedge(\operatorname{BECOME}(\mathrm{P}))\left(\mathrm{e}_{1}\right) \wedge \mathrm{P}\left(\mathrm{e}_{2}\right)\right]$

Both Siamou inchoatives and Skwxwú7mesh inchoative states sometimes have an inchoative reading and sometimes a stative reading. However, Siamou inchoatives differ from inchoative states in that they only have an inchoative reading in the imperfective whereas Skwxwú7mesh inchoative states only have a stative reading in the imperfective.

One possible way to account for this difference is to assume that inchoatives do not have a stative sub-event, like inchoative states do. Instead, for Siamou inchoatives, the stative reading

[^127]arises as an entailment. The inchoative refers to entry into a state, which entails that the state holds, or at least that it held for some period of time. Support for this comes from the fact that the inchoative reading is always available, but the stative reading is not (since imperfectives only have the inchoative reading). ${ }^{207}$ The example in (60) shows that it is not necessary that the state hold currently, since an assertion that the state no longer holds is acceptable.
60. Ń ni à hlò
1SG FIN 3SG come.to.know.PRFV
kè ń ni à shi bo
but 1SG FIN 3SG knowledge NEG
I knew him, but I don't know him.
literally: I came to know him, but I have no knowledge of him.
Further support for this comes from the fact that inchoatives in other languages, such as English, also have a result state entailment. For example, the utterance in (61) entails that I was hungry for a certain period of time.
61. I got hungry.

It is possible that there is no fundamental difference between English inchoatives and Siamou inchoatives. The difference lies in the lack of stative main verbs in Siamou, which makes the stative reading of the perfective-marked inchoative more salient simply because there is no other way to say it. See 8.2.3.2 for discussion of some directions for further research on this topic.

### 5.5 Detecting the "Factative" in Siamou

In many West African languages, the temporal interpretation of predicates is determined by their lexical aspect. Eventive predicates have a default past interpretation and stative predicates have a default present interpretation. Predicates or verb forms which follow this pattern are called factative, and the pattern is sometimes called the factative effect (Welmers 1973, Déchaine 1993). This kind of pattern is not unique to West African languages. (See, for example, Smith (1999) and Bohnemeyer and Swift (2004).) However, it is usually only in West African languages that this is referred to by the term factative. Section 5.5.1 below describes the factative

[^128]in more detail and gives examples of the different ways it is realized in a number of languages. Following this, section 5.5.2 focuses on how the lack of stative verbs affects the emergence of a factative in Siamou.

### 5.5.1 Diagnosing the Factative

The key property of the factative is that it makes a distinction between eventives and statives that affects temporal interpretation (5.5.1.1). However, the factative is realized in a number of different ways in different languages. In Igbo, the factative effect occurs with predicates that have default aspect morphology (5.5.1.2), in Yorùbá on bare predicates (5.5.1.3), and in Kru languages with perfective-marked predicates (5.5.1.4).

### 5.5.1.1 The Factative Imposes a State/Event Partition

Déchaine (1993) shows that the factative can be analyzed as a default tense effect. Usually the tense of an utterance is specified by the tense marker of that utterance, if there is one. However, if there is no tense marker, the tense of the utterance is interpreted as present. (It could also be interpreted as overlapping the situation given by the previous sentence in a narrative or discourse context, but I do not consider this part further.) This is stated formally in (62).
62. ${ }^{208}$ Given a sentence $\mathrm{S}_{\mathrm{j}}$, the temporal reference of $\mathrm{S}_{\mathrm{j}}$ is interpreted to be
a. a time consistent with the overt tense operator of $S_{j}$ if there is one
b. otherwise, $T_{Q}$ is interpreted to overlap with the utterance situation
c. or $T_{Q}$ is interpreted to overlap with the situation denoted by $\mathrm{S}_{\mathrm{i}}, \mathrm{S}_{\mathrm{i}}$ a sentence which precedes $\mathrm{S}_{\mathrm{j}}$ in the narrative.

This explains why statives have a present interpretation, but it does not explain why eventives have a past interpretation. In order to derive the past interpretation of eventives, Déchaine argues that only stative predicates are allowed to have their $T_{Q}$ linked to the utterance time. In order for eventives to have a temporal reference, then, they need to be reinterpreted as states. One way to do this is with a result state: if the eventive happened in the past, then the current state of things is a result of that event. Therefore, if the result state of that eventive is interpreted as present (according to 61b), then the event itself must have happened in the past.

This kind of effect (i.e. the factative) is extremely pervasive in Niger-Congo, and especially in Kru. Marchese (1986) states that every Kru language she studied had a factative.

[^129]Many members of the Kwa language family and some Bantu languages also have a factative (Marchese 1986, Aboh and Essegbey 2010). Similar patterns have been observed in other languages, including Haitian, Trinidad French Creole (from Thomas (1969 [1869]), and Fòn-Gbè (a Kwa language, from Avolonto (1991)) (Déchaine 1993). Jóhannsdóttir and Matthewson (2007) observe that in Gitxsan, states have a default present interpretation, while eventives have a default past interpretation. Reis Silva and Matthewson (2007) observe a similar pattern in Blackfoot, although in Blackfoot, the past interpretetation is a strict effect, stronger than a default.

### 5.5.1.2 The Factative as Default Tense Morphology: Igbo

The label factative was first used by Welmers (1973) in reference to Igbo. Welmers (1973) observes that in Igbo the temporal interpretation of certain verb forms depends on their lexical properties. In particular, verbs "expressing action" (i.e. eventives) have a past time reference while verbs "expressing state or situation" (i.e. statives) have present or undefined time reference (Welmers 1973:311, as in Marchese 1986:31). He calls this alternation the factative. It is marked by a -rı̀ suffix in Igbo. Some examples of Igbo factatives are given in (63). With the non-stative verb in (63a), the factative has a past tense reading. With the stative verb in (63b), it has a present tense reading.
63. Igbo (examples from Welmers (1973: 346-347), as seen in Marchese 1986:31)
a. eventive verb: past tense interpretation
ó byà-rà
he come-FACT
He came.
b. stative verb: present tense interpretation
ó jwè̀-rè é'gó
he have-FACT money He has money.

The $-r \grave{v}$ suffix is actually semantically vacuous (Déchaine 1993). This means that it is compatible with a past tense reading when it occurs with eventive verbs (63a) or a present tense reading when it occurs on stative verbs (63b).

### 5.5.1.3 The Factative as a Bare Predicate: Haitian

The Igbo factative is marked, but in other languages the factative effect may occur without any inflectional morphology. For example, in Haitian it is unmarked predicates that follow this pattern. An eventive predicate with a specific NP object ${ }^{209}$ has an unambiguous past interpretation (64a), but a stative predicate has an unambiguous present interpretation (64b).
64. Haitian (examples from Déchaine 1993:563)
a. Pyè vann bèf yo.

Pyè sell cattle DET
Pyè sold the cattle.
b. Sisi renmen chat mwen.

Sisi like cat 1SG
Sisi likes my cat.
In this case, unlike in Igbo, there is no morphology to signal the factative. It is simply a result of the lexical aspect of the predicate.

### 5.5.1.4 The Factative as Perfective Aspect Morphology: Kru

The factative is extremely pervasive in Kru languages (Marchese 1986). They may have unmarked factatives, as in Dewoin (65), or marked factatives, as in Vata (66). Often if it is marked, it is marked by a low tone suffix on the verb (66).
65. Dewoin (Western Kru)
a. j́ pī sāyè. (from Welmers (1977), as seen in Marchese (1986:31)) he cook meat He cooked meat.
b. $\quad$ í bélé bélé. (from Mortvedt (1976), as seen in Marchese (1986:31)) I have towel I have a towel.
66. Vata (a dialect of Lakota Dida, Eastern Kru) (from Koopman (1984:28))
a. n lì sáká.

1 SG eat.FACT rice I ate rice.

[^130]b. n gblị̀ nā Ò lè sáká.

1SG know.FACT COMP 3SG eat rice
I know that she is eating rice.
Marchese (1986) remarks that the factative form of eventive verbs not only has a past interpretation but a past perfective interpretation (as seen in (64a, 65a). In fact, she begins by describing these forms as perfective, and then explains that the term perfective is not really adequate because statives are not interpreted as perfective.

### 5.5.2 The Evidence from Siamou

Given the ways in which tense, grammatical aspect, and lexical aspect interact, and the way that temporal interpretations may arise by default, we need to be careful when we analyze the semantics of a morpheme. It may be compatible with a past interpretation and yet not be past tense, or compatible with a perfective interpretation and yet not be perfective aspect. A past tense reading could result from an actual past tense, or perfective aspect, or an eventive verb. A perfective aspect reading could arise because the morpheme actually encodes perfective aspect, or it could be the result of the factative effect on eventive verbs. If we only look at eventive verbs, we can not tell the difference between a factative and a perfective because both of them have a past perfective interpretation with eventives.

Siamou is a Kru language, and as such, it is expected to have a factative effect: stative predicates that have a present interpretation and eventive predicates that have a past perfective interpretation.

### 5.5.2.1 No State/Event Partition Means the Factative Is Undetectable with Siamou Verbs

The Siamou eventives that have a past perfective interpretation are inflected with the L tone suffix. It is this L tone suffix that marks perfective aspect, as I showed in 5.1. Looking only at eventives, the L tone suffix fits the definition of perfective aspect. The past tense interpretation of this morpheme is a default. In order to determine whether it is a perfective, or a "factative" of the sort described by Marchese (1986), we need to consider what effect the L tone suffix has on stative verbs. If the L tone suffix is a factative, it is expected to have a present (or undefined) temporal interpretation with stative verbs.

However, as I showed in 5.4, there are no true stative verbs in Siamou. Thus, we can say that the L tone suffix is simply a perfective marker, since there are no stative verbs to show that it is a factative. Although perfective-marked verbs do sometimes have a stative interpretation,
this can be explained by analyzing them as inchoatives that have a result state implicature (see 5.4.4).

### 5.5.2.2 Assessing the Factative with Siamou Non-Verbal States

Even though Siamou does not have a factative verb form, we can still say that Siamou does have a factative effect because non-verbal statives have a default present interpretation, as shown by example (67a), and verbal eventive predicates have a default past interpretation, as shown in (67b).
66. a. Siamou non-verbal stative: present interpretation

| Klô | ń | to. |
| :--- | :--- | :--- |
| hunger | 1SG | to |
| I'm hungry. |  |  |
| literally: | Hunger is to | me. |

b. Siamou eventive: past (perfective) interpretation with $-L$ suffix

| Ń | ni | le | dì. |
| :--- | :--- | :--- | :--- |
| 1SG | FIN | food | eat.PRFV |
| I ate food. |  |  |  |

### 5.5.2.4 Implications for Kru

If Siamou perfective-marked verbs that have a present stative interpretation can be analyzed as a result state entailment of inchoative verbs, this leads to the question of whether the present stative readings in other Kru languages (or even other Niger-Congo languages) can be analyzed the same way. It would be interesting to see if verbs that are interpreted as stative in these languages ever have inchoative readings as well, and in what syntactic environments those readings arise. It is possible that the analysis given here for Siamou would work in these languages as well. Perhaps Kru languages actually have no stative verbs, but only inchoative verbs that may have a result state interpretation (especially in the perfective). One piece of evidence to support this hypothesis comes from Kouya, another Kru language. In Kouya the perfective of the verb $z a$ is glossed as an inchoative ('redden'), but it has a stative interpretation, either present or past (68) (Saunders 2009).
68. ${ }^{210}$ language: Kouya (from Saunders 2009:182)
we -za.
it redden
It is/was red.
This analysis fits for the Siamou language data. It remains to be seen whether or not this pattern is more general and if the analysis given for Siamou can be extended to other Kru languages.

### 5.6 Conclusion

The main purpose of this chapter was to show that the Siamou $L$ tone verbal suffix is a perfective aspect morpheme and that the Siamou $M$ tone $-n$ suffix is an imperfective aspect morpheme. This means that they are part of Siamou's grammatical aspect paradigm. In order to accomplish this, I needed to provide theoretical background on three syntactic categories: tense, grammatical aspect, and lexical aspect. This is because these three categories interact in a myriad of ways, often resulting in default readings that can make it difficult to determine the actual function of a given morpheme.

These results raise questions about the nature of other verb classes in Siamou. Although I did not specifically attempt to show that Siamou distinguishes accomplishments, achievements and activities, the analysis of the perfective and imperfective seems to confirm the existence of these classes. For example, the test for culmination entailments of perfective verbs serves to distinguish activities, which do not have culmination entailments, from accomplishments and achievements, which do have culmination entailments.

In the process of this analysis, an important discovery was made: Siamou does not (as far as I can tell) have stative main verbs. Rather, Siamou has a number of strategies for expressing stativity, including a class of inchoative verbs that occasionally have result state readings, but which actually make the coming-to-be of a stative situation more salient than the stative situation itself.

The findings of this chapter also call into question the existence of the factative effect in other Kru languages. Perhaps further investigation would reveal that a better understanding of Kru verb classes would do away with the need for a "factative" in these languages.

[^131]
## 6. The Semantics of Past Tense ín and its Implicatures

The goal of this chapter is to explore the meaning(s) of the right-edge particle in. This morpheme constrains the reference time of a clause to a past time, as shown in (1). In (1a), the utterance does not contain in and it has a present interpretation. The following utterance (1b) is identical except that it contains $i n$, and has a past interpretation.

| 1. | a. | À | ri | le | leè-n. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | 3SG FIN | food | eat-IMPF |  |


| b. | À | ri | le lè̀-n | lín. |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | FIN | food | eat-IMPF | PST |
|  | S/he was | eating food. |  |  |  |

However, in does not always have such a straightforward interpretation. Based on my fieldwork, I grouped the different meanings of in into six preliminary categories: past tense, more remote past, counterfactual, cessation, politeness and doubt. In the following section (6.1), I introduce the six meanings of $i n$. In 6.2 , I look at four strategies for analyzing multi-functional morphemes like $i n$. In 6.3 I show that the primary (lexical) meaning of $i n$ is past tense by looking at how it affects aspectual forms with different default tense interpretations. In 6.4 I show that the remote past, counterfactual and cessation meanings arise by implicature. I also describe the politeness and doubt meanings, although I do not have an analysis for them. Section 6.5 concludes.

### 6.1 The Six Meanings of Siamou ín

The particle $i n$ has six meanings, which are listed in (2).
2. a. Past tense
b. More remote past
c. Counterfactual
d. Cessation
e. Politeness (e.g. indirect request)
f. Doubt about some meaning element of the proposition

### 6.1.1 Siamou ín Is Past Tense

As shown in (1) in constrains the meaning of an utterance to past time. I argue in 6.3 that $i n$ always constrains the meaning of an utterance to past time. However, sometimes the secondary
meanings of in are more salient than the past tense meaning, especially for utterances that already have a past interpretation by default. This may obscure the primary meaning.

### 6.1.2 Siamou Past Tense ín Gives Rise to Implicatures

There are five secondary meanings of in . I argue in 6.4 that at least three, and perhaps all of these are all implicatures. For now, I simply introduce the data.

### 6.1.2.1 Siamou ín Implicates Remote Past

Sometimes, when in occurs with verb forms that result in a default past interpretation, it causes the utterance to be interpreted as more remote in the past than the same utterance without in . Recall from chapter 5 that perfectives have a strong default past reference time. The utterance in (3a) has a past interpretation, even though it does not contain in , because the main verb is perfective. The utterance in (3b) is identical except for the addition of $i n$. The utterances in (3) both have a past interpretation, but the utterance with $i^{\prime}(3 b)$ is seen as indicating an event that is further in the past than (3a). This sense of remoteness is vague and there is no clear sense of how far in the past an event has to be to count as more remote.
$\begin{array}{lllllllll}\text { 3. } & \text { a. } & \text { À } & \text { kpàr } & \text { blîn } & \text { jir } & \mathrm{k}^{\prime} & \text { à } & \text { fénn. } \\ & & \text { 3SG } & \text { mat } & \text { fold.PRFV } & \text { someone } & \text { NFP } & \text { 3SG } & \text { call }\end{array}$ He folded a mat and then someone called him.
$\begin{array}{lllllllll}\text { b. } & \text { À } & \text { kpàr } & \text { blîn } & \text { ín } & \text { jir } & \mathrm{k}^{\prime} & \text { à } & \text { fénn. } \\ & \text { 3SG } & \text { mat } & \text { fold.PRFV } & \text { PST } & \text { someone } & \text { NFP } & \text { 3SG } & \text { call }\end{array}$ He folded a mat and then someone called him. French: Il avait plié une natte et puis quelqu'un l'a appellé. (L) $)^{211}$
consultant comment: The act of folding the mat is further in the past than $[(3 \mathrm{a})]$.

### 6.1.2.2 Siamou ín Implicates Counterfactual

When in occurs with future expressions, it often has a counterfactual implicature (4). This means that the event (in this case, dying), is understood not to have actually occurred. I show in 6.4.2 that this is an implicature and not an entailment.

[^132]4. Ń bè na kú-bè ín.

1SG MOD today die-PRSP2 PST
I could have died today.
context: I was at the river when the truck fell off the bridge. I could have died, but I escaped.

### 6.1.2.3 Siamou ín Implicates Cessation

Ín can also give rise to the implicature that something that was the case is not the case anymore. For example, in (5), a baby is asserted to have slept at some point in the past. Although it is not stated, it is understood that the baby is no longer sleeping at the speech time.

consultant comment: $\mathrm{S} / \mathrm{he}$ 's done sleeping now.

### 6.1.2.4 Siamou ín Implicates Politeness

Sometimes, in is used to mark politeness, often as an unstated invitation or request. In (6), the speaker is stating that he has spread a mat. Although he does not say so, he may be inviting his audience to sit on it with him, or hinting that he would be willing to move it if it were in the way.

| 6. | Ń | kpàr | búr-è | ín. |
| :--- | :--- | :--- | :--- | :--- |
| 1SG | mat | spread-CMPL | PST |  |
| I (just) | spread a mat. (Come rest./Should I move it?) |  |  |  |
| French: J'avais installé une natte. (C) |  |  |  |  |

context: You just spread a mat, and you're inviting someone to come sit on it with you. context: You just spread a mat, and you're letting the other person know that you're willing to move it if it's in their way.
consultant comment: Here in doesn't make the event further in the past, unless you're talking about something that happened a long time ago. Usually this means it just happened- you just spread the mat.

### 6.1.2.5 Siamou ín Implicates Doubt

Ín can also indicate a sense of doubt on the part of the speaker about what is being said. In (7a), the speaker is simply stating a fact. In (7b), which is identical to (7a) except for the presence of
in, the speaker is expressing doubt, not necessarily about the truth of the proposition itself, but about some implication related to the proposition.
$\begin{array}{llllllll}\text { 7. a. } & \hat{\mathrm{N}} & \text { srós } & \text { jo=̂ } & \text { ri } & \text { sعl } & \text { dukló. } \\ & \text { 1PL } & \text { younger.sibling } & \begin{array}{l}\text { man=DEF2 }\end{array} & \text { FIN } & \text { get.up.early } & \text { get.up.PRFV }\end{array}$
Our little brother got up early.
 1PL younger.sibling man=DEF2 FIN get.up.early get.up.PRFV PST Our little brother got up early.
consultant comment 1: re: (7b)—You don't know what he did after he got up. You don't know if he got up and then went back to bed. You just know that he got up, but you don't know what happened after. consultant comment 2: [Example (7a)] is a declarative "affirmative" proposition because. . . that's exactly what happened. [Example (7b)] is a declarative "NONaffirmative" proposition.

### 6.2. Four Hypotheses for Modeling Related Meanings

When looking at a form like in that has more than one meaning, there are two possibilities: either the sets of meanings are unrelated, or they are related. If the meanings are unrelated, this is called homophony. ${ }^{212}$ If the meanings are related, this means there is some kind of semantic connection between them. There are at least three ways to account for morphemes that are multifunctional, or seemingly multi-functional. First of all, they may have a set of distinct meanings that are semantically linked in some way. This is called polysemy. See Cruse (1986) and Pustejovsky (1995) for discussion. The second possibility involves conversational implicature, which is a meaning a word (or utterance) has beyond what is actually stated. In this case, a word (or utterance) might seem at first to have multiple meanings, but closer examination reveals that there is only one lexical meaning and the other (apparently distinct) meanings are actually implicatures that arise from that lexical meaning in combination with other relevant information (such as the discourse context). This is the analysis I adopt for $i n$ in this chapter. The third way of relating meanings involves abstract meaning (Higginbotham 1983, Kay and Zimmer 1990).

[^133]In this case, a word has one meaning that is so abstract that it can include all of its seemingly distinct uses. Only context and other extra-linguistic factors determine which particular meaning is employed. These possibilities are not mutually exclusive. It could be, for example, that the meaning of $i n$ is abstract enough to include some but not all of the meanings listed above, and the rest are conversational implicatures.

The four possible ways of analyzing the meanings of in that I discussed above can be diagrammed as in (8): Homophony (Ba) is represented by individual circles, one for each meaning, and no link between them. The letters inside indicate different meanings. Polysemy ( 8 b ) is represented by individual circles with lines linking them. Conversational implicature (Bc) has one basic meaning (a) in a circle surrounded by a larger, hazy circle that represents the additional, unstated meaning. Abstract meaning (8d) is represented by one large circle labeled $D$. $D$ represents the abstract meaning, which subsumes the individual meanings represented by $a, b, c$.
8. a. Accidental Homophony (Meanings are unrelated, just happen to sound the same.)

b. Polysemy (The meanings are semantically linked.)

c. Conversational Implicature (One of the meanings is primary, and the others arise from that meaning in conjunction with other relevant information.)

d. Abstract Meaning (There is one meaning that is abstract enough to include all the seemingly distinct meanings.)


### 6.2.1 Accidental Homophony Hypothesis

Accidental homophony means that each instance of a multi-functional morpheme with its particular meaning is distinct, and it is merely a coincidence that they all have the same phonological form.

For example, in English, the form /tuw/ has a number of meanings, including a numeral (two), an additive particle ( $t o o$ ) and a preposition ( $t o$ ). There is no clear link between these meanings. They have different spellings which reflect distinct origins. These morphemes also have very different syntactic distributions. The numeral (two) modifies nouns, which the other morphemes do not (9).
9. a. We have two sofas.
b. $\quad *$ We have too sofas.
c. * We have to sofas.

The additive particle (too) modifies verb phrases and occurs at the right periphery of the phrase (10). The other two morphemes are ungrammatical in that type of environment.
10. a. * He has a sofa two.
b. He has a sofa too.
c. $\quad *$ He has a sofa to.

The preposition is a functional head that takes various kinds of complements, such as a noun phrase (11).
11. a. * Walk over two the sofa.
b. * Walk over too the sofa.
c. Walk over to the sofa.

The syntactic distribution of these morphemes supports our intuition, based on a lack of semantic connection, that this is a case of homophony. (See Lyon et al. (2004) for discussion.)

### 6.2.2 Polysemy Hypothesis

Polysemy describes morphemes that have more than one related meaning. For example, the word lamb can be used to refer to an animal (as in 12a), or to the meat from that animal (as in 12b). (See Copestake and Briscoe (1996), among others.)
12. a. This lamb is so cute! (lamb=animal)
b. This lamb is so tender and juicy! (lamb=meat)

It may be argued that these two uses of the word lamb are related, and therefore a case of polysemy, since they both refer to nearly the same physical object, except that one refers to the living, whole animal, while the other refers to cut up parts of it. ${ }^{213}$

### 6.2.3 Conversational Implicature Hypothesis

An implicature is a meaning an utterance has beyond what is actually said. Conversational implicature refers to the way in which speakers use principles of communication to make an implicature. These principles are listed in (13) as discussed in Grice (1989).
13. a. Maxim of Quantity: Be as informative as required, but not more.
b. Maxim of Quality: Be truthful.
c. Maxim of Relation: Be relevant.
d. Maxim of Manner: Be perspicuous (i.e. clear and concise).

[^134]When people are making an effort to communicate with each other, they are expected to cooperate in order to make the communication a success. Usually, this means abiding by the maxims listed in (13), but sometimes speakers deliberately flout these principles for specific communicative reasons, as we will see below. As an example of a situation in which a person abides by these principles in order to communicate, suppose you are helping me install a new tap in the kitchen sink and I need you to get me the o-ring kit. You ask me where the o-ring kit is and what it looks like. I tell you it's a blue plastic box with a clear lid, and it's inside my toolbox on the drafting table in the basement. This exchange can be considered a success because it is (presumably) as much information as you need to go find the kit and return before I get a cramp in my neck from being twisted up under the sink. In this exchange I have obeyed the maxim of quantity by giving you as much information as you need. If I had just told you it was in the basement, you might not be able to find it. I have obeyed the maxim of quality by telling you the truth about where it is. If I had said it was in the garage, you would definitely not be able to find it. I have obeyed the maxim of relation by telling you only what you need to find the kit. If I had added a detailed description of where I got the o-ring kit, how much I paid for it, and what a great deal it was, that would not help you find the kit and it would prevent you from leaving to go get it. I have obeyed the maxim of manner because I explained clearly where the o-ring kit was. If I had just said it was on the table in the basement, you might have thought I meant the old dining room table, so I specified that it was on the drafting table. These maxims are not always easily separated into distinct categories. For example, by being more informative than required (maxim of quantity), I risk being irrelevant (maxim of relation). The list of maxims is also not exhaustive. There may be other co-operative principles that speakers observe, such as 'Be polite' (Grice 1989).

Interlocutors generally assume that those they are communicating with are observing these rules of conversation. This is how conversational implicatures come about. Saying one thing $(p)$ and implying something else $(q)$ is a conversational implicature if the following conditions hold (c.f. Grice 1989:30-31):
14. a. the speaker is obeying the rules of conversation
b. $\quad q$ is required in order for the rules to be obeyed, and
c. the speaker expects that the listener can figure out that $p$ implies $q$.

An example of an exchange containing a conversational implicature is given in (15).
$\begin{array}{ll}\text { 15. } \quad \text { Ken: } & \text { You wanna get together this evening? } \\ \text { Meredith: } \quad \text { I have to study. }\end{array}$
conversational implicature: No, we can not get together this evening because I'm busy.
In (15), Meredith does not directly answer the question. However, if she is co-operatively participating in the conversation (14a), it may be assumed that what she is saying is relevant to Ken's question (according to the maxim of relation). Without the implied meaning, this utterance would violate principles of conversation and would not be an answer to the question (14b). Ken should be able to work out the conversational implicature without too much difficulty (14c) (and most likely without even thinking about the fact a conversational implicature was used).

Implicatures have a number of characteristics (Grice 1989). First of all, they are cancellable (Grice 1989:39). This means that a speaker can state or imply that an implied meaning does not hold, or the context itself can cause the implicature to be cancelled. For example, in (15), above, Meredith has made the implicature that she is not able to get together with Ken. She could cancel this implicature by adding a clause to her utterance: I have to study [...] but I can do that after I get home. This cancels the implicature that she has refused his invitation and creates another implicature which is that she is accepting his invitation.

Implicatures may also be non-detachable. This means that if a certain utterance in a certain context has a certain implicature, it will be impossible (except perhaps in special circumstances) to find a different way to say the same thing and not have that implicature. Thirdly, although implicatures sometimes become conventionalized, usually they are not part of the literal meaning of an utterance. Additionally, implicatures do not have the same truth conditions as the literal content of the utterance they are associated with. The literal content may be true and the implicature false. (For example, suppose a younger sister finds her older sister's sweater lying on the sofa and takes it to wear for the day. When accused by her older sister of taking her sweater, she might reply 'I don't even know where you keep your sweater.' This is literally true, but it implicates that she did not take it, which is not true. Finally, conversational implicatures are often indeterminate. This means that a given utterance may be supposed to have a variety of implicatures, any one of which would satisfy the principles of communication, and it may be difficult to determine exactly which one the speaker intends.

Often the lexical meaning of the utterance (e.g. I have to study) is taken to be the main intended meaning of the utterance. However, speakers very frequently communicate ideas in an
indirect way, and sometimes an unspoken meaning is more salient than the spoken one. The main intended meaning of an utterance is often something more complex than simply a development of the literal meaning of an utterance (Jaczsolt 2009, among others).

Using this idea, we can see that implicatures could easily be the main intended meaning of an utterance even though they are not part of its literal meaning. I will argue that this is the case for $i n$ in Siamou: The meaning(s) that it conveys in various contexts are not necessarily part of its literal meaning. For example, the utterance in (16) contains the morpheme in. I argue in this chapter that its literal meaning is past tense. However, in this case, it does not even appear to be contributing past tense because the same utterance without in would also be interpreted as past (17). The most salient meaning of (16) is either the invitation to sit down, or the speaker's willingness to move (depending on the context).
16. Ń kpàr búr-è ín.

I spread a mat. (Come rest./Should I move it?)
French: J'avais installé une natte. (C)
context: You just spread a mat, and you're inviting someone to come sit on it context: You just spread a mat, and you're letting the other person know that you're willing to move it if it's in their way.
consultant comment: Here in doesn't make the event further in the past, unless you're talking about something that happened a long time ago. Usually this means it just happened- you just spread the mat.
$\begin{array}{llll}\text { 17. } & \text { kpàr } & \text { búr-è. } \\ \text { 1SG } & \text { mat } & \text { spread-CMPL }\end{array}$
I already spread a mat.
French: J'ai (déjà) mis une natte. (C)

### 6.2.4 Abstract Meaning Hypothesis

Conversational implicatures are one possible explanation for (apparently) multi-functional morphemes. Another possibility is that an (apparently) multi-functional morpheme actually has a single abstract meaning. In this case, the specific meaning that the morpheme seems to have in a particular utterance is contextually determined (Higginbotham 1983, Kay and Zimmer 1990). This analysis has been used for multi-functional morphemes such as the English genitive suffix, 's. This morpheme has many meanings, some of which are listed in (18) (see Nikiforidou 1991, among others).
18.
a. ownership
b. kinship
c. experiencer
d. inalienable possession

That man's hat.
That man's mom.
That man's rage.
That man's arm.

Unlike the /tuw/ case, this morpheme has exactly the same distribution no matter which meaning it receives, which can be seen in the phrases in (18). Moreover, it is possible to show that the different functions of this morpheme are semantically related to each other.

The abstract meaning analysis states that the morpheme 's simply indicates that some unspecified relation exists between two entities (Kay and Zimmer 1990, also see Partee and Borschev 1998, 1999). The only way to determine the nature of this relation is to rely on context. For example, the phrase in (19) could have any of the meanings listed in (19a-e).

## 19. my grandma's blanket

a. a blanket my grandma owns
b. a blanket my grandma made
c. a blanket my grandma sleeps under when she stays with us
d. a blanket made using a quilt pattern designed by my grandma
e. a blanket I inherited from my grandma

Suppose I were to visit my mother-in-law and found that she had started on a new quilt using my grandma's pattern. I might say to her, Oh, you're making my grandma's blanket! In that case, the meaning would have to be the one in (19d). Or, suppose a friend came to stay with me for a week, and needed some bedding to use. I have a big supply of blankets in the back closet, but one of them is reserved for my grandma, so I tell her, You can use any of these blankets except that one- it's my grandma's blanket. In that case, the meaning would be the one in (19c).

Higginbotham (1983) formalizes this theory as follows: A genitive phrase is represented as in (20a), where $\mathrm{NP}_{1}$ is the genitive-marked noun phrase ${ }^{214}$ and $\mathrm{N}^{\prime}$ is the thing that is possessed. The meaning of 's is expanded in (20b), which states that for the unique entity, $x, x$ is $\mathrm{N}^{\prime}$ and $x$ is in some relation (R) to $\mathrm{NP}_{1}$ (from Higginbotham (1983:397-398). If the specific NP in question is my grandma's blanket (20c), and the context is the one from (19d), then the representation in (20b) can be filled out as in (20d).

[^135]20. a. $\quad\left[\mathrm{NP} \mathrm{NP}{ }_{1}\right.$ 's $\left.\mathrm{N}^{\prime}\right]$
b. [the $\mathrm{x}: \mathrm{N}^{\prime}(\mathrm{x}) \& \mathrm{R}\left(\mathrm{x}, \mathrm{NP}_{1}\right)$ ]
c. [NP my grandma's blanket]
d. [the x : blanket ( x ) \& my grandma designed the pattern for x ]

The question I seek to answer in the following pages is which analysis (accidental homophony, polysemy, conversational implicature, or abstract meaning), or which combination of these analyses, best explains the apparent multi-functionality of $i n$. In the next section (6.3), I show that its primary meaning is past tense, and then in section 6.4 I show that its other meanings can all be attributed to conversational implicature.

## 6.3. ín Shifts Reference Time to Past

This chapter argues that $i n$ is a past tense morpheme. However, there is no concensus on what the relevant criteria are for determining this. Semantically, the only criterion for a morpheme to be called past tense is that it serves to shift or restrict the reference time to the past (Reichenbach 1947, Klein 1994, Stowell 2007, among others). In that case, in fits the (semantic) definition of past tense, as I show below.

There are also syntactic criteria to determine what counts as a tense. These include obligatoriness and paradigmatic contrast (Comrie 1995, Binnick 2012, Wiltschko 2014). Using these criteria, $i^{n}$ is not a past tense because it is not obligatory (as shown in chapter 5). It is also not in contrast with any other tense morpheme since Siamou does not have a present tense or a future tense. Based on these two diagnostics, in might be better diagnosed as an adverbial. However, it does not fit the criteria for adverbs in Siamou. First of all, it does not have the same distribution as adverbs (as shown in chapter 2). Secondly, it does not have the phonology of a Siamou adverb. In Siamou, no adverbs are vowel-initial, and in fact almost no lexical morphemes at all are vowel-initial (see Table 2.5). This information is summarized in Table 6.1 Using this data, it is not possible to determine whether in is a tense or an adverb. If obligatoriness and paradigmatic contrasts are the main criteria, then $i n$ is an adverb. However, if so, it is a very unusual Siamou adverb because of its distribution and phonology. For me, the most important criterion for past tense is the semantic one, and when I argue that in instantiates past tense, I am arguing that it has a past reference time, and I recognize that this requires me to stipulate that it is not obligatory and not in contrast with any other tense markers in th language.

Table 6.1 in as Past Tense or Adverb

| Criteria | Tense | Adverb |
| :--- | :--- | :--- |
| shifts/restricts reference time to past | $\checkmark$ | $\checkmark$ |
| obligatory | $\mathbf{x}$ | $\checkmark$ |
| paradigmatic contrast | $\mathbf{x}$ | $\checkmark$ |
| distribution | $\checkmark$ | $\mathbf{x}$ |
| phonology | $\checkmark$ | $\mathbf{x}$ |

The way in which in instantiates past tense is dependent on the grammatical aspect of the clause. Of the six aspectual suffixes in Siamou, two have a default present interpretation (the imperfective and the stative), two have a future interpretation (the future and the prospective aspect 2 ), ${ }^{215}$ and two have a default past interpretation (the perfective and the completive). Nonverbal predicates also have a default present interpretation. In the following three subsections I show first that in causes utterances with a default present interpretation (imperfective, stative, non-verbal predicate) to shift to the past (6.3.1), that it causes utterances with a future interpretation (future, prospective aspect 2) to shift to the past (6.3.2), and that it causes utterances with a default past interpretation (perfective, completive) to shift to the past (6.3.3). The third case is more difficult to show since the interpretation without $i n$ is already past.

### 6.3.1 ín Combines with Aspectual Forms That Have a Default Present Interpretation

Imperfective and stative ${ }^{216}$ utterances have a default present interpretation in Siamou. For these aspects, in serves to shift the reference time to the past. This was already shown for the imperfective in (21). Example (21a) without $i n h$ has a present interpretation, and example (21b) with in has a past interpretation. In a similar way, the stative aspect suffix has a default present interpretation, as in (22a), which shifts to the past with in, as in (22b). I look at the effect of in on the imperfective in 6.3.1.1, and on the stative in 6.3.1.2.
21. a. À ri le leè-n.

3SG FIN food eat-IMPF
S/he is eating food.
French: Il est en train de manger de la nourriture (C)

[^136]$\begin{array}{llllll}\text { b. } & \text { A } & \text { ri } & \text { le } & \text { leè-n } & \text { ín. } \\ & \text { 3SG } & \text { FIN } & \text { food } & \text { eat-IMPF } & \text { PST }\end{array}$ S/he was eating food.
French: Il était en train de manger de la nourriture (C)
22.
a. À ri gbón-nèn.

3SG FIN tear-STAT
It's torn.
French: Elle est déchirée. (C)
context: I asked why you never wear the shirt that I gave you last year.
b. À ri gbón-nèn ín.

3SG FIN tear-STAT PST It was torn.
French: Elle était déchirée. (C)
context: I asked why you didn't buy the shirt you saw at the market yesterday.

### 6.3.1.1 $\boldsymbol{i n}$ + Imperfective - $\boldsymbol{n}=$ "Past Imperfective"

When in co-occurs with imperfective aspect, the result is an utterance with a past imperfective interpretation. In (23-24), the (a) examples have a present imperfective interpretation and the (b) examples with ín have a past imperfective interpretation.
23.
$\begin{array}{ll}\text { a. } & \text { Gbò ri kec̀l-n? } \\ & \text { who FIN talk-IMPF } \\ & \text { Who is talking? } \\ & \text { French: Qui parle? (C) }\end{array}$
context: I'm inside talking. Someone outside hears a voice and asks who's talking.
b. Gbò ri kec̀l-n ín?
who FIN talk-IMPF PST
Who was talking?
French: Qui parlait? (C)
context: You heard a voice inside the house and you ask who was talking.
a. $\grave{A}$ ri sébê nwáar-n.
3SG FIN paper write-IMPF

He is writing a letter.
French: Elle est en train d'écrire. ${ }^{218}$ (C)
context: We're both with my brother. I ask you what he's doing.
b. À ri sćbê jwáar-n ín.

3SG FIN paper write-IMPF PST
He was writing a letter.
French: Elle était en train d'écrire. (C)
context: I went to see my brother yesterday. You ask me what he was doing.
Taking (24) as an example, I look at the temporal schema of the utterance without $i n$ and then show how in affects the interpretation. In this case, the three temporal points (speech time $(\mathrm{S})$, reference time (R) and event time (E)) are as shown in (25).
25. S: the time that the given phrase is uttered

R: the time that I am (or we are) ${ }^{219}$ with my brother
E : the time that my brother is writing
In (24a), the utterance without in, while we are with my brother (R), he is writing (E), which is as expected for an imperfective. (See chapter 4.) Furthermore, the time at which you say $\grave{A} r i$ sebê nwáarn ( S ) is also while we are with him. In other words, all three temporal points overlap. This is a present imperfective and it is diagrammed in (26).

## 26. Present Imperfective



[^137]In (24b), the utterance with in , R is still within E , but it is in the past with respect to S . This means that the utterance still has imperfective aspect. This is a past imperfective and it is diagrammed in (27).

## 27. Past Imperfective



Since the only syntactic difference between (24a) and (24b) is the presence or absence of in , and the only semantic difference is the location of R with respect to $\mathrm{S},{ }^{220} \mathrm{I}$ conclude that the function of $i n$ in this context is to take the temporal point R and shift it to some point preceding S , which is exactly what a past tense does.

### 6.3.1.2 ín + Stative -nè̀n = "Past Stative"

I now move on to the stative. The stative suffix often has a "present relevance" feeling to it, like a present perfect, which is why I say it has a default present interpretation. ${ }^{221}$ The event itself may be in the past. In this case, in does not change the event to the past because it already is past, but it changes the "present relevance" part of the meaning to the past. In (28a), the reason you are not wearing the shirt I gave you is because it is in the state of being torn now, even though the event of tearing happened previously. In (28b), the shirt was in the state of being torn when you looked at it in the market yesterday, which is why you did not buy it.
28. a. À ri gbón-nèn.

3SG FIN tear-STAT
It's torn.
French: Elle est déchirée. (C)
context: I want to know why you never wear the shirt that I gave you last year.

[^138]b. À ri gbón-nèn ín.

3SG FIN tear-STAT PST
It was torn.
French: Elle était déchirée. (C)
context: I asked why you didn't buy the shirt you saw at the market yesterday.
Example (29a), which contains a stative without $i n$, is appropriate to say of someone who is currently sleeping, i.e. someone who has fallen asleep, (as in context 1 ) or of someone who is still enjoying the after-effects of having slept (as in context 2). Example (29b), a stative with in, refers to someone who was sleeping at some relevant point in the past (i.e. when I knocked on his door).
29. ${ }^{222}$ a. À ri dé-лદ̀n. ${ }^{223}$

3SG FIN sleep-STAT
S/he [is sleeping]/[has slept].
French: Il est endormi. ${ }^{224}$ (C)
context 1: You knock on Lillian's door, but she doesn't answer. I'm sitting outside, and I know that she went in to have a nap, so I say this to you.
context 2: Often Nadine (six months old) doesn't sleep well at night and then she's cranky the next morning. This morning, when you arrive at work you see her being unusually cheerful and energetic. You ask me why she's like that. I respond.
consultant comment: If you say this, the person may still be sleeping, or they may not.
$\begin{array}{lllll}\text { b. } & \text { À } & \text { ri } & \text { dé-jèn } & \text { ín. } \\ & \text { 3SG } & \text { FIN } & \text { sleep-STAT } & \text { PST }\end{array}$
He was sleeping.
French: Il était endormi. (C)
context: I go to visit someone, and I knock on the door. I know he's there but he doesn't answer. Later, when I ask someone else why he didn't answer, this is the response.
consultant comment: As far as you know, he's no longer sleeping.

In (30a), the speaker is pointing out that the subject has made a trip to Orodara. It is possible that

[^139]the person has just left, that they have already arrived, or that they have returned from their trip. What matters is that the trip was made. In (30b), the significance seems to be the fact that the subject was gone when something important happened (such as his house collapsing).
30.
a. $\grave{A}$

| À | ri | dòn-nèn |
| :--- | :--- | :--- |
| 3SG | FIN | go-STAT |

Tòl. S/he has gone to Orodara

French: Il est en état de partir à Orodara./Elle est parti à Orodara. (C)
consultant comment: You could say this to someone who is insisting that someone didn't go to Orodara when you are certain that he actually did go. Either he is on his way, he's there, or he's already back. What is being insisted on is that he has made a trip to Orodara.
b. À ri dòn-nèn ín Tòl.

3SG FIN go-STAT PST Orodara
S/he had gone to Orodara (at that time).
French: Il/Elle était parti à Orodara (en ce moment là). (C)
context: Your cousin's house collapsed last night. He was ok though because he wasn't home.
consultant comment: Something happened while he was gone.
I show the temporal schema of this type of utterance using (28) as my example. In (28a), the three temporal points are defined as in (31).
31. S: the time that you tell me the shirt is torn

R: the time that you are not wearing the shirt I bought you
$E$ : the time that the shirt became torn
The shirt was torn (E) at some unknown time in the past, which is why you are not wearing it (R) at the time when you tell me it is torn (S). This situation is diagrammed in (32). S occurs at some point during R. E precedes R.
32. Temporal Schema of $\grave{A}$ ri gbón-nèn 'It is torn.' (28a)


In (28b), the temporal points are as defined in (33).
33. S: the time that you tell me the shirt was torn

R : the time that you are in the market
E : the time that the shirt was torn
The shirt was torn (E) at some time before you saw it in the market (R), which occurred the day before you tell me that it was torn (S). This is shown in (34).
34. Temporal Schema of $\grave{A}$ ri gbj́n-nèn ín 'It was torn.' (28b)


Here we see that the semantic difference between the utterance in (28a) and the one in (28b) is that $R$ has been shifted to the past with respect to $S$. Since the only syntactic difference between the two utterances is the presence or absence of $i n$, we can see that in this context, as with the imperfective, the semantic function of $i n$ is to shift the reference time to the past.

Non-verbal predicates are also shifted to the past by the particle i . In (35-37) I show a non-verbal predicate without in in the (a) examples. They all have a present interpretation. The (b) examples are the same as the (a) examples except for the presence of $i n$. They all have a past interpretation.
35. a. Klô ń to.
hunger 1SG to
I'm hungry.
literally: Hunger is to me.
French: J'ai faim. (L)
b. Klô ń to ín.
hunger 1SG to PST
I was hungry.
literally: Hunger was to me.
French: J'avais faim. (L)
36.

| a. | Mún | yin=1 | nwáan. ${ }^{225}$ |
| :---: | :---: | :---: | :---: |
|  | 1 SG | hair=DEF2 | slippery |
|  | My h | ir is slippery |  |

context: Headscarves don't stay on my head (in general) because my hair is slippery.

[^140]| b. | Mún $\quad$ yin=1 | nwáan | ín. |
| :--- | :--- | :--- | :--- |
| 1SG hair=DEF2 | slippery | PST |  |
| My hair was slippery. |  |  |  |
|  | French: Mes cheveux |  |  |

context: Yesterday I was at a wedding. I had put something in my hair that made it really slippery so I couldn't get my headscarf to stay on my head.
37.

| a. | Àni $=1$ | ki | mún | ǹ | tàblî=1 | ro. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | DEM=DEF2 | NFP | 1SG.EMPH | POSS | table=DEF2 | COP |  |
|  | This is my table. |  |  |  |  |  |  |
| b. | Àni $=1$ | ki | mún | ǹ | tàblî=1 | ro | ín. |
|  | DEM $=$ DEF 2 | NFP | 1SG.EMPH | POSS | table=DEF2 | COP | PST |
|  | This was my table. |  |  |  |  |  |  |
|  | French: Cel | -ci éta | ma table. (C) |  |  |  |  |

Using (36) as our example this time, the temporal points are given in (38).
38. S: the time that I am talking about my hair being slippery

R: the time that headscarves don't stay on my head
E : the time that my hair is slippery
The utterance in (36a) is giving a general property of my hair that is true at the present and for an undetermined amount of time extending into the past and the future. During the time that my hair is slippery (E), headscarves do not stay on my head (R). At some point during that time, I talk about my hair being slippery (S). This is shown in (39).
39. Temporal Schema of Mún yin-î nwáan 'My hair is slippery.' (36a)


In (36b) on the other hand, my hair is only slippery (E) during the wedding yesterday, which is when the headscarf kept falling off my head (R). Today, when I am talking about it (S), my hair might not be slippery anymore. This situation has the schema shown in (40). As before, R has been shifted to the past with respect to S .
40. Temporal Schema of Mún yin-î nwáan ín 'My hair was slippery.' (36b)


The data above show that the semantic contribution of in in utterances that have a default present interpretation is past tense. Formally, this means that in takes the reference time of an utterance and shifts it to some time preceding the time of speech.

### 6.3.2 ín Combines with Aspectual Forms That Have a Future Interpretation

Next I look at the semantic contribution of in in future expressions. Siamou has three main future expressions (see chapter 7). Two of them use the prospective aspect 1 suffix - $a$ and one of them uses the prospective aspect 2 suffix $-b \hat{\varepsilon}$. I look at the $-a$ future expressions in 6.3.2.1 and the $-b \hat{\varepsilon}$ future expression in 6.3.2.2. I show that all three shift to the past ${ }^{226}$ when they occur with in.

### 6.3.2.1 ín + Prospective1-a = "Past Prospective"

The examples in (41-42) show a future expression without in in the (a) examples and a future expression with in in the (b) examples. The (a) examples all have a future interpretation. ${ }^{227}$ The (b) examples have been shifted to the past.
41. a. À ri nun gbe-a. 3SG FIN water drink-PRSP1 He [wants to]/[will] drink water. French: Il [a le désir de]/[veut]/[va] boire de l'eau. (L)
context: Talking about a person who got sick on the bus on the way home. He's very thirsty right now. He wants to drink when we get home.

[^141]b. À ri nun gbe-a ín. 3SG FIN water drink-PRSP1 PST
He would/should have drunk water (but he didn't). French: Il allait/devait boire de l'eau. (C)
context 1: We had a guest. He was thirsty. If you'd given him water, he would have drunk it, but you didn't.
context 2: I'm asking for news about a sick person. This is what you tell me. If he had drunk something he would have gotten better, so I wish he had.
42. a. À bè fli-a

3SG MOD survive-PRSP1
It will survive.
French: Il survivra. (L)
context: We are talking about a sick dog. You can tell by the way it's acting that it will get better.
b. À bè fli-a ín 3SG MOD survive-PRSP1 PST It would have survived.
context: ${ }^{228}$ We are talking about a sick dog. I'm hoping it will die, so I don't give it any water, but one of the kids gave it water when I wasn't looking. I arrive before the dog has a chance to drink it, and I take it away.

Using (41) as my example, I show that in also shifts the reference time of future expressions to the past, just like it does with default present tense expressions. In (41a), the temporal points are defined as in (43).
43. S : the time that I am talking about the sick person

R : the time that the sick person is thirsty and wants to drink
E: the time that the sick person drinks
Right now, as I am saying so (S), the sick person would like to have some water (R). When he gets home, he is going to drink water (E). This situation is represented by (44). This is a prospective aspect, ${ }^{229}$ since E follows R. (See chapter 6 for a discussion of prospective aspect.)

[^142]44. Temporal Schema of $\grave{A}$ ri nun $g b \varepsilon-a$ 'He will drink water.' (41a)


For the first context in example (41b), S, R and E are given in (45).
45. S: the time that we're talking about how you should have treated your guest

R: the time that the guest was visiting and was thirsty
E: the time that the guest drinks water (never actually occurs)

In this situation, the speaker is chastising the listener for not offering his guest water (S). The speaker is sure that at the time the guest was visiting ( R ), he would have accepted a drink of water if one had been offered. (The event is understood never to have occurred, ${ }^{230}$ but if it had occurred, it would have been in the future relative to the reference time.) This is shown in (46).
46. Temporal Schema of $\grave{A}$ ri nun $g b \varepsilon$-a in 'He would have drunk water.' (41b) ${ }^{231}$


This schema still shows a prospective aspect (E following R), but here, instead of S and R cooccurring (present tense), R is in the past with respect to S (past tense). This shows that $i n$ marks past tense on future expressions.

The above examples provide minimal pairs where each pair uses the same verb. This is useful for showing the unique contribution of $i n$ as I have done above. The following example also supports the generalization, although it is not quite a minimal pair since the first clause is different in (47a) and (47b).

[^143]47.

$\left.\begin{array}{lllllll}\text { a. } & \begin{array}{llll}\text { Á } & \text { nì } & \text { bè } & \text { à }\end{array} & \begin{array}{l}\text { kpàr=1 } \\ \text { 2SG }\end{array} & \text { if } & \text { MOD } & \text { DEF1 } & \text { mat=DEF2 }\end{array} \quad \begin{array}{l}\text { blín-a, } \\ \text { fold-PRSP1 }\end{array}\right]$
context: Negotiating a division of chores
b. Á n' à kpàr= $\hat{1}$ blîn, 2SG if DEF1 mat=DEF2 fold.PRFV

| ń | bè | nun | tu-a | ín. |
| :--- | :--- | :--- | :--- | :--- |
| 1SG | MOD | water | draw-PRSP1 | PST |

If you had folded the mat, I would have gotten water.
French: Si tu avais plié la natte, je puiserais de l'eau. (C)
context: A mother told her son to fold the mat that was spread on the ground. She goes out. Later when she comes back she sees that the mat is still not folded. She says this. If he'd folded the mat she'd have gotten water, but he didn't so she won't. It's too late.
inappropriate context: A mother is away from home. She calls home and tells this to her son. She will be arriving in 5 minutes. If the mat is folded when she gets home, she'll go get water, otherwise she won't.

### 6.3.2.2 in + Prospective2 -b $\hat{\varepsilon}=$ "Past Prospective"

Ín has the same effect on the certain future (bè. . . -bê). The utterance in (48a) has a future interpretation. The utterance in (48b) with in has been shifted to the past.
48. a. À bè le di-bê.

3SG MOD food eat-PRSP2
S/he is going to eat.
French: Il va manger. (C)
context: What is your mother going to do tomorrow morning before she leaves for town?
$\begin{array}{llllll}\text { b. } & \text { A } & \text { bè } & \text { le } & \text { di-b } \hat{\boldsymbol{\varepsilon}} & \text { ín. } \\ & \text { 3SG } & \text { MOD } & \text { food } & \text { eat-PRSP2 } & \text { PST }\end{array}$ S/he was going to eat. French: Il/Elle [allait manger]/[mangerait] ${ }^{232}$ de la nourriture. (C)
context: My sister was about to put some food in her mouth when someone bumped her and she dropped it on the ground. It got dirty, so she didn't eat it.

This example is similar to the one in 6.3.2.1. The temporal points from (48a) are defined in (49), and diagrammed in (50).
49. S : the time that I am talking about my mother eating

R : the time my mother is making plans to eat
E: the time that my mother eats
50. Temporal Schema of $\grave{A}$ bè le di-bè 'She is going to eat.' (48a)


For (48b), S, R and E are given in (51) and diagrammed in (52).
51. S: the time that I'm talking about how she was about to eat R : the time that the she got bumped as she was about to put food in her mouth E: the time that she puts the food in her mouth (never actually occurs)
52. Temporal Schema of $\grave{A}$ bè le di-bê ín 'She was going to eat.' (48b)


### 6.3.3 ín Combines with Aspectual Forms That Have a Default Past Interpretation

I have now shown that in can function as a past tense marker when it occurs with default-present tense expressions and with future expressions. In this section, I look at the temporal semantics of in in the context of utterances that already have a past interpretation by default (namely, utterances with either perfective or completive aspect marking).

[^144]It is more difficult to determine if in contributes past meaning when it occurs with default past expressions (perfective and completive aspect), because in those cases the meaning of the utterance without $i n$ is already past. The perfective and completive utterances in (53a) and (54a) have a past interpretation. In (53b) and (54b) with in, the utterances are also past. In (53b), I show that the French translation of these types of utterances is often past perfect (avait dormi), although I argue that it does not actually express past perfect. In (54b), I show that in can cause the utterance to be interpreted as more remote. I discuss both these types of interpretations in 6.3.3.1.
53. a. À dyźl.

3SG sleep/fall.asleep.PRFV
He slept.
French: Il a dormi. (C)
consultant comment: He might be still sleeping, or awake already.
$\begin{array}{llll}\text { b. } & \text { A } & \text { dy } \text { l } & \text { ín. } \\ & \text { 3SG } & \text { sleep/fall.asleep.PRFV } & \text { PST }\end{array}$
English translation of French translation of Siamou utterance: He had slept. French: Il avait dormi. (C)
consultant comment: He's done sleeping now.
54. a. Ń ni kel-è.

1SG FIN talk-CMPL
I have spoken./I said everything.
French: J'ai parlé./J'ai tout dit (C)
$\begin{array}{lllll}\text { b. } & \text { N } & \text { ni } & \text { kel-è } & \text { ín. } \\ & \text { 1SG } & \text { FIN } & \text { talk-CMPL } & \text { PST } \\ & \text { I have spoken (awhile ago). }\end{array}$
consultant comment: This is further in the past than [the utterance in 54a].

### 6.3.3.1 ín + Perfective - L = "Past Perfective"

When in occurs with perfective-marked verbs it results in a past perfective with a sense of remoteness (which I show in 6.4.2 to be an implicature). First I show that PRFV $+i n$ does not result in a past perfect, despite data like that in (53b). Second, I show that although PRFV + in
often results in a remote past reading (as in (54b)), it is not the case that in is a remote past tense marker.

In elicitation, Siamou utterances containing a perfective-marked verb and in are frequently translated into French as a past perfect. The utterance in (55a) without in is translated as a past tense, and the utterance in (55b) with in is translated as a past perfect.
55.

| a. | Dír yesterday | à nan=1̂ |  | bân. |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | DEF1 | wood=DEF2 | float.PRFV |  |
|  | English translation of French translation of Siamou utterance: Yesterday the wood floated. |  |  |  |  |
|  |  |  |  |  |  |
|  | French: Hier, le bois a flotté. (C) |  |  |  |  |
| b. | Dír | à | nan=1 | bân |  |
|  | yesterday | DEF1 | wood=DEF2 | float.PRFV | PST |
|  | English translation of French translation of Siamou utterance: <br> Yesterday the wood had floated. ${ }^{233}$ <br> French: Hier, le bois avait flotté. (C) |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

In a Klein (1994) view of tense and aspect, a past perfect is a combination of past tense and perfect aspect. ${ }^{234}$ Past tense indicates that the reference time precedes the speech time, and perfect aspect indicates that the event time precedes the reference time. This is shown in the diagram in (56), and an example is given in (57). The sentence in (57) is saying that the event of hair cutting occurred at some unspecified point preceding the time that I saw her. The time that I saw her precedes the time that I utter this sentence.

## 56. Temporal Schema of Past Perfect



[^145]57. When I saw her, she had cut her hair.

E: when she cut her hair
R: when I saw her
S: when I say this sentence
In (58) below, I attempt to create a similar example in Siamou. In this case, the reference time is yesterday when I went to your place and the event is drinking water. In order for these utterances to have a past perfect interpretation, the event of drinking water has to be understood to occur before I go to your place. If it means that I drank water while I was at your place, then the interpretation is simply past tense. Example (58) has four possible endings to the Siamou phrase for "Yesterday, when I went to your place. .." The ending in (58a) contains a perfective. It has a past interpretation. The ending in (58b) contains a perfective and $i n$, and it also has a past interpretation. This tells us that adding in does not result in a past perfect interpretation. The ending in (58c) contains a perfective verb, ${ }^{235}$ the particle in, and an adverbial (-mún $\supset$, 'already'), and it does have a past perfect interpretation. The ending in (58d) contains a perfective verb and the adverbial, but not in . It also has a past perfect interpretation. This verifies that it is the adverbial alone, and not a combination of the adverbial plus $i n$ that results in the past perfect interpretation. To summarize, these data show that a past perfect reading is only possible with the adverbial -mún $\supset$ 'already.' The particle $i n$ on its own never results in a past perfect reading. ${ }^{236}$
58. ${ }^{237}$ contextual information: For foreigners, drinking unfiltered water in Burkina Faso will likely cause abdominal pain. For this reason, I made an effort to drink my own filtered water at home before going out to visit friends.
Ń ni dír dénno ákun ton=î mo gbâr=î mun ye... 1SG FIN yesterday go.PRFV? 2SG.EMPH place=DEF2 in time=DEF2 REL at Yesterday when I went to your place. . .
French: Hier, quand je suis parti chez toi. . . (L)

[^146]a. ... ń ni nun yè. 1SG FIN water drink.PRFV I drank water. $/ \neq$ I had drunk water. French: j'ai bu de l'eau. (C)
context: I drank water at your place.

b. ... ń ni nun yè $\quad$ ín.

1SG FIN water drink.PRFV PST
I drank water./ $=\mathrm{I}$ had drunk water.
French: j'avait bu de l'eau. (C)
context: I drank water at your place.

c. ... ń ni nun yè-mún o ín.

1SG FIN water drink.PRFV-already COP
PST
I had already drunk water (i.e. before coming there) French: j'avait déjà bu de l'eau (C)
context: I drank water before I got to your place.

d. ... ń ni nun yè-mún

ग. 1SG FIN water drink.PRFV-already COP I had already drunk water (i.e. before coming there) French: j'ai déjà bu de l'eau (C)
context: I drank water before I got to your place.


From this, I conclude that analyzing in as a past perfect when it occurs with perfective verbs is incorrect.

Contrast this $(\mathrm{PRFV}+i n)$ with the stative suffix -nèn $(\mathrm{STAT}+i n)$. In $(59 \mathrm{a})$, where the verb is inflected with the stative aspect suffix, the children ate at the same time that I came there. In (59b), with the addition of in, the children ate before I arrived. ${ }^{238}$
59. a. Ń ni dír byè à sádi gbâr=î mun ye, 1SG FIN yesterday come.PRFV 3SG home time=DEF2 REL at When I went to her place yesterday, French: Quand je suis venu chez elle hier (C)
à bishéc̀y $=\hat{\varepsilon}$ le di-nèn.
DEF1 child.PL=DEF2 food eat-STAT
the children ate.
les enfants ont mangé. (C)
context: The children ate when I got there.
b. Ń ni dír byè à sádi gbâr=̂̂ mun ye, 1SG FIN yesterday come.PRFV 3SG home time=DEF2 REL at When I went to her place yesterday, French: Quand je suis venu chez elle hier (C)
 the children had eaten. les enfants avaient mangé. (C)
context: The children ate before I got there.
If $i n$ is not a past perfect, another possibility is that it functions as a remote past marker.
Native speakers have an intuition that a perfective or completive utterance with in is more remote in some sense than the same utterances without in. When asked to compare utterances such as (60a) with (60b), the most frequent comment by my consultant was that (60b) is further in the past than (60a).

[^147]60.

a. $\quad \begin{array}{llll}\text { A } & \text { kpàr } & \text { blîn. } \\ & 3 \mathrm{SG} & \text { mat } & \text { fold. }\end{array}$

3SG mat fold.PRFV
He folded a mat.
French: Il a plié la natte. (C)
b. À kpàr blîn ín.

3SG mat fold.PRFV PST
He folded a mat (awhile ago).
French: Il avait plié une natte. (C)
consultant comment: This is further in the past than [the utterance in 60a].
Many Niger-Congo languages have a recent past/remote past contrast, including Shona, Ekoti, and more (Botne and Kerschner 2008, Nurse 2008). If in were a remote past tense marker, this would suggest that Siamou is similar to a language like Shona (a Bantu language), which has a recent past tense (61a) and a remote past tense (61b).
61. language: Shona (from Toews (2008))
a. W-a-teng-a mu-chero.

2SG-REC-buy-FV CL3-fruit
You (just recently) bought a fruit.
b. W-aka-famb-a.

2SG-REM-walk-FV
You walked (some time ago)
There are a number of languages in the Kru family that have a remote past/recent past contrast, including Godié, Dewoin, Kuwaa, and Tepo (Marchese 1986:26), so it would not be unusual for Siamou to make such a distinction. The following examples are from Godié.

Example (62a) has a recent past morpheme, and example (62b) has a remote past morpheme.
62. language: Godié (from Marchese 1986:254)
a. $\quad 0$ li $\quad \underline{\text { a }}$ sukí.
he eat.INC REC rice
He was eating rice.
$\begin{array}{lllll}\text { b. } & \begin{array}{l}\mathrm{j} \\ \text { he }\end{array} & \begin{array}{l}\text { lit } \\ \text { eat.INC }\end{array} & \frac{\mathbf{W \Lambda}}{\text { REM }} & \begin{array}{l}\text { suk. } \\ \text { rice }\end{array}\end{array}$
He was eating rice (a long time ago).

[^148]Languages that distinguish between two (or more) degrees of past tense usually have some kind of cut-off point between the time that the recent past can refer to and the time that the remote past can refer to. The most common cut-off point (for Bantu languages, at least) is between today (hodiernal) and previous to today (Nurse 2008:90). Shona is a language that fits this description. In (63a), the recent past refers to an event earlier this morning. Example (63b) shows that an utterance referring to a hodiernal event with a remote past tense marker is unacceptable, but it is acceptable if it refers to an event that precedes today (63c).
63. language: Shona
$\begin{array}{lll}\text { a. } & \begin{array}{l}\text { Mangwanani }\end{array} \quad \text { nd-a-teng-a } & \text { mu-chero. } \\ \text { this.morning } & \text { 1SG-REC-buy-FV } & \text { LOC-fruit }\end{array}$
b. * Mangwanani nda-ka-teng-a mu-chero. this.morning 1SG-REM-buy-FV LOC-fruit Intended reading: This morning I bought fruit.

| c. | Shingi | a-ka-teng-a | mu-chero | nezuro. |
| :--- | :--- | :--- | :--- | :--- |
|  | Shingi | 3SG-REM-buy-FV | CL3-fruit | yesterday |

Shingi bought fruit yesterday.
Languages vary in how strictly they adhere to the boundaries established by the cut-off point. For events with easily defined run-times, like yesterday, tomorrow, etc., determining which past tense to use is quite predictable. Other events, such as the growth of a tree, are not as easy to categorize. The way the speaker wishes to portray an event may also have an effect on the choice of tense marker. (See Nurse 2008:90-94 for discussion.)

Botne and Kerschner (2008) describe the contrast between recent past and remote past in Ekoti, a Bantu language spoken in Mozambique. In Ekoti, the recent past (64a) has current relevance, while the remote past (64b) does not. The recent past is formed $-a-\ldots$. . $a$ and the remote past is formed -aa-. . .iy-e.
64. language: Ekoti (from Schadeberg and Mucanheia (2000:172,151), as shown in Botne and Kerschner (2008:182-183))
a. Taáná
n-a-c-á
foóxi.
yesterday 1PL-REC-eat-REC
together
Yesterday we ate together.
b. (a-)aa-lum-ách-í(y)-w-e.

1SG-REM-bite-INT-REM-PASS-REM
He was very badly bitten.
From the description given above, the Siamou particle in does not appear to fit the definition of a remote past tense marker. First of all, there does not seem to be a clear candidate for recent past to contrast it with. One might argue that the perfective without in is a recent past, but as I showed in chapter 4, the perfective is definitely not a past tense. Sometimes the completive aspect has a recent past interpretation, as in the first interpretation of (65a), but not always. It also sometimes marks events as being completely done, as in (65b), in which the subject is understood to have eaten all the food. Finally, the completive can also combine with in to result in an utterance that has a sense of remoteness (66). So the completive is not a reliable candidate for a recent past marker either.
65.
$\begin{array}{lllll}\text { a. } & \text { A } & \text { ri } & \text { le } & \text { dì-è. } \\ & \text { 3SG } & \text { FIN } & \text { food } & \text { eat-CMPL }\end{array}$
French: Il vient de manger de la nourriture. (C)
b. À $\quad r^{\prime}$ à múkâl=î dì-è.

3SG FIN DEF1 tô=DEF2 eat-CMPL
She ate all the tô.
French: Elle a mangé tout le tô. (C)
66. a. Ń ni kel-è.

1SG FIN talk-CMPL
I have spoken.
French: J'ai parlé./J'ai tout dit. (C)
b. Ń ni kel-è ín.

1SG FIN talk-CMPL PST
I have spoken (awhile ago).
consultant comment: This is further in the past than [the utterance in 66a].
The second way in which in does not resemble a typical remote past marker is that it does not appear to have any temporal cut-off point of the kind discussed above. Languages with a remote past/recent past contrast usually have at least some kind of a temporal dividing line between events described by a remote past and events described by a recent past, even if it is not always adhered to. As I stated above, according to Nurse (2008), the recent past/remote past
distinction is usually quite predictable when it comes to events with easily defined run-times. I have not been able to find such a cut-off point in Siamou. Both utterances in (67), one with in and one without, are compatible with the temporal adverb, dir (yesterday). Similarly, in (68), the adverb lanóo (last year) is acceptable with or without in. ${ }^{240}$
67.
a. $\quad \mathrm{A}$

3SG FIN food eat.PRFV
S/he ate yesterday.
b. À ri le dì ín dír.

3SG FIN food eat.PRFV PST yesterday S/he ate yesterday.
68.
a. Lanóo, à bisháayn=î án wâ dè. last.year DEF1 child=DEF2 POSS cloth wear.out.PRFV Last year, the child wore out his clothes.
b. Lanóo, à bisháayn=î án wâ dè ín. last.year DEF1 child=DEF2 POSS cloth wear.out.PRFV PST
Last year, the child wore out his clothes.
French: L'an passé l'enfant avait usé son habille. (C)
context: Day by day, the colour faded. . .
A third argument against analyzing in as a remote past marker is that it does not predictably have a remote past meaning. It only adds a sense of remoteness when it occurs with aspects that have a default past interpretation, and it does not always do so even in these contexts, as I show later in this chapter when I discuss some of the other functions of in.

None of the arguments I have given absolutely refute analyzing in as a remote past marker (as one of its meanings). However, they show that if it were a remote past marker, it would at least be a rather odd one. I would like to present another option that is more elegant.

We know already that in marks past tense when it occurs with default-present tense expressions and with future expressions. For default past expressions, it would be difficult to tell if adding ín contributes past meaning or not because the meaning is already past. That is to say, there is no evidence that in does not have a past tense function in such cases. I argued in chapter 4 that the perfective is interpreted as past tense because of something called the Bounded Event Constraint, which states that bounded events can not be located in the present. Most perfectives

[^149]are bounded (i.e. they have both the initial and final points within the reference time). The present is usually understood to be a single moment and a bounded event can not usually fit inside a single moment (Bennett and Partee 1978, see also Smith 2008, Kamp and Reyle 1993:536-537). Recall from chapter 4 that a perfectives are structured as shown in (69).
69. Temporal Schema of Perfective


These structures makes no claims about tense (i.e. the position of R with respect to S ), but the bounded event constraint requires perfectives to have one of the structures in (70). ${ }^{241}$

## 70. Temporal Schema of Past Perfective



[^150]In a PRFV $+i n$ utterance, $i n$ would take a configuration like (69) and turn it into (70), because it requires R to be in the past with respect to S . Therefore, for aspectual suffixes that have a default past interpretation, the bounded event constraint performs nearly the same function as past tense. This is why PRFV utterances and PRFV + in utterances are difficult to distinguish: they are both interpreted as past. Although we might expect to be able to override a default past tense but not a true past tense, and thus distinguish them, this is difficult to do in Siamou because the perfective has such a strong default past that it does not appear possible to cancel it. An exception to this is performative verbs, as I showed in chapter 5. Performatives are verbs that express actions that are carried out by the very fact of uttering them. For example, by uttering "I refuse," a person performs the act of refusing. ${ }^{242}$ This means that performatives have an event time that is identical to the speech time. Therefore, the bounded event constraint does not apply because the event is able to fit inside the speech time, and so performative verbs can have a present interpretation even when they are inflected for perfective aspect. ${ }^{243}$

The verb ká (refuse) has a performative reading in (71a) when it is in the perfective. Adding in to this utterance shifts the meaning from the present to the past, and thus cancels the performative reading (71b). In (71-72), the (a) examples show the performative utterances, which have a present interpretation. The (b) examples are identical except for the presence of in and they have a past interpretation, and because they are past they are no longer performative. This is exactly what is predicted is $i n$ is past tense.
71. a. Ń ni ń ká.

1 SG FIN 1 SG refuse.PRFV I refuse.
comment: This is a popular utterance among children at Téndenno (the courtyard I live in when I am in Tin).

[^151]| b. | Ń | ni | ń | ká | ín. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1SG | FIN | 1SG | refuse.PRFV | PST |
|  | I refused. |  |  |  |  |
|  | French: J'avais refusé. (C) |  |  |  |  |

context: You ask me what I did when my brother asked to have my moto.
72.

| a. | N ni | lé $\varepsilon$ | bla | gbo | yenn-gbòn | á se. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | I promise you that I will come in the morning.

French: Je te promets que je vais arriver le matin. (L)/ Je te promets de venir chez toi le matin. (C)
context: You're worried because you have to go to Bobo tomorrow morning, but your moto is broken. I tell you that you can borrow my moto. You want to leave in the morning and you don't want me to be late bringing it to you. I tell you this.
b. Ń ni lé bla gbo yenn-gbòn á se ín. 1SG FIN morning come.IMPF.NOM thing mouth-take.PRFV 2SG to PST I promised you that I would come in the morning. French: Je t'avais promis de venir chez toi le matin. (C)
context: I arrive at your place in the morning. You are surprised. You thought I was coming in the afternoon. I say this.

If in simply marks past tense when it occurs with aspects that have a default past interpretation, then what causes it to be interpreted as a remote past? I explore this in 6.4 .2 where I argue that the remote past meaning is a conversational implicature.

### 6.3.3.2 ín + Completive $\boldsymbol{e}$ è = "Past Completive"

In 6.3.3.1 I focused on the interaction of past tense $i n$ with perfective aspect. The completive aspect suffix -è also has a default past interpretation (73a). Adding in to the completive results in an utterance that is interpreted as more remote (73b).
73. a. N ni kel-è.

1SG FIN talk-CMPL
I spoke./I said everything.
French: J'ai parlé./J'ai tout dit (C)
b. Ń ni kel-è ín. 1SG FIN talk-CMPL PST I have spoken (awhile ago).
consultant comment: This is further in the past than [the utterance in 73a].
This suggests that the completive with in parallels the perfective with in, but I do not have enough data to present a complete analysis at this time. It is possible that the default past interpretation of the completive aspect is also cancelable in certain contexts, In that case, we would expect that in would also shift such utterances to the past.

To summarize, I have shown that ín can mark past tense in combination with all grammatical aspect categories, as well as with non-verbal predicates. Since in always marks past tense, I conclude that this is its primary meaning. In the next section, I look at the remaining meanings of $i n$.

### 6.4. Deriving the Implicatures of Siamou Past Tense ín

Implicatures are very common in language (Grice 1967, Jaczsolt 2009, among others), and they may make up the most salient meaning of an utterance, so it is not surprising to find that in can have so many implicatures and that sometimes they can even be more salient than the lexical meaning of past tense, especially if the utterance has a past construal independently of in . In this section I examine the following five meanings of in (74), show that at least three of them are conversational implicatures of past tense, and explore the contexts in which they arise.
74. a. more remote (with default past utterances)
b. counterfactual (with future utterances)
c. not the case anymore (with default past and default present utterances)
d. politeness (no known restrictions)
e. doubt (no known restrictions)

As discussed above, implicatures have the characteristic properties listed in (75).
75. a. cancelable (possible to get rid of)
b. non-detatchable (i.e. an utterance with the same general semantic content in the same context will have the same implicature)
c. not part of literal meaning
d. different truth conditions than literal meaning
e. indeterminate (hard to pin down a precise meaning)

I show that each of the past tense implicatures has at least some of these properties, especially the property of being cancelable.

### 6.4.1 Deriving the Remote Past Implicature

When utterances that have a default past interpretation are marked with past tense in, they are often interpreted as being more distant in the past than the same utterance without in. I argued in 6.3.3 that in always marks past tense, even when it modifies default past expressions. If the meaning of the utterance is already past, then adding the past tense in would not change it. This is not really a problem - redundancy is pervasive in language. However, if in is not required to be part of a sentence to contribute past tense, and it is not required to be part of a sentence to make that sentence grammatical, then we have to ask what reason a speaker might have for adding this particle to their utterance. If speakers are obeying the rules of conversation and not randomly adding bits of phonology (which would be flouting the maxim of manner (Be clear and concise.) and also perhaps the maxim of quantity (Don't say more than necessary.), then we have to assume that in is contributing something. The audience, if they assume the speaker is obeying the rules of conversation, must also assume that $i^{n}$ is contributing something. Perhaps they say to themselves, "If she is marking something as past that is already past, it must really be past!" And thus we get a conversational implicature meaning of remote past.

The remote past meaning is easy to cancel by context. For example, if in is used in a context that indicates that the speaker is expecting a response from the listener, then it does not have a remote past meaning. The utterance in (76) is not incompatible with a remote past reading, but in the given context, the speaker is wondering why the other person has asked if he's already had his turn. In this case, in does not indicate remoteness, but an indirect (or polite) way of asking for a response.

| 76. | N | ni | kel | ín. |
| :--- | :--- | :--- | :--- | :--- |
|  | 1SG | FIN | talk.PRFV | PST |

I talked. (Why are you asking?)
French: J'ai parlé/J'avais parlé. (Pourquoi est-ce que tu me demandes?) (C)
context: Everyone's taking turns speaking. Someone asks me if I've already had my turn. I have, so I say this. I'm wondering why they're asking.
consultant comment: This could mean that this is further in the past (than the same utterance without $i n$ ), OR it could mean that you're wondering why they're asking you this question.

By hypothesis, $i n$ is a lexical past tense marker, and the utterance has a default past interpretation without in . Co-operative communication principles require the listener to assume that the speaker has some reason for adding a past tense marker to an utterance that is already interpreted as past, and this causes the inference that the event might be more distant in the past. The context also has to support the listener's inference. If, for example, the context supports the inference that the speaker is trying to be polite, rather than indicate remoteness, then there will be no remoteness implicature.

Unlike remote past tenses in many other languages, $i n$ does not have a temporal cut-off point. It is compatible with events earlier on the same day, or events from yesterday, or events from the distant past. It serves to make whatever event predicate it modifies more remote, but there is no clear indication of what counts as remote. This indeterminacy is odd for a remote past tense marker, but expected of an implicature.

The fact that implicatures are non-detachable leads us to ask why past tense markers in other languages, such as English -ed do not have a remoteness implicature. Example (77a) has a present interpretation, and (77b), with -ed, has a past interpretation, but no remoteness implicature.
77. a. I answer the phone.
b. I answer-ed the phone.

The reason for this is that the remoteness implicature is only expected to arise when a speaker has a choice between two or more expressions with a past interpretation. In Siamou, both the perfective and the perfective plus in have a past interpretation, and the second one may have a remoteness implicature. In English, and other similar languages, there is no such choice. Without the past tense -ed, an utterance has a present interpretation. Therefore, -ed is only interpreted as past with no remoteness implicature. I would expect to see a remoteness implicature in other languages that have aspectual categories with default past interpretations, and a past tense marker.

### 6.4.2 Deriving the Counterfactual Implicature

I showed in 6.3.2 that when in occurs with future expressions, the resulting utterance has a reference time that is shifted to the past. These kinds of utterances also have a counterfactual implicature, which means that the event is understood to have never actually happened, even if it
is not overtly stated. In (78), the speaker is stating that he had the intent to go to Orodara. He never says that he did not go, but it is understood that he did not.

| 78. | Ń | bè | don-na | Tòl | ín. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1SG | MOD | go-PRSP1 | Orodara | PST |
|  | I was going to go to Orodara | (but something prevented me). |  |  |  |

The fact that the event never occurred can be understood from context. In (79), presumably the speaker did not actually die, or they wouldn't be talking about it.
79. Ń bè na kú-b̂̂ ín. 1SG MOD today die-PRSP2 PST I could have died today.
context: I was at the river when the truck fell off the bridge. I could have died, but I escaped.

The fact that the event never occurred can also be stated overtly (80).
80. Fòn bè nun gbe-a ín, kè nun fon bo, Tim MOD water drink-PRSP1 PST but water be.here NEG Tim was going to drink water, but there wasn't any water,

| fù | $\mathrm{r}^{\prime}$ | à | jél, | à | nun | y $\grave{\varepsilon}$ | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| DEM | FIN | 3SG | allow.PRFV | 3SG | water | drink.PRFV | NEG |

so he didn't drink water.

It can be difficult to separate the lexical meaning of the utterance from its implicature. Without a proper context, adding a clause asserting that the event did actually occur is infelicitous (81).

$$
\begin{array}{lllllll}
\text { \# À } & \text { bè } & \text { li-a } & \text { ín, } & \text { à } & \text { ki } & \text { li. } \\
\text { 3SG } & \text { MOD } & \text { go.out-PRSP1 } & \text { PST } & \text { 3SG } & \text { NFP } & \text { go.out } \\
\text { intended reading: } & \text { S/he was } & \text { going to go out and then she did. }
\end{array}
$$

consultant comment: This is contradictory.
However, if the right kind of context is given, it is possible to cancel the implicature (82-83). The context usually needs to have a gap between the time when the subject was going to be doing

[^152]something and the time when it actually occurred. During that time, it started to look like the event was not actually going to happen, but then it did after all. In (82), the subject forgot something that he was supposed to do, but the next morning he was reminded of it, and did it. In (83), the subject wanted to have a drink, and was not able to find water at first, but after a long search, he found some and ended up having a drink after all.

$\begin{array}{llllllllll}\text { 82. } & \text { A } & \mathbf{b}^{\prime} & \text { à } & \text { kpàr=1 } & \text { blîn-a } & \text { ín } & k^{\prime} & \text { à } & \text { blíin. } \\ & \text { 3SG } & \text { MOD } & \text { DEF1 } & \text { mat=DEF2 } & \text { fold-PRSP1 PST } & \text { NFP } & \text { 3SG } & \text { fold }\end{array}$
He was going to fold the mat, and then he folded it.
Elle allait finir par plier la natte, et puis elle l'a plié. ${ }^{245}$ (C)
context: My brother was supposed to fold the mat right after supper, but he forgot about it until morning. Then I reminded him, and so he folded it.
83. À bè nun gbe-b̂e ín. . .

3SG MOD water drink-PRSP2 PST
He was going to drink water. . .

| À | ri | nun | ymón | $k^{\prime}$ | à | gb $\varepsilon$. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3SG | FIN | water | see.PRFV | NFP | 3SG | drink |

He found water and drank it.
context: I am talking about someone who was thirsty and needed a drink but couldn't find water. He looked; he asked around. Finally he found some and drank it.

The lexical meaning of the utterance and the implicature (counterfactual) have different truth conditions. For example, the lexical meaning of (78) above is true even if the subject does go to Orodara, but the implicature is false.

Cross-linguistically, it is very common for futures-in-the-past to have counterfactual implicatures (Iatridou 2000). As with the remote past implicatures, counterfactual implicatures come about because of the co-operative principles of communication. Speakers are expected to be perspicuous. If, in (78), the subject actually did go to Orodara, you could just say I went to Orodara. The fact that the speaker is saying something more complicated than that means that he probably has a reason to say something more complicated, and that reason is that the event never actually happened. In (82-83), the reason for saying something more complicated is not that the event never happened, but that the event ran the risk of not happening.

[^153]
### 6.4.3 Deriving the Cessation Implicature

Sometimes in may cause an utterance to have an implicature that the event described by the utterance or the effects of that event are not the case anymore. This is sometimes called a cessation implicature, and is described by Altshuler and Schwarzschild (2013) as follows:
84. Cessation Implicature: When the utterance of a past tensed sentence implicates that no state of the kind described currently holds (Altshuler and Schwarzschild 2013:47).

For example, in (85a), the person may still be asleep. In (85b) they are generally understood to have finished sleeping.
85. a. À ri dyćl.

3SG FIN sleep.PRFV
S/he slept. French: Il a dormi. (C) consultant comment: S/he might still be sleeping, or already awake.
$\begin{array}{llll}\text { b. } & \text { À } & \text { dyćl } & \text { ín. } \\ & 3 S G & \text { sleep.PRFV } & \text { PST }\end{array}$
S/he slept.
French: Il avait dormi. (C)
consultant comment: $\mathrm{S} / \mathrm{he}$ 's done sleeping now.
This reading is available for perfective expressions, as in (85). It is also available for completive (86), stative (87-88) and imperfective (89) expressions, as well as non-verbal predicates (90). In (86-90), the (a) examples do not have $i n$ and the event (water boiling, dog surviving, wood floating, Lillian talking with Fanta, younger sibling being at home) is understood to be currently occurring. In (86b), it is no longer certain that the water is still boiling. In (87b), it is quite possible that the dog has subsequently passed away, in (88b), the wood might not be floating anymore, ${ }^{246}$ in (89b) Lillian is understood to no longer be talking with Fanta, and in (90b) the younger sibling might not be there anymore.

[^154]86. a À nun=̂̂ ri fún-è. DEF1 water=DEF2 FIN boil-CMPL
The water boiled.
French: L'eau a bouillis. (C)
consultant comment: This means the water just began to boil and is still boiling.
b. À nun=î ri fún-è ín.

DEF1 water=DEF2 FIN boil-CMPL PST
The water boiled.
French: L'eau avait bouilli. (C)
consultant comment: If you say this, you do not know if it's still boiling.
87. a. À ri flì-nèn.

3SG FIN survive-STAT
It survived.
French: Il a surveçu. (C)
context: Talking about a sick dog. I see it lying in the same place I saw it before. I ask you about it and you say this to tell me that it's alive.
b. À ri fli-nèn ín.

3SG FIN survive-STAT PST
It had survived.
French: Il avait surveçu. (C)
context: Talking about a dog that survived an illness a few years ago. The dog has since died of old age.
88. a. À nan=1̂ ri báa-n à nun=î jinatyé. DEF1 water=DEF2 FIN float-IMPF DEF1 water=DEF2 on.top.of
The wood is floating on the water.
French: Le bois flotte sur l'eau. (C)
context: There is a piece of wood floating on the water right now.
b. À nan=î ri báa-n ín à nun=î jinatyé.

DEF1 water=DEF2 FIN float-IMPF PST DEF1 water=DEF2 on.top.of The wood was floating on the water.
French: Le bois flottait sur l'eau. (C)
consultant comment: There could be some uncertainty about whether the wood is still there or not because you said in. Maybe someone picked it up since you saw it, so it's no longer there, or maybe it's still there. Or maybe it sank.
89. a. À mí keとl-n Fanta wóse. 3SG be.there talk-IMPF Fanta with She is over there talking with Fanta.
context: You ask me where Lillian is. I see her on the road talking with Fanta.
b. À mí kecl-n ín Fanta wóse. 3SG be.there talk-IMPF PST Fanta with She was over there talking with Fanta. context: You ask me where Lillian is. I saw her a few minutes ago on the road talking with Fanta. If you say this, it means they are no longer talking on the road.
90. a. Á sró=ô mí à di á?

2SG younger.sibling=DEF2 be.there DEF1 home Q Is your younger sibling at home?

À mí.
3SG be.there
He's there.
$\begin{array}{lllllll}\text { b. Á } & \text { sró= } & \text { mí } & \text { à } & \text { di } & \text { á? } \\ & \text { 2SG } & \text { younger.sibling=DEF2 } & \text { be.there } & \text { DEF1 } & \text { home } & \text { Q }\end{array}$ Is your younger sibling at home?
À mí ín.
3SG be.there
PST

He was there./He might be there.
consultant comment: This means that you aren't sure if the person is there anymore.

This implicature is not available for future expressions because in that case the implicature is that the event never even happened (counterfactual). It is also possible that the lexical aspect of the main verb affects whether or not this reading is available, but I have not tested this in Siamou yet.

As with counterfactual implicatures, cessation implicatures have different truth conditions than the lexical content of the utterance that gives rise to them. For example, in (90b), the lexical content of the utterance is true as long as your younger brother was at home at the relevant point in the past. The implicature that he is no longer there is not true if he still happens to be at home.

The following example shows that this implicature can be cancelled. It is possible to assert that something was the case, and is in fact still the case (91).
$\begin{array}{lllllllll}\text { 91. } & \text { À } & \text { l̂ } & \text { ín } & \text { fù } & \text { nì } & \text { à } & \text { lô } & \text { yé. } \\ & \text { 3SG } & \text { white } & \text { PST } & \text { DEM } & \text { and } & \text { 3SG } & \text { white } & \text { still }\end{array}$
It was white and it's still white.
context: Talking about a house that was painted white.
The example in (92) also shows that in implicates (but does not entail) that the situation no longer holds. If (92a) is uttered on its own (by Person A), the listener assumes that the mat is no longer spread. However, the listener (Person B) can ask whether the mat is still spread (92b), and Person A can respond either negatively (92bi) or positively (92bii).
92. a. Person A: Ń ni kpàr bré ín.
1SG FIN mat put.PRFV PST

I spread a mat.
French: J'avais mis une natte. (C)
consultant comment: The mat's not there anymore.
b. Person B: À kpàr=̂ 1 ri búr-nèn yé á?
DEF1 mat=DEF2 FIN put-STAT still Q

Is the mat still spread?
French: Est-ce que la natte est encore posé? (C)
context: This can be asked of someone who has just uttered (92a).
$\begin{array}{llllll}\text { i. Person A: } & \begin{array}{l}\text { Owo, à } \\ \text { no }\end{array} & 3 \mathrm{SG} & \text { búr-nèn } & \text { put-STAT } & \text { ká } \\ & & \text { anymore } & \text { NoG }\end{array}$ No, it's not spread anymore.
context: Negative response to the question.
ii. Person A: Oo, à búr-nèn yé. yes 3SG put-STAT still Yes, it's still spread.
context: Affirmative response to the question.
Cessation implicatures are a common implicature for a past tense to have. For example, in English, the past in (93) does not explicitly state that it is no longer true, but it implies it. In
the absence of any statement to the contrary, it is assumed that the subject is no longer rich. ${ }^{247}$ (See Altshuler and Schwarzschild (2013).)
93. She was rich.

The fact that this is an implicature, not an entailment is shown in (94). The speaker can assert that the past action is still, in fact, on-going.
94. She was rich, and she's still rich.

Grice's (1989) conversational maxims state that speakers should be as clear and concise as possible. Therefore, if something is still the case, it would often (but not always) be clearer to use present tense (or a grammatical aspect that is present by default). Speakers are also usually expected to be relevant. Often, depending on context, current situations are more relevant than past situations. Therefore, if a speaker deliberately uses past tense, and the context is such that present tense would be clearer and more concise, and more relevant, the listener might assume that the reason the speaker chose past tense is because the situation no longer holds. (See Thomas (2012).)

We have now looked at three of the five implicatures of in. Only two remain (politeness and doubt), and I look at them in the next two sections.

### 6.4.4 The Politeness Implicature

In this section I discuss the politeness reading of $i n$. I then move on to 6.4 .5 where I discuss the doubt reading of in , and I analyze the politeness and doubt readings together in 6.4.5.

When $i n$ has a politeness reading, it often serves as a way of hinting to the listener that a response is expected of them. In (95a), without $i n$, the speaker is just giving information, but in ( $95 b$ ), there is an implied request, perhaps that the listener should fix or replace the clothes. This is an example of politeness because the speaker is not stating their request directly, but only hinting at it, which makes it easier for the listener to ignore the request and save face.
95. a. À bisháayn=î ri án wâ dè. DEF1 child=DEF2 FIN POSS cloth wear.out.PRFV The child wore out his/her clothes.

[^155]$\begin{array}{llllllll}\text { b. } & \text { À } & \text { bisháann=1 } & \text { ri } & \text { án } & \text { wâ } & \text { dè } & \text { ín. } \\ \text { DEF1 } & \text { child=DEF2 } & \text { FIN } & \text { POSS } & \text { cloth } & \text { wear.out.PRFV } & \text { PST }\end{array}$ The child wore out his/her clothes.
consultant comment: Either this happened a long time ago, or you're waiting for a response. Maybe you want them to replace them or fix them.

The politeness meaning does not seem to be restricted by aspect. It can occur with the perfective (above), the completive (96), the imperfective (97), the stative (98), the prospective aspect 2 (99), and the prospective aspect 1 (100). In (96) the speaker is telling the listener that they just spread a mat, but by using in, the speaker is implying something more, for example, that the listener can come join him on the mat, or that he is willing to move the mat if it's in the way.
96. Ń kpàr búr-è ín.

1SG mat spread-CMPL PST
I spread a mat. (Come rest./Should I move it?)
French: J'avais installé une natte. (C)
context: You just spread a mat, and you're inviting someone to come sit on it with you. context: You just spread a mat, and you're letting the other person know that you're willing to move it if it's in their way. consultant comment: Here in doesn't make the event further in the past, unless you're talking about something that happened a long time ago. Usually this means it just happened. You just spread the mat.

In (97), the speaker wants to spread a mat, but he is unable to because there is no room, so he is hinting to the listener to make room.
97. Ń kpàr brée-n ín. 1SG mat put-IMPF PST
I was putting down a mat. ${ }^{248} / \mathrm{I}$ 'm putting down a mat (ahem).
French: J'installait une natte./J'installe une natte-qu'est-ce que tu penses? (C)
context: Solo has his mat on the ground, and I want to spread mine too, but there's no room. I say this to mean "Get up! I want to spread my mat." but in a more polite way. consultant comment: You're asking another person's opinion or permission.

In (98), the speaker is sharing information with the listener and wondering what they think of it.

[^156]$\begin{array}{llllllll}\text { 98. } & \text { Ń } & \text { à } & \text { ymón, } & \text { à } & \text { bè } & \text { fli-jèn } & \text { ín. } \\ & \text { 1SG } & \text { 3SG } & \text { see.PRFV } & \text { 3SG } & \text { MOD } & \text { survive-STAT } & \text { PST }\end{array}$
When I saw it, it was alive.
French: Quand je l'ai vu, il a surveçu. (C)
context: Talking about a sick dog. I'm wondering what you think of that.
In (99), the speaker wants to have a drink of water but something is preventing him (either the person standing in front of the water filter, in context 1 , or the fact that he is in someone else's home and it would not be polite for him to get his own water). In both cases he is indirectly requesting that the other person do something so that he can have water-either get out of his way, or bring him some.

| 99. ${ }^{249}$ | N | bè | nun |  | be- |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 S | MOD | wate |  | rink |
|  | I was going to drink water. |  |  |  |  |

context 1: I'd like to get some water but Tim is standing in front of the filter. I say this so he'll move out of my way so I can get water. context 2: I come to your place and I'd like some water so I say this.

In (100), the speaker is offering tentatively to cook for a party, if the listener agrees, and if no one else wants to do it.

| 100. | À | nì | tènn | á | se | gbo | gyal | bo | ín |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | if | become.PRFV | 2 SG | to | thing | bad | NEG | PST |

ń bè múkâl táan-a ín. 1SG MOD tô cook-PRSP1 PST If it wasn't a problem for you, I would cook tô.
context: There's going to be a party. They're looking for someone to cook. I volunteer. consultant comment: This means you're giving someone else the option of offering as well. ${ }^{250}$

In all cases, the speaker is using in to say something in addition to what they are overtly stating. By being indirect, they are being polite because they are not forcing the listener to respond to a direct request. See Haugh (2007) for discussion of implicatures and politeness.

[^157]
### 6.4.5 The Doubt Implicature

Sometimes in indicates speaker doubt regarding something related to the proposition. The difference between (101a) without $i n$ and (101b) with in is that in (101b) the speaker doubts what his younger brother is saying. He is not doubting the content of the proposition. He believes that his brother said that he got up early. He is doubting whether or not what was said is actually true.
101.

| a. | Ń | srós | $j \jmath=\hat{\jmath}$ | r' | à | ló |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1SG | younger.sibling | man=DEF2 | FIN | 3SG | say.PRFV |


| d' | á | sel | duklb́. |
| :--- | :--- | :--- | :--- |
| QUOT | LOG | get.up.early | get.up.PRFV |

My younger brother said that he got up early.
b. Ń srós jo=̂ ri à ló

1SG younger.sibling man=DEF2 FIN 3SG say.PRFV

| d' | á | sعl | duklá | ín. |
| :--- | :--- | :--- | :--- | :--- |
| QUOT | LOG | get.up.early | get.up.PRFV | PST | My younger brother said that he got up early.

consultant comment: What he said may or may not be true. It's not that you think he's lying. You're just not sure.

In (102), the speaker is doubting the accuracy of his information. He is allowing for the possibility that he is wrong about who actually folded the mat.
102. A bè kpàr blín-jèn ín.

3SG MOD mat fold-STAT PST
He folded a mat (maybe).
French: Il a plié une natte (peut-être). (C)
consultant comment: You're not sure if it was him who folded the mat, but you think it could be him.

In (103), the speaker is not doubting that he spoke with his friend, but he is doubting that talking to him had the desired effect. His friend might not have understood what he was trying to tell him.
$\begin{array}{llllllll}\text { 103. } & \text { Kló } & \text { jiré } & \text { se, } & \text { ń } & \text { kel-nèn } & \text { ín } & \text { à } \\ \text { week } & \text { past } & \text { at } & \text { 1SG } & \text { talkese. } \\ \text { talAT } & \text { PST } & \text { 3SG } & \text { with }\end{array}$
Last week I talked with him.
French: La semaine passé, j'avais parlé avec lui. (C)
consultant comment: But now I'm wondering if he understood me. The ín gives the sentence this implied meaning.

The utterance in (104) is about a sick dog. My friend wants to know how the dog is faring, and I tell him that the dog did survive that sickness, but I am not certain about the current state of affairs-the dog might be doing poorly again, or he might even have died since then, even though he survived that illness.

| 104. | À | bè | fl $\boldsymbol{\varepsilon}$ | ín. |
| :--- | :--- | :--- | :--- | :--- |
|  | 3SG | MOD | survive.PRFV | PST |

He managed to survive (but I don't know if he's still doing well or not).
French: Il a reussi à survivre (mais je ne sais pas si ça va encore ou non) (C)
context: My dog had been sick. You ask me if he survived. I respond.
In (105), the speaker is reporting what his brother said, and expressing doubt about its veracity.

| 105. | Ń | srós | $j \jmath=\hat{\jmath}$ | $r^{\prime}$ | à | ló |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1SG | younger.sibling | man=DEF2 | FIN | 3SG | say.PRFV |

My younger brother said
d' à nun=î gbál-jè̀ ín.

QUOT DEF1 water=DEF2 become.cool-STAT PST
that the water is cold (but I don't believe him).
context: talking about the water in a lake that is not visible to the speaker or hearer consultant comment: Literally, he's saying that the water was cold, but figuratively, he's saying that he doesn't believe him.

The above examples show that in can implicate doubt when it occurs with perfectivemarked verbs $(101 b, 104)$ and with stative-marked verbs $(102,103,105)$. In (106), I show that it is possible for $i n$ to convey a sense of doubt even when it occurs in an environment where its usual function is simply to mark past tense (i.e. with imperfective aspect). In this case it still marks past tense, but it also conveys doubt, not about the eating, but about what happened after. This supports analyzing the sense of doubt as an implicature. If doubt were a separate meaning of $i n$ we would expect it to either mark past tense or doubt, but not both.

| À | fon | le | leè-n | ín | kyánmo. |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 3SG | be.here. | food | eat-IMPF | PST | now | He was eating here (just) now.

context: talking about someone who just finished eating. consultant comment (responding to the question of what is doubted in this situation): You doubt whether he went near or far after eating. In any case, he's no longer there where he ate. Nothing is certain after he ate.

From the above examples, it appears that the doubt is sometimes related to the truth of the lexical meaning of the utterance, but not necessarily. It could also be about some implicature in that utterance's context. For example, in (104), the dog actually did survive, but it is not necessarily still alive. In (106), the doubt is not about the content of the utterance- whether the person actually ate, but about what happened after.

Politeness and doubt both have to do with the speaker distancing him/herself from the information that is given. It has been noted previously that past tense can serve to mark politeness or doubt. Fleischman (1989) suggests that just like the past tense distances us from the present, doubt distances us from reality, and politeness distances us from the situation in a way that places less obligation on the listener. Either the speaker does not want to make claims that they can not support (doubt), or they do not want to be pushy or rude (politeness). Botne and Kerschner (2008) observe that the English past tense -ed can mark social distance or politeness as in (107).
107. I wanted to ask you about that picture.
(from Botne and Kerschner 2008:154)
A similar type of meaning as (106) is accomplished in English with sentence final falling-rising-falling intonation. For example, in (108), the daughter is hesitant about asserting that her brother got up, even though he did because she suspects he might have gone back to sleep.
108. context: A mother asks her daughter to go check on her brother to see if he's up. The daughter goes and finds that her brother is awake and out of bed, but so groggy that it looks like he might fall back asleep any minute. She comes back to her mother, and this exchange occurs:
mother: Did your brother get up?
daughter: Well, he got ù-ú-ùp. . .
English consultant comment: This sounds like it should be followed by the word "but."

The assertion that someone got up usually implies that he or she stayed up for at least a while, but with in in (101b), above, and with the English sentence-final intonation in (108), above, the speaker seems to be suggesting that although her brother got up, he did not necessarily stay up or do other things that usually occur when one gets up. Like with in, it is not the content of the utterance that is in doubt. The brother did get up. However, what happened after that is uncertain. This sounds very similar to (106).

This falling-rising-falling intonation can also indicate politeness as in (109).
109. context: I've gone out for supper with a bunch of my friends. The restaurant we're at has a big reservation, so we're required to leave by 7:00. It's still pretty early, and we're trying to decide what to do next. I'm really tired, but I know the others might not be ready to leave. I suggest that we just go home, but I use falling-rising-falling intonation to indicate that it's really just a suggestion and I'd be happy to do something else as well.
me: We could go hò-ó-òme. . .
One possible way of characterizing the contribution of $i n$ in these types of contexts is that it serves to suspend any implicatures normally associated with a proposition, leaving the hearer to decide what to make of the information. For example, if I say that the dog survived, it has the implicature that the dog is still alive. However, with in, that implicature is suspended. This, in a sense, creates its own opposite implicature: Why would you suspend the implicature that the dog is still alive unless you have some reason to suspect it no longer is? This does not mean you think the dog has died, you are just not sure. This is precisely how these types of utterances are frequently described by the Siamou consultant: "It's not that you think X, you're just not sure."

The politeness implicature can also be accounted for by claiming that in can suspend implicatures. Sometimes propositions place obligations or constraints on another person. For example, if I say that I am going to get a drink of water when you are clearly standing in my way, this obligates you to move (as in (99), repeated as (110) below). However, by adding in the speaker implicates that the implication that you are obligated to move has been cancelled. You can still move if you want to of course, but you do not have to. Thus the utterance is interpreted as more polite.

```
110. Ń bè nun gb\varepsilon-b\grave{ i ín.}
    1SG MOD water drink-PRSP2 PST
    I was going to drink water.
```

context 1: I'd like to get some water but Tim is standing in front of the filter. I say this so he'll move out of my way so I can get water.
context 2: I come to your place and I'd like some water so I say this.
Another way of looking at it is that politeness may either be an implicature itself, or a meaning that arises as the result of an implicature (an implicature of an implicature?). For example, in (99), the utterance has a counterfactual implicature. The lexical meaning includes past tense, and the implicature is that the speaker did not actually drink water. If the listener hears this and assumes that what the speaker said is relevant to their current situation, he might wonder why the speaker did not drink, and then realize that it is because he is in the way, and then move out of the way without the speaker having to ask him directly to move. Notice here that although the utterance is marked with past tense, there is nothing past about the situation: the speaker currently wants water, and the listener is currently in the way.

In this section, I discussed the politeness and doubt readings of past tense $i n$. However, it is not clear whether these are conversational implicatures derived from conversational maxims (Grice 1989), or some other kind of implicature. It is possible that they are implicatures that have been conventionalized. (See Recanati (2003).) At this point, I am not sure how to derive them.

In the following paragraphs I consider and reject some alternative analyses for these readings. In 6.2 I discussed four possible ways that the meanings of a multi-functional morpheme can be related (or not related). I have argued that all of the meanings of in except past tense arise from conversational implicature. In this section, I would like to explore alternative analyses for the politeness and doubt readings (abstract meaning in particular), and show why the implicature analysis is the best one. The four possibilities are shown in (111). I have grouped politeness and doubt (P/D) together for simplicity.
111. a. Homophony

b. Polysemy

c. Conversational Implicature

d. Abstract Meaning


The first possibility (homophony, (111a)) is that in marks past tense, and also politeness and doubt, but there is no connection between them. This is very unlikely. It is very common for past tense to mark politeness and irrealis-type things (such as doubt) in many languages (see Fleischman 1989, Klein 1994). Since this is not unique to Siamou, it is likely not an accident, and we would prefer to find a connection between the two sets of meanings.

The second possibility (polysemy, 111b) is that the meanings are distinct, but that there is some link between them. Fleischman (1989) frames the connection between them as a metaphor. She suggests that just like the past tense distances us from the present, doubt distances us from reality, and politeness distances us from the situation in a way that places less obligation on the listener. However, if we adopted this analysis for Siamou, we would expect that it would have either one reading (past tense) or the other (politeness or doubt). Since it can mark past tense and doubt simultaneously, this explanation does not work (although the insight that temporal distance can be a metaphor for social distance is interesting and useful).

Conversational implicature (111c) was explored above.
The fourth possibility, abstract meaning (111d), also makes use of the concept of distancing. In this theory, in has the function of taking a central point on a scale and giving as its
value a displacement from that central point. The scale is not specified, which is how the meaning comes to be more abstract than just past tense. It can be temporal, in which case the central point (T0) is the present, and $i_{n}$ marks past tense (T0-1). The scale can be modal, in which case the central point is the real world and in marks an event as being some distance from the real world, which is what causes it to be interpreted as doubt. The scale can also refer to the speaker's investment in the situation, in which case in marks politeness. If the scale is temporal, T0 represents the speech time (the present), and then the function of in is to place the reference time of an utterance at some point preceding T0, which is past tense. If T0 is the present, then T0-1 is the past. This is shown in the diagram in (112). (See Fleischman (1989) for discussion.)

## 112. Temporal Distance

--------------[(T0-1)]----------------[T0]
There are three main objections to this theory. First of all, the temporal scale differs from the other scales in that there is more than one direction that can be distant from the central point: either the past or the future. If in only marks distance, then it should be able to be used for future events as well, which it is not. Secondly, if the meaning is so abstract that it does not specify the scale, then we expect there to be other scales as well, such as locative, for example. The particle in shows no indication of being used to mark physical distance from the speaker. ${ }^{251}$ Thirdly, I showed in (100), repeated as (113) below, that ín can mark past tense and doubt simultaneously. This makes sense if doubt is a conversational implicature, but not if it is part of a more abstract meaning.

| 113. | À | fon | le | leè-n | ín | kyánmo. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3SG | be.here. | food | eat-IMPF | PST | now |

He was eating here (just) now.
context: talking about someone who just finished eating. consultant comment (responding to the question of what is doubted in this situation): You doubt whether he went near or far after eating. In any case, he's no longer there where he ate. Nothing is certain after he ate.

[^158]
### 6.5 Conclusion

In this chapter I have shown that in is a past tense according to the criterion that it shifts the reference time of an utterance to the past. I have also shown that it has a number of implicatures that are associated with it being a past tense. It also marks politeness and doubt, which is not unusual for a past tense marker.

This is a first pass at analyzing a morpheme that has never been studied before. Much was left undone. I did not look at the contribution of in in multi-clausal sentences, most notably sequence of tense effects. It would also be interesting to explore the cases where in expresses politeness and doubt in greater depth, especially their connection to past tense.

## 7. Future Expressions

Siamou has three main future expressions: the priority future ri. . .-a (1a), the simple future $b e ̀ . ~ . ~ .-a ~(1 b), ~ a n d ~ t h e ~ c e r t a i n ~ f u t u r e ~ b e ̀ . ~ . ~ .-b \hat{\varepsilon}(1 c)$.

$\begin{array}{llll}\text { b. } & \text { À } & \text { bè } \quad \text { nun } \\ & \text { 3SG FIN water } \\ & \text { He will drink water. } \\ & \text { French: } & \text { Il boira de l'eau. (C) }\end{array}$
$\begin{array}{llllll}\text { c. } & \text { À } & \text { bè } & \text { nun } & \text { gbe-bè. } & \text { (certain future) } \\ & \text { 3SG } & \text { FIN } & \text { water } & \text { drink-PRSP2 } & \end{array}$
He is going to drink water.
French: Il va boire de l'eau. (C)
The priority future ( $r i \ldots-a$ ) sometimes has a sense of either desire or obligation on the part of the subject. (The term priority future is inspired by the priority modal category from Portner (2009).) The simple future bè. . .-a is so named because it seems to have the most general meaning. Traoré (1985) describes it as more distant and uncertain than the other futures. The certain future bè. . .-bê may refer to events that are more certain or nearer in the future than the other two future expressions. The goal of this chapter is to describe these expressions and give a preliminary analysis of them.

The chapter is organized as follows: In the next section (7.1), I give a morpho-syntactic description and analysis of these futures, observing that they are distributed across three syntactic positions. In 7.2 I look at some literature on the semantics of future expressions, which necessarily includes a discussion of modality, as well as tense and aspect. I introduce some tools that have been used for analyzing modals and future expressions and some of the ways other linguists have approached similar data in other languages. In 7.3 I give a partial analysis of the Siamou future expressions by applying some of the tests from 7.2. I argue that all three future expressions encode both prospective aspect and modality. The analysis leaves many questions

[^159]unanswered. In particular, the type of modality encoded by these future expressions is still unknown. These questions are discussed in the conclusion (7.5). Section 7.6 serves as an appendix to this chapter, and it provides additional unanalyzed data for each of the three futures.

### 7.1. Siamou Future Expressions Involve Three Syntactic Positions

The morphemes that make up the three future expressions in (1) are distributed across three syntactic positions: an aspectual position (which includes $\boldsymbol{- a}$ and $\boldsymbol{- b} \hat{\boldsymbol{\varepsilon}}$ ), a modal position (b${ }_{\boldsymbol{b}}$ ), and a finiteness position (ri). These are shown in Table 7.1.

Table 7.1 Three Future Expressions

|  | Finiteness | Modality | Aspect |
| :--- | :--- | :--- | :--- |
| a. Priority Future | ri |  | -a |
| b. Simple Future |  | bè | -a |
| c. Certain Future |  | bè | $-\mathrm{b} \hat{\varepsilon}$ |

Each expression is formed using one of two particles, $\boldsymbol{r i}$ or $\boldsymbol{b} \grave{\boldsymbol{e}}$, and one of two verbal suffixes, $-\boldsymbol{a}$ or $-\boldsymbol{b} \hat{\boldsymbol{\varepsilon}}$. The fourth alternative, combining the particle $r i$ with the suffix $-b \grave{\varepsilon}$, is not an acceptable Siamou utterance (2).
$\begin{array}{lllll}\text { 2. } & \text { A } & \text { ri } & \text { nun } & \text { gbe-b̀̀. } \\ & \text { 3SG } & \text { FIN } & \text { water } & \text { drink-PRSP2 }\end{array}$

The tree in (3) represents these three positions syntactically. The suffixes $-a$ and $-b \hat{\varepsilon}$ occur in the aspect head to the right of the verb phrase. The modal particle be is in the modal phrase, just above the aspect phrase, and the particle $r i$ is in the finiteness phrase above the modal phrase.


The two suffixes occur in one syntactic position, as evidenced by the fact that they are in complementary distribution, as shown in (4). The suffix - $a$ can never occur in the same clause as the suffix -bê, in either order.
4.
$\begin{array}{lll}\text { a. } & * \begin{array}{ll}\text { A } & r^{\prime} / b^{\prime} \\ & 3 \mathrm{SG} \\ \mathrm{FIN} / \mathrm{MOD}\end{array}\end{array}$
à gbe-a-bè.
3SG drink-PRSP1-PRSP2
b. * $\grave{A} \quad \mathrm{r}^{\prime} / \mathrm{b}^{\prime} \quad$ à $\quad$ gbe-bè-a.
3SG FIN/MOD 3SG drink-PRSP2-PRSP1

However the same is not true of the particles $r i$ and bè. Although they almost never cooccur, there is one obscure bit of evidence to show that they are actually in two different syntactic positions. The sentence in (5a) is from a draft of a Siamou translation of the book of Exodus (Traoré et al. 2014). In that example ri and bè occur in the same clause. This sentence was later revised to the version in $(5 b)$ in which $r i$ has been removed. The consultant states that the (5a) version is not ungrammatical, but "heavy" and that there is no need for $r i$ if bè is there already. ${ }^{253}$
5. a. Yì ri b' à níin-ton=nî tená-a. 3SG FIN MOD DEF1 two-ORD=DEF2 believe-PRSP1 They may believe the second.
note: This is from an early draft of Exodus (chapter 4 verse 8).

[^160]| i. | À | ri | $\mathrm{b}_{\boldsymbol{\varepsilon}-\mathrm{a}}$ | bo |
| :---: | :---: | :---: | :---: | :---: |
|  | 3SG | FIN | come-PRSP1 | NEG |
|  | S/he won't be allowed to come. |  |  |  |
| ii. | À | wo | b --a | bo. |
|  | 3SG | NPI | come-PRSP1 | NEG |
|  | S/he won't want to come. |  |  |  |
| iii. | À | bè | b --a | bo. |
|  | 3SG | MOD | come-PRSP1 | NEG |
|  | S/he won't come. |  |  |  |

$\begin{array}{lllll}\text { b. Yì } & \mathbf{b}^{\prime} & \text { à } & \text { níin-ton=nî } & \text { hloja-a. }{ }^{254}\end{array}$
3SG MOD DEF1 two-ORD=DEF2 believe-PRSP1
They may believe the second.
comment: This is the updated text of the same verse.
The example in (5a) shows that $r i$ and bè are not actually in complementary distribution, although they may appear to be so most of the time. This means that the pre-predicate particles $r i$ and bè are actually in two different positions. These three positions (the aspect position and two pre-predicate positions) are discussed in the following three subsections.

### 7.1.1 The Verbal Suffix Position Is Aspect

The verbal suffix position is the locus of aspect marking in Siamou, as I showed in chapter 3. There are four other aspectual suffixes that occur in this position: perfective (-L) (6a), imperfective (-n) (6b), completive (-è) (6c), stative (-nèn) (6d).
6. a. À ri byè. Perfective

3SG FIN come.PRFV S/he came.
b. À ri blaà-n. Imperfective

3SG FIN come-IMPF
She is coming.
c. $\grave{\mathrm{A}}$ ri bè-è. Completive

3SG FIN come-CMPL
S/he has already come.
$\begin{array}{lllll}\text { d. } & \text { À } & \text { ri } & \text { be-nèn. } & \text { Stative } \\ & \text { 3SG } & \text { FIN } & \text { come-STAT } & \\ & \text { S/he } & {[\text { has come]/[is here]. }} & \end{array}$
The null hypothesis is that the suffixes $-a$ and $-b \hat{\varepsilon}$ are also aspectual, since they fit into this paradigm: prospective $1(-a)(7 a)$ and prospective $2(-b \hat{\varepsilon})(7 b)$.
$\begin{array}{lll}\text { 7. a. } \begin{array}{ll}\text { a } & \text { ri be-a. } \\ & \text { 3SG FIN come-PRSP1 }\end{array} \quad \text { Prospective Aspect } 1 \\ & \text { She will come } \\ & \text { French: Il va venir. (C) } & \end{array}$

[^161]b. À bè be-b̀̀. Prospective Aspect 2

3SG MOD come-PRSP2
S/he is going to come.
In 7.3 I argue that the three future expressions all encode prospective (which orders event time after reference time) since they refer to events that are in the future, and since they have morphemes that occur in aspect position. This is corroborated by the fact that they co-occur with past tense. In 7.4.1, I use the semantic tools provided by our tense/aspect/modality framework to speculate on the semantic differences between them. In order to do so, I look at the difference in meaning between the simple future (bè. . .-a) and the certain future ( $b \grave{e} . . .-b \hat{\varepsilon}$ ), since these expressions both use the same particle bè, and only differ with respect to the aspectual suffix.

### 7.1.2 Pre-Predicate bè Is Modal

The pre-predicate position containing bè is less well-understood than the verbal suffix position. However, if prospective aspect meaning is contributed by the suffixes, one possibility is that the particle bè contributes modal meaning, since modality is a key component of the meaning of future expressions in many languages (see 7.2).

As discussed above, $r i$ and bè can co-occur (although they rarely do). This means that although bè appears to alternate with $r i$ it is actually alternating with ø. I discuss this further in 7.4.2.

The particle bè does not only occur in future expressions. It can occur in non-verbal predicates (8-9). However, it is not obligatory, as shown in (9), and its function in these types of clauses is unclear. ${ }^{255}$
8. Sègl yín-won bè à tyé mo. star néré-flour MOD DEF1 centre in There's a yellow star in the centre.
9. Á gbé (bè) lô mún gbé $\mathrm{A}^{\text {(bè) bwàr. }}$ 2SG body MOD white 1 SG body MOD black You're white and I'm black.

Bè may also occur with a bare verb (10). In this case it usually has a 'managed to/succeeded at' reading.

[^162]10. À bè kro dé.

3SG MOD knife sharpen
He succeeded at sharpening a knife.

Bè occurs with all six of the aspectual suffixes. With prospective aspect $1, b \grave{e}$ is the particle that forms the simple future (from (1b)). With prospective aspect 2, bè is obligatory (1c), and it forms the certain future. However, when be occurs with the other four aspectual suffixes, these phrases often have conflicting grammaticality judgements, or they are restricted to subordinate clauses. Bè + PRFV is the most marginal. Such constructions are often rejected as ungrammatical (11a). When they are accepted (11b), they have a managed to interpretation similar to bè with a bare verb, as in (10).
$\begin{array}{llllll}11 .{ }^{256} & \text { a. } & \text { * } & \text { À } & \text { bè } & \text { le }\end{array}$ dì.
b. À bè nun yغ̀.

3SG MOD water drink.PRFV
S/he managed to drink water.
Constructions with bè + CMPL are also sometimes rejected as ungrammatical (12a). When accepted, they also have a 'managed to/succeeded at' reading (12b). In (12c) the most salient interpretation is that the speaker finished what he set out to do.
12. a. *Ń bè kpàr búr-è. 1SG MOD mat spread-CMPL
b. À bè lì-è.

3SG MOD go.out-CMPL
He was able to go out.
French: Il a pu sortir. (C)
c. Ń bè kel-è.

1SG MOD talk-CMPL
I said everything (that I needed to say)./I managed to speak.
French: J'ai tout dit./J'ai reussi à parler. (C)
context: Everyone's making speeches. I finish my turn.

[^163]When be occurs with the imperfective (13a, 14a) and stative (13b, 14b) suffixes, it is usually restricted to subordinate clauses. ${ }^{257}$ Main clause examples like (13a-b) were rejected, and subordinate clauses (14a-b) were volunteered instead.
13. a. *Fòñ ${ }^{258}$ bè kro láa-n.

Tim MOD knife sharpen-IMPF
consultant comment: This isn't a complete sentence by itself.
b. * À bè be-nèn.

3SG MOD come-STAT
14
$\begin{array}{lllllllll}\text { a. } & \text { Ń } & \text { ni } & \text { à } & \text { ymón } & \text { ín, } & \text { à } & \text { bè } & \text { k } \varepsilon \varepsilon 1 \text { n.n. }\end{array}$ 1SG FIN 3SG come.PRFV PST 3SG MOD walk-IMPF I saw you while you were walking. French: Je t'avais vu pendant que tu marches. (C)
context: You were walking yesterday and I saw you at that time.
b. Ń ni à ymón, à bè li-nèn.

1SG FIN 3SG see.PRFV 3SG MOD go.out-STAT
I found that he had gone out.
French: J'ai trouvé qu'il est sorti. (C)
context: You didn't see him going out.
One of the key puzzles of this chapter is the semantic contribution of bè, since it appears to do such different things depending on whether it occurs with prospective aspect, another verb form, or a non-verbal predicate. I discuss this further in 7.4.2.

### 7.1.3 Pre-Predicate ri Is Finiteness

The particle $r i$ in the higher pre-predicate position is not restricted to the priority future (with the prospective aspect 1 suffix $-a$ ). The examples in (15a-e) are repeated from above. They show that

[^164]$r i$ can occur with all the aspectual suffixes except the prospective aspect $2-b \hat{\varepsilon}(15 f)$. It is also incompatible with a bare verb ( 15 g ).
15.

a. $\begin{array}{lll}\text { A } & \text { ri byè. }\end{array}$ 3SG FIN come.PRFV S/he came.
b. À ri blaà-n.
3SG FIN come-IMPF She is coming.
c. $\grave{\mathrm{A}}$ ri bè-è.
3SG FIN come-CMPL S/he has already come.
d. $\grave{\mathrm{A}} \quad \mathbf{r i} \quad \mathrm{b} \varepsilon$-nèn. 3SG FIN come-Stat S/he [has come]/[is here].
e. $\grave{\mathrm{A}} \quad \mathbf{r i} \quad \mathrm{b} \varepsilon-\mathrm{a}$. 3SG FIN come-PRSP1 She will come.
French: Il va venir. (C)
f. $\quad$ À $\mathbf{r i} \quad b \varepsilon-b \hat{\varepsilon}$. 3SG FIN come-PRSP1
$\begin{array}{llll}\text { g. } & * & \text { À } & \text { ri } \\ & \text { 3SG } & \text { FIN } & \text { b } \varepsilon . \\ \text { come }\end{array}$

However, the problem with (15f) is not so much the presence of $r i$ but the absence of bè. We know that $r i$ and bè can co-occur (as shown in (5a)), but that utterances with bè do not generally contain ri. It is not that the suffix -bê is incompatible with ri, but that it is ungrammatical without bè. The reason for this is still unknown.

In casual speech, the particle $r i$ is frequently dropped, as in (16a). The utterances without $r i$, such as (16a) have the same meaning as the utterances with ri, such as (16b).
16. a. À bisháayn=î kùr.

DEF1 child=DEF2 gain.weight.PRFV
The child gained weight.
b. À bisháayn=î ri kùr. DEF1 child=DEF2 FIN gain.weight.PRFV The child gained weight.

It is not clear what, if anything, $r i$ contributes to the meaning of these clauses. However, $r i$ is restricted to finite clauses, such as (15a-e), and it can not occur with a bare verb, as shown in $(15 \mathrm{~g})$. Therefore, I assume for now that $r i$ is simply a marker of finiteness. Verifying this is a task for future research.

In this section, I have shown how Siamou's three future expressions are structured. They each use two of three possible syntactic positions. I am quite sure that the suffix position is aspect, and I tentatively claim that the lower particle position is modality and the higher particle position is finiteness. In the next section I explore the literature on tense, aspect and modality of future expressions.

### 7.2. The Connection between Futurity, Modality, and Aspect

Studies of temporal reference often include not only tense and aspect, but also modality, since modality interacts with tense and aspect in complex ways. Languages themselves often mingle these concepts, having morphemes that fuse temporal and modal semantics (Zagona 2012). Modality is that part of language which allows us to talk about and evaluate situations or events that might not be real (Portner 2009). It concerns ideas such as necessity and possibility as well as ability, disposition, obligation, and more (Kratzer 1991, Portner 2009). Of special interest here is the interaction of modality with future expressions. Future expressions are about situations that have not yet occurred, and are therefore in a sense not real (cf. Tonhauser, 2011). Therefore, the fact that languages often tangle up futurity with modality is not at all surprising. Over the next few pages, I first introduce the tense and aspect ingredients that are relevant in the study of futurity: namely, future tense and prospective aspect (7.2.1). Then I introduce the main concepts in standard modality theory, relying heavily on Kratzer (1991) and Portner (2009) (7.2.2-7.2.4). Finally, I explore a number of ways that future expressions have been analyzed in various languages (7.2.5).

### 7.2.1 How to Talk about Future Events: Future Tense or Prospective Aspect

In the tense and aspect framework introduced in chapter 4, tense is defined as the relation between speech time and reference time, while aspect is the relation between reference time and
event time. Future tense situates the reference time after the speech time (17a), and prospective aspect situates the event time after the reference time (7b) (Klein 1994).
17. a. future tense

b. prospective aspect


Let us assume just for the purpose of this discussion that the event time coincides with the reference time in (17a), and the speech time coincides with the reference time in (17b). (See Reichenbach 1947.) This means that a future tense (with perfective or imperfective aspect) would have the temporal schema of (18a), while a (present) prospective aspect would have the temporal schema of (18b).
18. a. future tense

b. prospective aspect


Looking at (18), we can see that both future tense and prospective aspect are used to talk about events that occur after the speech time, in other words, future events. ${ }^{259}$ However, the relation between speech time and event time is not defined in Klein's (1994) framework. This relation is always mediated by the reference time. Therefore, although intuitively future tense and prospective aspect have something in common, formally they are distinct.

[^165]It is not easy to differentiate between future tense and prospective aspect because both of them refer to future events. In 7.3.3, I look at one test that might be useful to differentiate them.

Besides future tense and prospective aspect, another way to talk about future events is with modals.

### 7.2.2 The Ingredients of Modality

In formal semantic terms, modals are quantifiers over possible worlds (Lewis 1968, 1973, Kratzer 1991, Copley 2009). There are three dimensions that make up the meaning of a modal: the modal base, the ordering source, and the modal force (Kratzer 1991). I discuss each of these in turn. However, before defining these terms, I need to define a few other terms.

A possible world is "the complete way a universe could be throughout its history" (Portner 2009:21). There are infinitely many possible worlds. A possible world may be almost identical to another possible world with only one tiny degree of difference, or it may be completely different. A set of possible worlds is written as W , while a variable over possible worlds is written as w .

A proposition, $p$, is what is expressed by an utterance of a sentence. It is equated with a set of possible worlds W (Kratzer 1991:640). The worlds included in p (the set of worlds defined by the proposition) are those worlds in which p is true. For example, the proposition "Grass is green." is equal to the set of all worlds in which grass is green.

A conversational background is a function that maps possible worlds to sets of propositions (which are sets of sets of possible worlds) (von Fintel and Heim 2011, Kratzer 2012). It acts as a relation between worlds, mapping one world (w) or worlds onto other worlds. It may map a world that has a certain set of laws to the set of propositions that express those laws, and therefore to sets of worlds in which those laws are obeyed, or it may map a world in which someone (the speaker, or the "judge" for example (Lasersohn 2007, Stephenson 2007)) knows a certain set of facts to the set of propositions that list all those known facts, and therefore to all the worlds in which those facts are true.

### 7.2.2.1 The Modal Base

There are two types of conversational backgrounds: modal bases, and ordering sources. The modal base determines or picks out the set of accessible worlds (see von Fintel and Heim (2011:42) for details). When we talk about possible worlds, we do not need to consider all the
possible worlds, but only a relevant subset. For example, if I say "Little Johnny must have taken a cookie", I am only interested in the facts that lead me to think that Johnny took a cookie (e.g. There used to be twelve cookies on the table. Now there are only eleven. Johnny was the only one in the kitchen for the last ten minutes. He has crumbs on his fingers. He's looking away awkwardly and trying to act like there's nothing in his mouth.). I am not interested in every fact that exists (e.g. Our house has three bedrooms. The earth orbits the sun. C.S. Lewis wrote the Chronicles of Narnia, etc.). The modal base will pick out all the worlds in which all the relevant facts are true. If it is the case that in all of those worlds, little Johnny took a cookie, then I can conclude that he must have taken a cookie.

### 7.2.2.2 The Ordering Source

The second type of conversational background, the ordering source, ranks a relevant set of accessible worlds picked out by the modal base, according to certain criteria (Kratzer 1991: 645646). ${ }^{260}$ A modal may have only a modal base, only an ordering source, or both a modal base and an ordering source. ${ }^{261}$ An ordering source is required to account for inconsistencies. To give an example of how this works, consider the utterance in (19).
19. I should work on my dissertation.

In this case, the modal base contains propositions that have to do with real-world facts: for example, I am a graduate student. Graduate students write dissertations in order to graduate. Finishing a dissertation requires working on it. These facts are all consistent with each other. The ordering source in this case consists of the set of propositions expressed by the phrase what I want. I have two relevant desires: I want to finish my dissertation, but I also want to never work on it. The propositions in the modal base (the facts about the world) are not inconsistent with each other. Nor are my desires inconsistent with each other. It is only when we try to combine the worlds picked out by the modal base (i.e. the factual worlds) with the worlds picked out by the ordering source (i.e. the worlds in which I get what I want) that we encounter inconsistencies. Unfortunately, there are no worlds in which I can have everything I want because the world is

[^166]such that in order to finish my dissertation, I have to work on it. The ordering source determines which of the worlds in the modal base best match my desires. By combining the worlds accessible from the modal base and the worlds accessible from the ordering source, we end up with two types of worlds: worlds in which I never work on my dissertation and never finish it, and worlds in which I work on my dissertation and finish it. My desire to finish my dissertation outweighs my desire to never work on it. Therefore I can truthfully utter (19). The ordering source discussed here (having to do with desires) is called a bouletic ordering source. See Kratzer (1991) for more examples of ordering sources.

### 7.2.2.3 The Modal Force

The third dimension of a modal is the modal force which is the relative strength of a modal. It has to do with whether a modal is a universal or existential quantifier over possible worlds. Modal force ranges from strong necessity (something has to be the case) to weak possibility (something might be the case). Strong necessity is a universal quantifier and weak possibility is an existential quantifier. For example, compare the two utterances in (20).
20. a. You must go to bed.
b. You may go to bed.

The modal must in (20a) is a universal quantifier over possible worlds. This means that for all the worlds in the modal base, you go to bed. The modal may in (20b) is an existential quantifier over possible worlds. This means that there exists at least one world in the modal base in which you go to bed. ${ }^{262}$

### 7.2.3 Types of Modality

There is some variation in the literature as to how modals are classified. In the following discussion I contrast Kratzer's $(1991,2012)$ classification with Portner's (2009) classification.

### 7.2.3.1 Kratzer's (1991) Classification of Modality

Kratzer (1991) names two types of modals: epistemic and root. Epistemic modals have epistemic modal bases and root modals have circumstantial modal bases. For this reason root modals are also sometimes called circumstantial modals. An epistemic modal base is the set of propositions

[^167]that a given individual knows to be true in a given world. A circumstantial modal base is a set of propositions about the way the world is, but does not necessarily include all the facts. Contrast the examples in (21), adapted from Kratzer (1991). The first is a circumstantial modal and the second is an epistemic modal.

## 21. a. Blueberries can grow here.

b. There might be blueberries growing here.

I can truthfully utter (21a) even if there are in fact no blueberries growing here. That is because the relevant facts are whether the climate, soil and other conditions are such that they would allow blueberries to grow here. In the modal base, i.e. the set of possible worlds that include all the worlds where these conditions match the actual ones, there are some worlds in which blueberries are growing here. Therefore it is possible for blueberries to grow here. Someone else could disagree with me and say, "That's not true-the soil is too alkaline. Blueberries can't grow here." What he is saying is that the worlds in the modal base are more restricted than I first realized. All the worlds in which the alkalinity of the soil does not match the actual soil alkalinity have to be excluded, although I had not originally taken that into consideration. In this more restricted set of worlds, unfortunately, there are no worlds in which blueberries are growing here.

The utterance in (21b) takes into account not just the known facts about the climate and soil, but also the actual existence of blueberries here. If I know there are no blueberries, I cannot utter (21b), even if I know that it is possible for them to grow here. In this case the set of worlds in the modal base (according to what I know at the time) includes only worlds that match the actual climate and soil conditions and also the facts about the existence of blueberries. I obviously do not know all the facts when I utter (21b). If I did, I would simply say "There are blueberries growing here" or "There aren't blueberries growing here". According to what I know, the modal base includes some worlds in which blueberries are growing and some in which they are not. In order for someone to prove me wrong in this case, he has to show that none of the worlds in the modal base is a world in which blueberries are growing here. He would do this by adding to the list of facts about the world, determining, for example, that there are no blueberries along that edge of the trees, or in that open sunny area, or in the tall grass. In fact, there are no
worlds that are compatible with our knowledge in which blueberries are growing here. Depending on the size of the plot of land we are referring to, this could be an arduous task.

Epistemic modals in Kratzer's model may have an empty ordering source (no ordering at all), a doxastic ordering source (having to do with what the speaker or someone else believes), or a stereotypical ordering source (having to do with what is considered normal or natural in the world). The ordering source for root (or circumstantial) modals can be bouletic (ordered according to what I want), deontic (ordered according to what a certain set of rules prescribes), teleological (ordered according to what someone's goals are), dynamic (ordered according to what someone is able to do), stereotypical or empty (no ordering at all). ${ }^{263}$

### 7.2.3.2 Portner's (2009) Classification of Modality

Portner, on the other hand, groups modals into three categories: epistemic, priority, and dynamic. Epistemic modals in Portner's classification are similar to those in Kratzer (1991), and priority and dynamic modals together make up Kratzer's (1991) circumstantial modals. Priority modals include deontic, bouletic, and teleological modals. Dynamic modals include volitional and quantificational modals (of which I only look at volitional). Volitional modals include ability, opportunity, and dispositional modals.

Of special interest in this chapter is the category of priority modals. The three kinds of priority modals (deontic, bouletic, and teleological) ${ }^{264}$ are unified by the idea that "such things as rules, desires and goals all serve to identify some possibility as better than or as having higher priority than others" (Portner 2009:135). Deontic modality concerns things like morality, ethics and laws (22a). Bouletic modality is about desires (22b), and teleological modality has to do with goals (22c).
22. (from Portner (2009:185))
a. We must pay the real estate tax.
b. Mary should try this new restaurant.
c. John can take the subway.
deontic
bouletic
teleological

[^168]In traditional frameworks, the term deontic is used to describe this whole category, but I use Portner's classification with priority being the more general term, and deontic a sub-type of priority modality.

### 7.2.4 Variation in the Specification of Modality

In languages, modals are often not completely specified for each modal component (the modal base, ordering source, and modal force).

### 7.2.4.1 Underspecifiying the Modal Base and the Ordering Source: English

In English, for example, modals have a lexically determined modal force, but their modal base and ordering source are partially based on context (Kratzer 1981, 1991). Thus can in (23) might have deontic modality, as in (23a) (giving permission) or dynamic modality, as in (23b) (indicating ability).
23. a. He can eat now. He's finished his chores.
b. He can eat now. They've taken the tubes out of his throat.

### 7.2.4.2 Underspecifiying the Modal Force: St'át'imcets

In contrast, Rullmann et al. (2008) show that in St'at'imcets it is the type of modal base and ordering source that are lexically determined (i.e. whether it is epistemic, deontic, etc.) while the modal force varies based on context. The St'át'imcets utterance in (24) only has an epistemic modal base, but it can have strong or weak modal force.

```
24. 265 Wa7 k'a qwenúxw.
    IMPF INFER sick
He must be sick./I guess that he's sick.
```


### 7.2.5 The Formal Status of "Future Modality"

So far we have been talking about modals without regard to temporality, but in reality the two are rarely parted. In this chapter I am especially interested in the interaction of futurity and modality. In many analyses, temporal semantics are included with the basic meaning of the modal (as observed by Matthewson (2012) regarding Enç 1996, Condoravdi 2002, Butler 2006, Hacquard 2006, Arregui 2007, Abusch 2007, Demirdache and Uribe-Extebarria 2008, Kaufmann

[^169]2011, van de Vate 2011, among others). This means that it is possible for a modal to have a future orientation, and thus resemble a future tense or prospective aspect, even when it is not. In the following sections, I look at how future expressions have been analyzed in other languages.

### 7.2.5.1 When "Future Modality" Is a Kind of Modality: Enç 1996

Enç (1996) argues that the English future will is not a tense, but a modal. She uses a number of diagnostics to prove this. First of all, will is not always used to refer to future events. It can denote non-future epistemic necessity, as in (25a). The person who utters (25a) expects that Pat is sleeping at the present time, not that he will go to sleep at some time in the future. Will can also be used to refer to general properties, as in (25b), which do not have a future interpretation either.
25. a. Pat will be sleeping now. (from Enç 1996:348)
b. Oil will float on water. (Sarkar 1998:5, originally from Haegeman 1983)

Secondly, Enç (1996) argues that having future time reference is not enough for something to be called future tense because many expressions that are clearly not future tense have future time reference, as the example in (26) shows. The winning of the race is understood to be at some point in the future, but there is no future tense in this utterance.
26. I expect to win this race. (from Enç 1996:349)

Thirdly, will does not pattern with the English past tense when it comes to sequence of tense effects. A stative past tense sentence embedded under a past tense matrix clause is ambiguous. The embedded clause can either be interpreted as taking place in the past relative to the utterance time, or relative to the time of the matrix clause. For example, (27) can mean either that Mary was tired at the time she said she was tired (simultaneous reading), or that she was tired before that point (shifted reading).
27. Mary said that she was tired. (from Enç 1996:350)
$=$ Mary was tired at the time she said she was tired. (simultaneous reading)
$=$ Mary was tired before she said she was tired. (shifted reading)
The simultaneous reading is an instance of the sequence of tense phenomenon. Instead of being evaluated with respect to the matrix clause (the time of Mary's saying), the embedded clause is evaluated as being in the past with respect to the speech time.

The future does not display this ambiguity. In (28), the only possible reading is the shifted one, where Mary is tired at some point after she says she will be.
28. Mary will say that she will be tired. (from Enç 1996:350)
$\neq$ Mary will be tired at the time she says that she will be tired.
(simultaneous reading)
$=$ Mary will be tired at some point after she says she will be tired. (shifted reading)
Past and future also behave differently when a present tense sentence is embedded under them. Mary must still be upset at the time (29a) is uttered, not just when John said so. However, (29b) is true either if Mary is upset when (29b) is uttered, or in the future at the time when John says so.
29. a. John said that Mary is upset. $=$ Mary is upset at the utterance time.
$\neq$ Mary is upset at the time that John said so, but not at the utterance time.
b. John will say that Mary is upset.
$=$ Mary is upset at the utterance time.
$=$ Mary is upset at the time John says she is upset.
Morpho-syntactically, will patterns with modals in English. The examples in (30) show that will occurs in the same position as other English modals. This has been observed by a number of authors. (See Palmer (1979) and Sarkar (1998), among others.) ${ }^{266}$
30. a. He will come.
b. He must come.
c. He can come.
d. He may come.
e. He should come.

The above observations all support analyzing English will as a modal. These tests are also useful for diagnosing modality in languages closely related to English. For example, in Toews (2009b) I show that Mennonite Low German has a future auxiliary, voo, that is very similar to English will. For example, it does not have to have a future time reference. In (31a), voa is used to refer to a present state, and in (31b) it refers to a general property of water (see Sarkar (1998), Haegeman (1983)).

[^170]31.

| a. | dot $\quad$ voə-t | g.ama | zan-ə. |
| :--- | :--- | :--- | :--- |
| that will-3SG | grandma | be-INF |  |
|  | That will be Grandma. |  |  |

context: You've invited Grandma for supper. The doorbell rings. consultant comments: You don't see her yet, but you expect it to be her.
b. $\quad$ jјə voə-t $\quad$ мp(ən) votə $\int$ vamə.
oil will-3SG upon water swim
Oil will float on water.

However, these kinds of tests do not work to diagnose modality in all languages, as I discuss in the next section.

### 7.2.5.2 When "Future Modality" Fuses Modality and Aspect: Tonhauser 2011

Tonhauser (2011) analyzes the suffix -ta (32) in Paraguayan Guaraní as encoding both prospective aspect and either epistemic (prediction/expectation) or root (intention) modality.

## 32. A-purahéi-ta.

A1SG-sing-FUT
I will sing. (from Tonhauser 2011:208)
The suffix - $t a$ always has future time reference (except when it occurs with past tense marking, as shown below). ${ }^{267}$ It is incompatible with past adverbials, as example (33) shows.

```
33. \# Kuehe a-purahéi-ta. (from Tonhauser 2011:212) yesterday A1-sing-FUT
```

Tonhauser (2011) asserts that there are no examples in her database in which -ta does not have a future time reference. This is in contrast to English will which may have present time reference, as seen in (25) above. ${ }^{268}$

In Paraguayan Guaraní, utterances with -ta do not entail events are realized. The story in which (34) is uttered goes on to reveal that the monkey does not actually bite the addressee. In (35), it turns out that the daughter never actually arrives at school. ${ }^{269}$

[^171]34. Context: A monkey's hands and legs are stuck and it threatens to use its teeth to defend itself.

| Roi-su'ú-ta, | roi-su'ú-ta. |
| :--- | :--- |
| 12SG-bite-FUT | 12SG-bite-FUT |
| I will bite you, I will bite you. (from Tonhauser 2011:213) |  |

35. Context: "They called me to tell me not to worry about my daughter..."
.. .porque o-ĝ uahé-ta tarde-ve i-compañéra-kuéra-gui.
...because A3-arrive-FUT late-more B3-school.friend-PL-ABL
. . .because she would arrive later than her school friends. (from Tonhauser 2011:217)
Tonhauser (2011) argues that $-t a$ can not be future tense because it is felicitous in past tense contexts (36).

| 36. | Upépeve <br> there | o-guerú-ta | chupe | la |
| :--- | :--- | :--- | :--- | :--- | i-profesor.

Her teacher would/was going to bring her there. (from Tonhauser 2011:217)
Context: The mother received a call from the school that her daughter had had an accident at school and was now at the hospital. The teacher told her to come to a particular road crossing.

Since future tense is defined as reference time following speech time, an utterance describing a situation in which the reference time precedes the speech time (i.e. past tense) can not be future tense. Past tense is not incompatible with prospective aspect, which requires the event time to follow the reference time. Therefore, $-t a$ must be a prospective aspect morpheme. ${ }^{270}$

As I show in 7.3, Siamou futures share many properties with Paraguayan Guaraní. They have obligatory "future" interpretation (by which I mean that event time follows the speech time, which is not a formally defined relation), except when they occur with past tense morphology.

[^172]They may be felicitous even if the speaker does not expect the event to occur, and they are compatible with a past reference time.

### 7.2.5.3 When "Future Modality" Combines Modality and Aspect: Matthewson 2012

Matthewson (2012) explores the possibility that future-oriented modals get their future interpretation by co-occurring with prospective aspect. Depending on the language, the prospective aspect may be optional or obligatory, and overt or covert. She shows that while it may be true that cross-linguistically, circumstantial modals have a tendency to be future oriented, this is not a requirement. She shows that in Gitksan the future orientation of a circumstantial modal is required to be overtly spelled out as a separate morpheme, and that in Blackfoot there are circumstantial modals that are not future oriented, as evidenced by the obligatory presence of actuality entailments. Both these things should not occur if circumstantial modals are indeed inherently future oriented. This is relevant to my analysis of Siamou because Siamou also uses a combination of two morphemes to form a future expression: one morpheme encoding prospective aspect, and one encoding modality.

### 7.2.5.4 When "Future Modality" Contrasts Aspectual and Non-Aspectual Modals: Copley 2009

Another influential work that explores the interaction of modality with future time reference is that of Copley (2009). She makes an interesting observation about the two main future expressions in English, will and be going to. Will can be used to make an offer (37a), while be going to cannot (37b). Copley's definition of an offer is given in (38).
37. context: a roadside advertisement (from Copley 2009:77)
a. We'll change your oil in Madera.
b. \# We're going to change your oil in Madera.
38. For an utterance to count as an act of offering, the speaker's carrying out of the offered eventuality has to be contingent on the interlocutor's preferences. (Copley 2009:78)

This means that the speaker of (37a) is saying he will do something if the other person wants him to, but not otherwise.

In Copley's (2009) analysis, both will and be going to are modal, but they differ in aspect, and it is the aspectual difference that derives that offer contrast. The bare future will has no aspect marking while be going to has progressive aspect (usually marked by -ing in English).

The way this works is illustrated in Figures 7.1 and 7.2 below. The straight line represents the history of the world up until the present time. The worlds branching off at a time $t$ are possible worlds. In both figures, what the other person wants is evaluated at $t$. In Figure 7.1, the meaning of will $q$ requires that all the worlds branching off at $t$ are worlds in which $q$ happens.


Figure 7.1 will (Copley 2009:82)
In Figure 7.2, however, the meaning of be going to $q$ requires that all the worlds branching off of $t^{\prime}$ are worlds in which $q$ happens. This is because of the progressive aspect of be going to. This means that $q$ happens not only in the worlds branching off from $t$, which are also worlds where the other person wants $q$ to happen, but $q$ also happens in worlds branching off from $t^{\prime}$, which means it includes worlds where I do $q$ whether the other person wants it or not. This, by definition, can not be an offer, and so be going to is not an acceptable way to form an offer.


Figure 7.2 be going to (Copley 2009:83)

English is not the only language to have a contrast between a future expression that can be used to make an offer and one that can not. Some other languages that have this contrast are Turkish, Indonesian (Copley 2009), Blackfoot (Reis Silva 2008), and St'át'imcets (Glougie 2008). These are shown in Table 7.2.

Table 7.2 Offer Contrast Cross-Linguistically

| Language | Offer | Non Offer | Source |
| :--- | :--- | :--- | :--- |
| English | will | be going to | Copley 2009 |
| Turkish | ar | acagim | Copley 2009 |
| Indonesian | akan | mau | Copley 2009 |
| Blackfoot | áak | ayáak | Reis Silva 2008 |
| St'át'imcets | kelh | cuz' $^{\prime}$ | Glougie 2008 |

However, not all these languages have been analyzed in the same way as Copley (2009) does for English, as having a bare future modal and progressive-like future modal. Reis Silva (2008) argues that the relevant contrast in Blackfoot is between a bare future modal and a modal that includes imperfective aspect (which allows for an analysis that is fairly similar to Copley's progressive aspect for English). As for St'át'imcets, Glougie (2008) has analyzed one of the future morphemes as a future modal, and the second one as a prospective aspect with no modality (Glougie 2008). The future modal can be used to make an offer, but the prospective
aspect can not. The modal is an operator, which allows it to generate a structure which includes an implicit if-clause, which is part of the definition of an offer. ${ }^{271}$ The second future is not a modal, so it can not generate the necessary if-clause. Thus, it appears that although the offer contrast exists in many languages, there is little agreement on how this contrast is derived. Table 7.3 summarizes these findings.

Table 7.3 Cross-Linguistic Comparison of Two Futures

| Language $^{272}$ | Modality |  |  | Aspect |
| :--- | :--- | :--- | :--- | :--- |
|  | Offer Future | Non-Offer Future | Offer Future | Non-Offer Future |
| English | modal | modal | bare | progressive |
| Blackfoot | modal | modal | bare | imperfective |
| St'át'imcets | modal | not modal | bare | prospective |

I show later that Siamou makes a somewhat similar contrast between futures that can be used to make offers and those that can not. The Siamou data is complicated by the fact that there are three future expressions, not two. None of the solutions given for these other languages can account for the Siamou data.

### 7.3 Diagnosing Futurity in Siamou

In this section I use some of the diagnostics described in 7.2.5 to analyze Siamou's future expressions. I argue first of all that all three futures are prospective aspect because they have obligatory "future" interpretation when they do not occur with past morphology (7.3.1) ${ }^{273}$ they do not combine with other aspects (7.3.2) and they combine with past tense (7.3.3). Then I argue that they are also all modal because they can refer to events that are not necessarily expected to occur (7.3.4). In 7.3.5 I show how Siamou patterns in the offering context introduced by Copley (2009), and I argue that none of the previous analyses work for the Siamou data. but I do not have a solution to this problem at this time. In 7.4, I take the analysis further by contrasting the two suffixes in 7.4.1 using the simple future bè. . .-a and the certain future bè. . .-bê. Then I contrast the two particles in 7.4.2 using the priority future ri. . .a and the simple future bè. . .-a.

[^173]
### 7.3.1 The Three Future Expressions Have Obligatory Future Interpretation

The first requirement for a prospective aspect is that it must have a "future" (i.e. E after S) interpretation (except when it occurs with past morphology). All three future expressions meet that requirement, as shown in (39).
39.
a. A
(ri) nun
gbe-a.
(priority future)
3SG FIN water drink-PRSP1
He [will]/[intends to]/[wants to] drink water.
French: Il boira de l'eau./Elle a l'intention de boire. (C)
b. $\begin{array}{llll}\text { À bè nun } & \text { gbs-a. } & \text { (simple future) }\end{array}$

3SG FIN water drink-PRSP1
He will drink water.
French: Il boira de l'eau. (C)
c. $\begin{array}{lllll}\text { À } & \text { bè nun } & \text { gbs-bêer. } & \text { (certain future) }\end{array}$

3SG FIN water drink-PRSP2
He is going to drink water.
French: Il va boire de l'eau. (C)
It is not possible to cancel the future interpretation of these future expressions. For example, combining them with a past adverbial (dir, 'yesterday') is ungrammatical (40). ${ }^{274}$
40.


The following examples show that the Siamou simple future does not pattern with future expressions like English will or Low German voa: The Siamou simple future is not compatible

[^174]with present tense readings. Example (41) cannot be uttered if Lillian is at the door, but only if she has not yet arrived. Examples (42a) and (43a) are not compatible with a reading in which they are referring to a general property. They have to refer to a future event. In order to express a general property, the imperfective is used (42b, 43b). Similar data is not currently available for the priority future or the certain future.
41. À bè tenn-a Ye-Kpènle.

3SG MOD be-PRSP1 Lillian
That will be Lillian.
consultant comment: If you say this, Lillian is not here yet.
42. a. À b' á nìr fún-a kwêl

3SG MOD LOG liver boil-PRSP1 dry/empty
He will get angry over nothing.
consultant comment: This can't be talking about someone's general character. It has to be talking about a future event.
$\begin{array}{lllllll}\text { b. } & \text { À } & \mathbf{r}^{\prime} & \text { á } & \text { nìr } & \text { fúu-n } & \text { kwêl } \\ & \text { 3SG } & \text { FIN } & \text { LOG } & \text { liver } & \text { boil-IMPF } & \text { dry/empty }\end{array}$
He gets angry over nothing.
context: Talking about someone's character.
43. a. Nyécl bè bân-a nun ta.
oil MOD float-PRSP1 water on
Oil will float on water.
consultant comment: If you put oil on the water, it will float; if you don't, it won't. This can't describe the properties of oil.
b. Nyécl báa-n nun ta.
oil float-IMPF water on
Oil floats on water.
context: This is a generalization. It doesn't necessarily mean there's oil floating on water right now.

The above examples show that Siamou's future expressions must have a future ( S before E) interpretation when they do not occur with past morphology. This means they can not be purely modal in the way that Enç (1996) argues for English will. They are similar to utterances in

Paraguayan Guaraní that contain the prospective aspect modal morpheme -ta because -ta also must always have a future interpretation.

I am arguing that Siamou's future expressions encode prospective aspect. Future meaning is required for prospective aspect, but it does not conclusively show that something is prospective aspect. The tests in the following two sections support the claim that these expressions involve prospective aspect to the exclusion of future tense.

### 7.3.2 The Three Future Expressions Do Not Combine with Other Aspects

The two prospective aspect suffixes are part of a paradigm of aspectual suffixes. As such, they are in complementary distribution with all other aspectual suffixes. Some examples showing that the suffixes $-a$ and $-b \hat{\varepsilon}$ can not co-occur with other aspects, such as stative -nèn and completive $\grave{e}$, are given in (44). ${ }^{275}$
44.

| b. | * À | $\mathrm{r}^{\prime}$ | à | gbe-nèn-a | STAT-PRSP1 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| c. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gbe-nèn-bè | STAT-PRSP2 |
| e. | * À | r' | à | gbe-è-a | CMPL-PRSP1 |
| f. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | a | gbe-è-bè | CMPL-PRSP2 |
| g. | * À | r' | à | gbe-a-nèn | PRSP1-STAT |
| h. | * À | r' | à | gbe-a-è | PRSP1-CMPL |
| j. | * À | r'/b' | à | gbe-a-bè | PRSP1-PRSP2 |
| k. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gbe-bè-nèn | PRSP2-STAT |
| 1. | * À | $\mathrm{r}^{\prime} / \mathrm{b}^{\prime}$ | à | gbe-bė-è | PRSP2-CMPL |
| m. | * À | r'/b' | à | gbe-bè-a | PRSP2-PRSP1 |
|  | 3SG | FIN/MOD | 3SG | drink-SUF1-SUF2 |  |

The fact that the suffexes $-a$ and $-b \hat{\varepsilon}$ are part of a paradigm of aspectual suffixes is strong morpho-syntactic evidence that they encode prospective aspect, not future tense. However, the fact that these aspectual suffixes do not combine with each other neither strengthens nor weakens the argument that they are all aspectual because in many languages it is quite possible for different aspects to combine with each other. For example, English allows perfect and progressive aspect to stack freely (45).
45. I have be-en wait-ing for you all my life.

[^175]
### 7.3.3 The Three Future Expressions Are Compatible with Past Tense

The future expressions do not combine with other aspects. However, they combine freely with past tense. This is predicted if these expressions encode prospective aspect, but not if they encode future tense.

Future tense is expected to be incompatible with past tense because the reference time can not both precede and follow the speech time simultaneously. Future tense and past tense have opposite configurations (46a-b). A prospective aspect, however, should be compatible with past tense, since the definition of prospective aspect (event time follows reference time) is not incompatible with the definition of past tense (reference time precedes speech time) (46c).
46. a. Future Tense: S R
b. Past Tense: $\quad$ S
c. Past Prospective: $\quad$ R $\quad \mathrm{S}$ E $\begin{array}{llllll}\text { (or } & \mathrm{R} & \mathrm{E} & \mathrm{S})\end{array}$

Therefore, to show that an expression is not future tense, it must be shown that it is compatible in a context where the reference time precedes the speech time (Matthewson 2012, Tonhauser 2011). ${ }^{276}$

All three Siamou future expressions can combine with past tense morphology. In Siamou, the sentence final particle in marks past tense. (See chapter 6.) When combined with these future expressions, the result is a past prospective (with a counterfactual implicature, as I show in chapter 6) (47). The morpheme in specifies that R precedes S (past tense) and the future construction specifies that E follows R (prospective aspect).

| a. | À | r' | à | kpàr=î |
| :---: | :---: | :---: | :---: | :---: |
|  | 3 S | FIN |  | $\mathrm{mat}=\mathrm{DEF} 2$ |
|  | S/he was going to fold the m |  |  |  | French: Il allait plié la natte. (C)

[^176]$\begin{array}{lllllll}\text { b. } & \text { À } & \text { b' } & \text { à } & \text { kpàr=̂ } & \text { blíin-a } & \text { ín. } \\ & \text { 3SG } & \text { MOD } & \text { DEF1 } & \text { mat=DEF2 } & \text { fold-PRSP1 } & \text { PST }\end{array}$ S/he [was going to fold]/[would have folded] the mat.
consultant comment: If you say this, the person will think he didn't fold the mat.
$\begin{array}{lllllll}\text { c. } & \text { À } & \text { b' } & \text { à } & \text { kpàr=i } & \text { blíin-b } \hat{\boldsymbol{\varepsilon}} & \text { ín. } \\ & \text { 3SG } & \text { MOD } & \text { DEF1 } & \text { mat=DEF2 } & \text { fold-PRSP2 } & \text { PST }\end{array}$ S/he [was going to fold]/[would have folded] the mat.

According to our definitions of future tense and prospective aspect, the data in (47) shows that these are not future tense, but prospective aspect.

### 7.3.4 The Three Future Expressions Can Refer to Events That Are Not Expected to

 HappenThe previous three diagnostics support my claim that Siamou's three future expressions encode prospective aspect. In this and the next section I show that in addition to expressing prospective aspect, these future expressions are also all modal. To prove that they are modal, I show that in certain contexts, a speaker can utter a future expression even if he is quite sure that the event he is referring to will not actually occur (48). If the future expressions in Siamou were purely temporal, this would not be possible. This is because modality allows for branching futures in which more than one outcome is possible-some in which the event occurs, and some in which it does not. A future that is purely temporal (which likely does not exist) would only have one possible outcome. Example (48c) is particularly interesting because the affirmative of the certain future is followed by the negation of the simple future with no contradiction.
48.

| a. | Ń | ni | kpêyl-a | kè | ń | ni | kpêyl hìn | bo. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1SG | FIN | cough-PRSP1 | but | 1SG | FIN | cough be.able.to | NEG |  |
|  | I want to cough, but I can't. |  |  |  |  |  |  |  |

$\begin{array}{llllllllll}\text { b. } & \text { À } & \text { bè } & \text { kpàr } & \text { búr-a } & \text { k } \grave{c} & \text { kpàr } & \text { ri } & \text { tènn-nèn } & \text { bo. } \\ & \text { 3SG } & \text { MOD } & \text { mat } & \text { put-PRSP1 } & \text { but } & \text { mat } & \text { FIN } & \text { be-CMPL } & \text { NEG }\end{array}$ He will spread a mat, but there isn't a mat.
$\begin{array}{llllllll}\text { c. } & \text { A } & \text { bè } & \text { dú-bè } & \text { fóro } & \text { à } & \text { káal=̂ } & \text { ninatye } \\ & \text { 3SG } & \text { MOD } & \text { climb-PRSP2 } & \text { till } & \text { DEF1 } & \text { hill=DEF2 } & \text { top }\end{array}$
kè à bè dú-a bo.
but 3SG MOD climb-PRSP1 NEG
He will climb to the top of the hill, but he won't climb.
consultant comment: You're talking about what he wants, but you're not going to allow it. Maybe the hill belongs to you and he has to get permission from you first. I know he won't do it because I will prevent him.

In fact, given the right context, it is possible to both affirm and negate the same clause in the same utterance without contradiction, as in (49). ${ }^{277}$
49. À bè dú-a fóro à káal=î jinatyé,

3SG MOD climb-PRSP2 till DEF1 hill=DEF2 top
kè à bè dú-a bo.
but 3SG MOD climb-PRSP1 NEG
He will climb to the top of the hill, but he won't climb
French: 11 montera sur la colline jusqu'au sommet, mais il montera pas. (C)
The fact that this kind of utterance is acceptable suggests that the modality of this future expression is neutral with respect to the modal base and/or ordering source (Kratzer 1991). This means that the type of modal base and/or ordering source is not specified but can be determined from context. Compare this to the English example in (50).
50. Now that he can eat, he can't eat.
context: Jim was supposed to fast for 48 hours before undergoing a medical test. After the test, he is permitted to eat again, but because his stomach is unused to eating, he finds that food makes him nauseous and he can't get anything down.

In the first part of the utterance, can has a deontic modal base: according to his doctor, he can eat. In the second part of the utterance, can has a circumstantial modal base: according to his current situation and the state of his stomach, he cannot eat.

Observe, however, that although this data supports the argument that these future expressions are modal, this is not to say that all modal future expressions are expected to pattern

[^177]in the same way. English will is clearly modal, as argued by Enç (1996), among others. However, will is not acceptable in these kinds of contexts (51).
51. a. * I will cough, but I can't.
b. * He will spread a mat, but there is no mat.
c. $\quad$ He will climb to the top of the mountain, but he won't.

So far I have argued that all three futures encode prospective aspect and modality.
However, I have not gone into detail about what kind of modality they express. I have also not shown how the three future expressions differ from each other. This last part is addressed in the next section, in which I explore the offering context from Copley (2009).

### 7.3.5 The Three Future Expressions Have Different Interpretations in an Offering Context

In languages with two future expressions, it is common for one to be compatible with an offering interpretation, and not the other. Siamou, however, has three future expressions, and each expression has a different interpretation in an offering context (Toews 2010).

The examples in (52) all have to do with planning a party. All three futures may be uttered in such a context, but they all have different interpretations. The priority future (52a) expresses willingness to prepare the meat, but it gives the feeling that the person feels like they should-either it is a response to someone asking them directly, or the person feels obligated in some other way. (It does not, however, give the feeling that the person does not want to do it and is only agreeing under duress. They are willing.) The simple future utterance in (52b) is a classic offer, like the will future in English, and the utterance in (52c) is a statement of what the person has already decided to do, like the be going to in English.

## 52. a. Reluctant Offer

context: A group of people is planning a party. Everyone will have a job to do. I'm not necessarily very interested in preparing the meat, but I agree to do it.

Ń (n') à $\mathrm{ky} \varepsilon=\hat{\varepsilon}$ táan-a.
1SG FIN DEF1 meat=DEF2 cook-PRSP1
Ok, I'll cook the meat.

## b. Regular Offer

context: A group of people is planning a party. Everyone will have a job to do. I volunteer to prepare the meat.

Ń $\mathbf{b}^{\prime}$ à $\mathrm{ky} \varepsilon=\hat{\varepsilon} \quad$ táan- $\mathbf{a}$.
1SG MOD DEF1 meat=DEF2 cook-PRSP1
I'll cook the meat.
c. Pushy Offer
context: A group of people is planning a party. Everyone will have a job to do. I decide that I'm going to prepare the meat, and I inform the group of my decision. inappropriate context: A group of people is planning a party. Everyone will have a job to do. I volunteer to prepare the meat.

| Ń | $\mathbf{b}^{\prime}$ | à | ky $\varepsilon=\hat{\varepsilon}$ | táan-b $\hat{\mathbf{\varepsilon}}$. |
| :--- | :--- | :--- | :--- | :--- |
| 1SG | MOD | DEF1 | meat=DEF2 | cook-PRSP2 | I'm going to cook the meat.

None of the previous analyses used to explain this kind of data are viable for Siamou. I can not say that the certain future has progressive aspect, as Copley (2009) argued for English, or imperfective aspect, as Reis Silva (2008) argued for Blackfoot, since Siamou expresses progressive and imperfective aspect differently. Nor can I use Glougie's (2008) analysis for St'át'imcets in which the offer future is a modal and the non-offer future is a non-modal prospective aspect, because I argued above that all three Siamou future expressions are both modal and prospective.

The analysis for Siamou's future expressions must eventually explain the different readings in (52). So far, all we know about them is that they are all prospective aspect, and they are all modal. In the next section, I attempt to decompose these expressions and come to a better understanding of the differences in meaning between them.

### 7.4 Decomposing Futurity in Siamou

In semantics, the meaning of an utterance is made up of the meaning of its parts and the way they are syntactically combined (Partee 1994). In this section I present some information on the meaning of the parts that combine to form the future expressions: $-a,-b \hat{\varepsilon}, b e ̀$, and $r i$. I showed above that $-a$ and $-b \hat{\varepsilon}$ can be analyzed as prospective aspect, that $b e ̀$ is likely a modal particle, and that $r i$ is a particle that marks finiteness. This section takes it one step further. In 7.4.1 I look at
the two prospective aspect suffixes and how they differ in meaning. I do this by comparing the simple future (bè. . .-a) with the certain future (bè. . .-bê), since they form a minimal pair. In 7.4.2 I discuss be and what type of modality it might encode. I do this by comparing the priority future ( $r i$. . . $-a$ ) with the simple future ( $b \grave{e}$. . . $-a$ ), since they also form a minimal pair. I claim that the obligation/desire reading of the priority future is not from ri but from the absence of bè This whole section is very preliminary and speculative.

### 7.4.1 The Two Suffixes Are Two Different Prospective Aspects

I have shown above that the three future expressions all encode prospective aspect. I have also shown that the suffixes are the locus of prospective aspect, not the particles. I gave two kinds of evidence for this. First, they occur in aspect position. Second, they only occur in utterances that have a future interpretation, unlike the particles $r i$ and $b e ̀$ which may occur with other aspectual suffixes and do not always have a future interpretation.

In this section, I present some examples showing how the simple future bè. . .-a differs from the certain future $b \grave{e}$. . -b $b \hat{\varepsilon}$. Then I argue that difference between the suffixes has to do with a contrast between a near prospective aspect (-b $\hat{\varepsilon}$ ) and a distant (or perhaps just neutral) prospective aspect suffix $(-a)$.

The first context in which we can clearly distinguish the simple future from the certain future is in the context of planning a party, as shown in (52b-c), repeated below. In that case, the simple future bè. . .-a is interpreted as an offer and the certain future bè. . .-bê is interpreted as a "pushy offer," which Copley (2009) would argue is no offer at all.

## 52. b. Regular Offer

context: A group of people is planning a party. Everyone will have a job to do. I volunteer to prepare the meat.

Ń $\mathbf{b}^{\prime}$ à $\mathrm{ky} \varepsilon=\hat{\varepsilon} \quad$ táan- $\mathbf{a}$.
1SG MOD DEF1 meat=DEF2 cook-PRSP1
I'll cook the meat.

## c. Pushy Offer

context: A group of people is planning a party. Everyone will have a job to do. I decide that I'm going to prepare the meat, and I inform the group of my decision. inappropriate context: A group of people is planning a party. Everyone will have a job to do. I volunteer to prepare the meat.

| Ń | $\mathbf{b}^{\prime}$ | à | ky $=\hat{\varepsilon}$ | táan-bè. |
| :--- | :--- | :--- | :--- | :--- |
| 1SG | MOD | DEF1 | meat=DEF2 | cook-PRSP2 |

I'm going to cook the meat.

A second context in which the simple future $b \grave{e} . . .-a$ and the certain future $b \grave{e} .$. .-bê have different interpretations is given in (53). The speaker is warning the addressee not to sit on a certain rock because it is very unstable (see Fleischman (1982:92), Bybee and Dahl (1989:92)). With the simple future in (53a), the interpretation is that the rock will fall only if the addressee sits on it. In (53b), however, the certain future indicates that the rock is going to fall either way.
53. context: We went for a picnic in the bush, and you want to sit down to eat. There's a pile of rocks, but one of them isn't very stable, so I tell you not to sit on it.

| Á | nínen | hìn | mímí | bo. |
| :--- | :--- | :--- | :--- | :--- |
| 2SG | sit | be.able.to | over.there | NEG |

Á jínen hìn à timin=̂̀ ta bo.
2SG sit be.able.to DEF1 rock=DEF2 on NEG
You can't sit there. You can't sit on that rock.
a. À bè kùnkoln-a.

3SG MOD roll-PRSP1
It will fall

Consultant comment: If you sit on it, it will fall.
b. À bè kùnkoln-b̂̂.

3SG MOD roll-PRSP2
It's going to fall.
Consultant comment: It's about to fall. It will fall if he sits on it or not.

One more minimal set is given in (54). The speaker has been asked what they are planning to do tomorrow. In this case, the response with the simple future in (54a) is felicitous, but the response with the certain future in (54b) is infelicitous. This is because (54b) means that
the speaker is already at the market, which is not the case according to the context. The utterance in (54b) is translated as 'I came to buy corn,' rather than 'I am going to buy corn.'278
54. Context: Someone asks what I'm going to do tomorrow. I have to go to the market to buy corn.
a. Ń bè jùmlan $\begin{aligned} & \text { Nonn-a. }\end{aligned}$

1SG MOD corn buy-PRSP1
I will buy corn.
French: J'acheterai du maïs. (C)
$\begin{array}{lllll}\text { b. \# Ń } & \text { bè } & \text { jùmlay } & \text { sonn-b̂̂. } \\ & \text { 1SG } & \text { MOD } & \text { corn } & \text { buy-PRSP2 }\end{array}$
I came to buy corn.
French: Je suis venu pour acheter du maïs. (C)
consultant comment: I am at the market.
Traoré (1985) describes the simple future bè. . .-a as more distant and uncertain than the certain future (55).
55. $\grave{\text { À }} \quad \mathbf{b}^{\prime}$ à shu-a.
(Traoré 1985:36)
3SG MOD 3SG know-PRSP1
He will know it.
French: Il le saura. (Traoré's translation)
In contrast, he describes the certain future as situating an event at a very immediate time, as his examples in (56) show.

\footnotetext{
${ }^{278}$ Future oriented movement predicates can be expressed in one of two ways, either as in (i) with dénno. . . kj́on-n or as in (ii) with k'jon-n. . . kj’วy-n. Utterances like (ii) are very common, but Siamou speakers consider them to be bad grammar.

56.

| a. | Nò bè jo-b $\hat{\boldsymbol{\varepsilon}} \quad$ (Traoré 1985:36) |
| :--- | :--- | :--- |
| rain MOD start-PRSP2 |  |
|  | It's going to rain (soon). |
|  | French: Il va pleuvoir (bientôt). (Traoré's translation) |

b. Ń bè le di-b $\hat{\boldsymbol{\varepsilon}} \quad$ (Traoré 1985:36) 1 SG MOD food eat-PRSP2
I am going to eat. (literal translation of Traoré: I am coming to eat.)
French: Je viens pour manger (immédiatement). (Traoré's translation)
However, the fact that the certain future often has a more immediate interpretation than the simple future does not mean that this is a necessary component of its meaning. In fact, the immediacy reading can be cancelled using a temporal adverbial phrase (57).

| 57. Ye-Lón bè | be-bè | ǹ̀tôn | tyáar | wono |
| :--- | :--- | :--- | :--- | :--- |
| Carmela MOD come-PRSP2 | year | three | in |  |
| Carmela is going to come in three years. |  |  |  |  |

The examples above can all be accounted for if we assume that $-a$ encodes distant prospective aspect while -bê encodes near prospective aspect. Distant prospective aspect and near prospective aspect can be diagrammed as in (58).
58. a. Distant prospective aspect R.................. E
b. Near prospective aspect R. ... E

Nearness does not have to be interpreted as temporal nearness (or ((57) would be infelicitous). It can be interpreted as certainty (nearer to reality), as in (52b) and (53b), or even as physical nearness, as in (54b).

With the certain future, it often seems as though the events leading up to the event have already been set in motion (see Bybee and Dahl (1989)). The certainty of the certain future can be derived quite naturally from the process already in motion. If the sequence of events leading up to an outcome has already begun, it is much more likely the outcome will be realized. The certain future can be used when the process has actually already begun, such as in (53b) when the rock is already on its way to falling, even if you are not foolish enough to sit on it, or in (54b) when the speaker has already arrived at the market, ready to buy corn, or in (56a) when presumably the rain clouds have already started to form. It can also be used when the sequence of events is not as clear. For example, someone's decision to do something can be a part of the
process. Thus (52c) can be uttered in the context of planning a party, but it is not felicitous as an offer because the speaker is saying that the sequence of events leading up to their making of the food has already begun, which allows no room for negotiation.

Utterances with past reference times can also refer to events already in motion. For example, in (59), the utterance is infelicitous because the speaker is already beginning the process of spreading a mat, which is not possible if there is no mat.
59. \#Ń bè kpàr búr-bè, k c , kpàr tèn-nèn bo. 1SG MOD mat spread-PRSP2 but mat become-STAT NEG \# I am going to spread a mat, but there isn't any mat.
consultant comment: If you are going to spread a mat, you already have a mat in your hand, so this doesn't really make sense.

Take Copley's (2009) analysis for English futures as a starting point. Recall that Siamou modal futures differ from English modal futures in that they can refer to events that are not necessarily expected to occur. Therefore, if will has the structure shown in Figure 7.3, in which $t$ represents the reference time and $q$ the proposition referring to the future event, then the Siamou simple future bè. . .-a could be represented as in Figure 7.4, in which not all the worlds branching off from $t$ are $q$ worlds, but at least some are $p$ worlds.


Figure 7.3 will (Copley 2009:82)


Figure 7.4 Siamou Simple Future bè. . .-a

The certain future $b \grave{e} . . .-b \hat{\varepsilon}$, on the other hand, refers to an event that is evaluated from a reference time $t$ that is nearer to the event $q$. This is represented in Figure 7.5. The fact that it is nearer to $q$ means that there are fewer worlds branching off after the reference time, and so fewer worlds in which $q$ does not happen. This is why events described by bè.. .-bê are interpreted as more certain. The worlds branching off before $t$ were possible worlds at some point in the past of $t$ but not at $t$.


Figure 7.5 Siamou Certain Future bè. . .-b̂
Suppose that in Figure 7.5, the branch that occurs before the time $t$ represents the speaker's arrival at the market from example (54b). After he arrives at the market, the percentage of worlds in which he buys corn is higher than it was before he arrives at the market because some of the worlds in which he does not buy corn are excluded.

With respect to the offering contrast from 7.2.5.4, my analysis shows that in Siamou, the contrast can be explained by an aspectual contrast between near and distant (or neutral)
prospective aspect. This is different than all the analyses given so far, as shown in Table 7.4. It remains to be seen whether or not it is possible to find one analysis that works for all of these languages.

Table 7.4 Cross-Linguistic Comparison of Offer Future versus Non-Offer Future

| Language | Modality |  |  | Aspect |
| :--- | :--- | :--- | :--- | :--- |
|  | Offer Future | Non-Offer Future | Offer Future | Non-Offer Future |
| English | modal | modal | bare | progressive |
| Blackfoot | modal | modal | bare | imperfective |
| St'át'imcets | modal | not modal | bare | prospective |
| Siamou | modal | modal | (distant) prospective <br> $\boldsymbol{- a}$ | near prospective - <br> $\boldsymbol{b} \hat{\boldsymbol{\varepsilon}}$ |

In this section I argued that the suffix $-a$ is a marker of neutral prospective aspect (i.e. unspecified for relative distance in the future), and that -b̂ is a marker of near prospective aspect. In the following section I look at the particles $r i$ and be by comparing the priority future $r i .$. . $-a$ with the simple future bè. . .-a

### 7.4.2 The Two Particles ri and bè Are Finiteness and Intentional Modality

The particles $r i$ and bè do not contribute to the prospective aspect part of the meaning of these future expressions, since I have shown that the suffixes are prospective aspect. In this section I look at what kind of meaning they do contribute. I suggest that $r i$ is a marker of finiteness and that it only appears in a future expression when bè does not. I also suggest that the particle bè encodes intention on the part of the subject or the speaker, and that when it is absent in the priority future, the result is a lack-of-intention implicature, which leads to the sense of obligation or desire of the priority future.

I showed in 7.1.3 that the particle $r i$ is part of the basic make-up of finite constructions in Siamou. It occurs with the perfective, imperfective, completive and stative as well as prospective 1 (60a-e), but not with prospective 2 (60f). In (60a-d) it does not appear to contribute to the aspectual or modal meaning of the phrase.
60. a. À ri byè.

3SG FIN come.PRFV S/he came.
b. $\grave{A}$ ri blaà-n.

3SG FIN come-IMPF
She is coming.
c. $\grave{\mathrm{A}}$ ri bè-è.

3SG FIN come-CMPL
S/he has already come.
d. $\grave{\mathrm{A}}$ ri be-nèn.

3SG FIN come-STAT S/he [has come]/[is here].
e. $\grave{\mathrm{A}}$ ri b $\varepsilon$-a.

3SG FIN come-PRSP1
She will come.
French: Il va venir. (C)
$\begin{array}{llll}\text { f. } & * \begin{array}{ll}\text { À } & \text { ri } \\ & \text { 3SG }\end{array} & \begin{array}{l}\text { FIN } \\ \text { FIN }\end{array} & \\ \text { come-PRSP1 }\end{array}$
Because of its distribution in (60a-d), I proposed in 7.1.3 that $r i$ is a finiteness marker. However, this seems problematic when we look at the priority future ri. . .a (1a, 60e). The suffix $-a$ is a prospective aspect, and it does not mark priority modality because if it did we would expect the simple future bè. . .-a to have priority interpretations as well. If we were attempting a compositional analysis (which we are), this might lead us to believe that $r i$ is the source of the priority modal meaning of the priority future (deontic or bouletic). However, then we have to explain why ri does not have this meaning in any other type of expression. We could say that the priority readings arise from the structure itself-from the combination of $r i$ with $-a$, but this is not really an explanation. I will argue that the priority reading of the priority future is an implicature that arises from the absence of bè. If it is an implicature, this explains why not all priority futures have priority modal meanings. Sometimes (as in 60e), they are interpreted the same as simple futures. First, however, I need to look at the meaning of bè.

Bè occurs in many clause types, including ones that do not have a future interpretation. In these types of clauses, they often have 'managed to' or 'succeeded at' interpretations, as in (61).
$\begin{array}{lllll}\text { 61. } & \text { À } & \text { bè } & \text { kro } & \text { dé. } \\ & \text { 3SG } & \text { MOD } & \text { knife } & \text { sharpen }\end{array}$
He succeeded at sharpening a knife.

If someone "manages" to do something, this presupposes that what they did was difficult, or that they met with some kind of obstacles that they overcame (see Portner (2009)). ${ }^{279}$ In order to do something difficult, someone has to have the intention of doing it. It is not an accident, or something that just happened. Therefore, one way of analyzing the particle bè in these types of clauses is as a particle that encodes intention (usually on the part of the subject). Modal future expressions may also be about intention. For example, Tonhauser (2011) argues that in Paraguayan Guaraní, the suffix - $t a$ is a modal future that encodes intention and prediction. She describes intention as "an agent's mental state of intending to make a proposition be true at a time in the future" (Tonhauser 2011:213).

The Siamou simple future $b \grave{e} . . .-a$ and the certain future $b \grave{e} . . .-b \hat{\varepsilon}$, which both contain $b \grave{e}$, are compatible with an intention reading. For example, in (62), the first clause, which contains the certain future bè. . .-bê, is about the subject's intentions, and the second clause, which contains the simple future bè. . . $-a$, is about the speaker's intentions.
62. À bè dú-bè fóro à káal=1̂ jinatye

3SG MOD climb-PRSP2 till DEF1 hill=DEF2 top
kè à bè dú-a bo.
but 3SG MOD climb-PRSP1 NEG
He will climb to the top of the hill, but he won't climb.
consultant comment: You're talking about what he wants, but you're not going to allow it. Maybe the hill belongs to you and he has to get permission from you first. I know he won't do it because I will prevent him.

It remains to be determined how well the modal concept of intension fits with the Siamou futures that contain bè.

I explained in 7.1 that $r i$ and be are not actually in complementary distribution and that the key to understanding the priority future is to realize that what is relevant is not that it contains $r i$, since most finite clauses contain ri, but rather that it does not contain bè. Since both the other future expressions contain bè, and since these futures have the most basic future meaning, we could perhaps argue that bè is the "default" particle for future expressions in the way that $r i$ is the "default" particle for non-future expressions. This means that the absence of bè in the priority

[^178]future is note-worthy, and could lead to an implicature that the meaning of bè is specifically not part of the meaning of the priority future. This, I argue, is one possible reason that the priority future sometimes has an interpretation of obligation or desire. If the subject is going to do something, but not based on their own intentions, then their reason for doing it might be based on other factors-either an outside influence (obligation), or their own influence (desire). We are not necessarily in charge of our desires, but they may cause us to do things that we do not intend.

The concepts introduced in this section need to be fleshed out and tested. For now, they are simply an explanation of my current understanding of Siamou's future expressions. In the conclusion (7.5) I list some of the questions that remain and some steps for answering them.

### 7.5 Conclusion and Outstanding Questions

I have shown in this chapter how Siamou future expressions are composed. The priority future is made up of a finiteness marker, $r i$, and a prospective aspect morpheme $-a$. The simple future has this same suffix $-a$, and also contains the particle bè which is a modal, and which may encode intention. The certain future contains the particle bè as well, and the near prospective aspect suffix, $-b \hat{\varepsilon}$.

The following paragraphs discuss some questions or problems that were raised by the information in this chapter.

In 7.3.1-7.3.3 I presented three tests to show that the Siamou futures are prospective aspect: they have obligatory future interpretations, they occur in aspect position, and they are compatible with past tense. However, it would be desirable to have more tests to differentiate future tense from prospective aspect. Enç (1996) used sequence of tense effects to show that the English future will was different from the past tense -ed. Sequence of tense data from Siamou is complicated by the fact that "past" construals are often obtained in the absence of past tense. In Siamou, it is aspect, not tense, that is (usually) obligatory in a finite clause. The relevant data is shown in (63).
63. a. Past tense stative embedded under (past-construed) perfective is ambiguous. (shifted or simultaneous reading)

| Fòn | à | ló | dé | Ye-Lón | kyèn-jı̀n | ín. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Tim | 3SG | say.PRFV | QUOT | Carmela | be(come).tired-STAT | PST |

consultant comment: She was tired when he said it, or before.
b. Simple future under simple future is ambiguous.
(shifted or simultaneous reading)
Fòn̂ $\mathbf{b}^{\prime}$ à wú-a dé Ye-Lón bè kyèn-a.
Tim MOD 3SG say-PRSP1 QUOT Carmela MOD be(come).tired-PRSP Tim will say that Carmela will be(come?) tired.
consultant comment: She is tired when he says it, or after.
64. a. (Present) Stative under (past-construed) perfective is not ambiguous.

| Fòn̂ à $\quad$ ló | dé | Ye-Lón | ni | kyèn-jı̀̀n. |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Tim | 3SG | say.PRFV | QUOT | Carmela | FIN |
| Tim se(come).tired-STAT that | Carmela is tired. |  |  |  |  |

consultant comment: She's tired now.
b. (Present) Stative under simple future is not ambiguous.
Fôn̂ $\mathbf{b}^{\prime}$ à wú-a dé Ye-Lón ni kyèn-jèn. Tim MOD 3SG say.PRSP1 QUOT Carmela FIN be(come).tired-STAT Tim will say that Carmela is tired.
consultant comment: You are tired now.
Sequence of tense readings need to be tested more rigorously, controlling for both tense marking and aspect marking, and bearing in mind that "past" readings are not always the result of past tense.

I proposed in this chapter that ri marks finiteness and bè marks intentional modality. However, I have not pursued these claims. In order to determine whether ri actually marks finiteness, I need to more thoroughly test its distribution in finite clauses. Its tendency to drop out in casual speech makes it more difficult to analyze. For example, in non-verbal predicates, $r i$ is often absent. However, I do not know whether it is required in such clauses in careful speech, or
if it simply does not occur with certain non-verbal predicates. I also need to look at non-finite predicates, such as those containing the non-finite particle $k i$, to contrast them with ri-clauses and determine whether or not there is any overlap.

The analysis of the particle bè also left many questions unanswered. Is a unified analysis of bè in all its contexts of use possible, or even desirable? I proposed that bè marks intentional modality. However, it occurs in many future expressions that do not seem to be about intention. It also occurs in some non-future expressions (for example, subordinate clauses and non-verbal predicates) that are not about intention either.

I argued that the three future expressions all encode modality, and that the bè futures are (at least sometimes) about intention, and the $r i$ future is about non-intention, leading to a priority modal reading. More tests need to be done to find out what kinds of modal bases and ordering sources these future expressions are compatible with.

Finally, the prospective aspect 2 suffix, $-b \hat{\varepsilon}$ is not compatible without bè. That is, there is no ri. . .-bê future expression in Siamou. A complete analysis of these future expressions should provide an explanation for this. One possibility is that if -bê implies that a set of steps leading up to the event is already in progress, perhaps this means that it has gone beyond a vague idea such as desire or obligation, and the "intentional" reading provided by bè is obligatory.

I leave this work on futures for future work.

### 7.6 Appendix: More Data on Futures

In this section I give a brief description and a number of extra examples for each of the three future expressions, both from elicitation and from story telling contexts. Some of these examples came up in previous discussion in this chapter, but they are repeated here to help with the description. Other examples are not mentioned elsewhere. By including them, I hope to make them more readily available for future analysis.

### 7.6.1 The Priority Future: ri ... -a

The priority future often has a sense of either desire (65) or obligation (66), or perhaps a mix of the two (67), on the part of the subject. It may be used in brief exchanges, such as between a host and a guest (67).
65. À ri li-a.

3SG FIN go.out-PRSP1
He will go out/He wants/intends to go out.
French: Il sortira./Il a le desir de sortir. (C)
66. a. À bisháayn=1̂ ri tal-a ń se. DEF1 child=DEF2 FIN stay-PRSP1 1SG at The child will agree to stay with me. French: L'enfant acceptera de rester avec moi. (C)
context: My sister has to go on a trip, but she can't bring her son with her, so she is leaving him with me.
consultant comment: The child might not like it that his mom is going away, but if he has to stay with someone, he'd like to stay with me.
b. Ń n' à $\mathrm{ky} \varepsilon=\hat{\varepsilon}$ táan-a. 1SG FIN DEF1 meat=DEF2 cook-PRSP1
Ok, I'll cook the meat.
context: A group of people is planning a party. Everyone will have a job to do. I'm not really very interested in preparing the meat, but I agree to do it.
67. À ri gbe-a $\quad y^{\prime} \quad$ á?

3SG FIN drink-PRSP1 EP Q
Will you have a drink?
Oo, ń ni gbe-a.
yes 1SG FIN drink-PRSP1
Yes, I will.
context: Host offers guest some water. Guest accepts. consultant comment (when asked if the guest feels obligated to drink): His thirst is obligating him.

This construction occurs frequently in narratives as well. Most of the narrative examples given here are taken from a very long story summarized in (68).
68. An old man asks his three sons how they will honour him after he dies. The first two promise to bury him with items of gold, but the youngest promises that he will go and cut off an elephant's tail and bring it back to be used as a pillow for his father's head. After his father dies, the son makes an expedition, eventually killing an elephant and taking its tail. In the process, he befriends some vultures who are happy for the elephant meat and give the man a fetish which allows him to transport himself long distances in the blink of an eye. The man goes back home and settles down, but the wife of the elephant he killed is set on revenge. She goes hunting for the man who killed her husband. She turns herself into a beautiful girl and goes from village to village getting the young men to participate in a shooting contest. The one who wins the contest gets to marry her. Only the man who killed her husband would be skilled enough to hit her target. When she finds him, she marries him, but on their wedding night she repeatedly tries to kill him by various means. The man is sly enough to figure out her tricks and escape. In the morning he goes out to his field to burn a pile of debris. The elephant follows him there and tries to kill him again but he escapes by throwing the fetish from the vultures into the fire, which causes him to turn into a vulture and allows him to escape. However, since he burned the fetish he can no longer turn back into a human. This is why, when you make a fire, the vultures gather. It is this man, still looking for his fetish so he can become human again.

Although in elicitation, priority futures were preferred in contexts where the subject felt some kind of obligation or desire, in the narratives this construction occurs in a wider range of contexts. Sometimes it is circumstances or social norms that make the situation described by the priority future construction likely to happen rather than purely obligation or desire. A few examples are given in (69-72).
69. À ri gbâr=̂̂ mun ye à hlò,
3SG FIN time=DEF2 REL at 3SG know.PRFV

| d' | àkun | ni | klò |
| :--- | :--- | :--- | :--- |
| QUOT | 3SG.EMPH | FIN | become.old.PRFV |


| d' | àkun | wo | dál-a | ká | bo, |
| :--- | :--- | :--- | :--- | :--- | :--- |
| QUOT | 3SG.EMPH | NPI | stay-PRSP1 | anymore | NEG |


| ki | kyáymı | á | dye | món | tyáar=̂̂ | fén-n. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| NFP | now | LOG | child | CL | three=DEF2 | call-IMPF |

When he realized that he was old, that he wouldn't last much longer, he then called his three children.
context: A father realizes that he will soon die, and he calls his three sons to ask how they are going to plan his funeral.
70. Á mùlo kló 2SG when die.PRFV When you die,
mún ni sćgln wâ=â á tohlú búrnkonn jir-a. 1SG.EMPH FIN gold cloth=DEF2 2SG cover blanket transform-PRSP1 I will cover you with a gold cloth.
context: The second son tells his father how he will honour him after he dies.
71. À $\operatorname{dy} \varepsilon=\hat{\varepsilon}$ jimiì̀=î ki tenn árí yì to-a. DEF1 village=DEF2 people=DEF2 NFP become like 3PL cry-PRSP1 The people of the village looked like they were going to cry.
context: All the men of a certain village missed the target that the beautiful woman (the elephant) set up, and they were all disappointed because this meant she would not marry one of them and stay in their village. ${ }^{280}$
$\begin{array}{lllllllllll}\text { 72. } & \text { Yì } & \mathrm{k}^{\prime} & \text { à } & \text { wú } & \text { dé } & \text { fù } & \text { ki } & \text { ymón } & \text { kwo } & \text { ín, } \\ & \text { 3SG } & \text { NFP } & \text { 3SG } & \text { say } & \text { QUOT } & \text { DEM } & \text { NFP } & \text { see } & \text { do } & \text { PST }\end{array}$
àni mímyée bisháayn jon sós
dé à ri tènn-a yìkun ǹ dy $=\hat{\varepsilon} \quad$ mo ín. QUOT 3SG FIN be-PRSP1 3PL.EMPH POSS village=DEF2 in PST So they said that if they found him, this beautiful young woman, she would stay in their village.
context: The man who killed the elephant is out in the fields so he misses the shooting contest, but the people of the village decide to go find him because if he can hit the target, he will marry the girl and she will stay in their village.

### 7.6.2 The Simple Future: bè ... -a

The simple future and the certain future do not convey either desire or obligation. Traoré (1985) usually translates the simple future into French as a futur simple (simple future) (73a), although he sometimes gives the futur proche (near future) as well, as in (73b). He describes this future as distant and uncertain in contrast with the other two future expressions. This future may be used to make an offer (74). It is also used in a wide range of contexts in the same narrative as the one used above (75-79).

[^179]73. a. À bè kol-a.

3SG MOD ripen-PRSP1
It will ripen.
Traoré's translation: Il mûrira. (Traoré, 1985:35)
b. $\grave{A}$ bè b $\varepsilon$-a.

3SG MOD come-PRSP1
He will come.
Traoré's translation: Il va venir./Il viendra. (Traoré, 1985:35)
74. Ń bè na nan jén-a.

1SG MOD today wood look.for-PRSP1
I'll go get wood today.
context: It is International Women's Day, so a husband offers to help his wife by getting the firewood.
75. Mún mù-lo kló, 1SG.EMPH REL-day die.PRFV
yíi bè gbáno mún kún=î kwo-a.
2PL MOD how 1SG.EMPH funeral=DEF2 do-PRSP1
When I die, how will you do my funeral?
context: An old man near death asks his sons how they will honour him at his funeral.
76. À klòron $j 0=\hat{\jmath}$ k' à wú dé háà!

DEF1 old.person guy=DEF2 NFP 3SG say QUOT ah!
$\mathrm{d}^{\prime}$ à nì mano kwó, fù nì kwo hìn tènn, QUOT 3SG if like.that as.for DEM if do be.able.to be
d' àkun kún=î kle fá-â bè nukwó-a. QUOT 3SG.EMPH funeral=DEF2 do.IMPF.NOM way=DEF2 MOD be.good-PRSP1 The old man said, ah! If that's the way it was, if that could be done then he, his funeral would be well done.
context: The old man expresses his satisfaction at his sons' plans.
$\begin{array}{lllllllll}\text { 77. } & \text { Àkun } & \text { ni } & \text { la } & \text { à } & \text { lóo-n } & \text { á } & \text { to- } \hat{y} & \text { se } \\ \text { 3SG.EMPH } & \text { FIN } & \text { then } & \text { 3SG } & \text { say-IMPF } & \text { LOG } & \text { father=DEF2 } & \text { to }\end{array}$

| d' | á | $\mathbf{b}^{\prime}$ | à | tokpé $-\mathbf{a}$ | shun | dar | 0 | ín. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| QUOT | LOG | MOD | 3SG | bury-PRSP1 | elephant | tail | with | PST |

Shun dar kwà-mun 0. Shun nì la ymón bo, elephant tail cut.PRFV-already with elephant if then see NEG
fù la bè trnn-a fléc.
DEM then MOD be-PRSP1 shame
He had told his father that he would bury him with an elephant tail, with a cut-off elephant tail. So if an elephant was not found, that would be a dishonour.
context: The youngest son is worrying that he might not find an elephant in time for his father's burial.
78. À ta dwon kwó, á nì kyánmo dénno kloŋn se,
3SG on tomorrow as.for 2 SG if now go.PRFV? field to
á ki myen say,
2SG NFP sweepings set.fire.to
á bè dénno à gmón kún-a.
2SG MOD go.PRFV? 3SG see go-PRSP1
Even tomorrow, if you go to the field and you burn garbage, you will see.
context: The story is concluding. The narrator tells the audience why vultures appear when you burn garbage in the field. It's this man who turned into a vulture by burning his fetish. He's looking for the fetish so he can turn back into a human.
$\begin{array}{lllllllll}\text { 79. } & \text { Á }^{281} & \text { mù-lo } & \text { à } & \text { twayl=̂̂ } & \text { ymón } & k^{\prime} & \text { à } & \text { s } \varepsilon \text {-tìn } \\ & \text { LOG? } & \text { REL-day } & \text { DEF1 } & \text { fetish=DEF2 } & \text { see.PRFV } & \text { NFP } & 3 \text { 3SG } & \text { re-tie }\end{array}$ LOG? REL-day DEF1 fetish=DEF2 see.PRFV NFP 3SG re-tie
à kpeyn to, fù $10=\hat{\jmath}$ mo à $\mathbf{b}^{\prime}$ á se-tojir-a. 3SG hand at DEM day=DEF2 in 3SG MOD LOG re-transform-PRSP1 The day that he finds his fetish, and reties it on his hand, on that day, he will retransform himself.
context: When the man who is a vulture finds his fetish, he will turn back into a human

[^180]
### 7.6.3 The Certain Future: bè ... -b $\hat{\varepsilon}$

Traoré (1985) describes the certain future as situating an event at a very immediate time, as his examples in (80) show.
80. a. Nò bè jo-b̂̂.
rain MOD start-PRSP2
It's going to rain (soon).
Traoré's translation: Il va pleuvoir (bientôt).
b. Ń bè le di-bê.

1SG MOD food eat-PRSP2
I am going to eat. (literal translation of Traoré: I am coming to eat.)
Traoré's translation: Je viens pour manger (immédiatement)
However, the fact that the certain future often has a more immediate interpretation than the simple future does not mean that this is a necessary component of its meaning. In fact, the immediacy reading can be cancelled using a temporal adverbial phrase (81).
81. Ye-Lón bè be-bè nòtôn tyáar wono.

Carmela MOD come-PRSP2 year three in
Carmela is going to come in three years.
In the narrative, the certain future is used mostly for near futures (82-85), but also for distant but certain futures (86).
82. Na fù ri $\grave{\varepsilon}$, $\hat{\mathrm{n}}$ b' à funkpé-b̂̂. today DEM FIN there 1PL MOD 3SG start-PRSP2 For today, we're going to start.
context: This is the narrator's first sentence before launching into the story.
83. Mún bè gbáno kél-b̂̂ yé mún ki don fù ymón-ké.

1SG.EMPH MOD how walk-PRSP2 still 1SG.EMPH NFP go DEM see-go How will I keep walking to go see him?
context: The young man is discouraged and wondering how he will keep going so he will not miss his father's funeral.
84. ${ }^{282}$ Mún saaŋ bè nukwó-b̂ê ákun to. 1SG also MOD be.good-PRSP2 2SG.EMPH to I am also going to be good to you.
context: The vulture king is pleased with the young man for killing an elephant and supplying them with meat, so he promises to do a good deed for the man in return.
85. À mùfon bè lo-bê dye má to, 3SG when MOD arrive-PRSP2 village other at $\mathrm{k}^{\prime}$ á tojìr mímyée bisháayn jon sóv. NFP LOG transform young.woman child good big When she wanted to enter another village, she transformed herself into a beautiful young woman.
context: The dead elephant's wife is travelling from village to village looking for the man who killed her husband. She travels as an elephant, but whenever she gets to a village, she turns herself into a young woman.
86. Dwo só=غ̀ bè dukú-bê, yì ki be vulture big=PL MOD get.up-PRSP2 3PL NFP come The vultures are going to get up and come
à ny $\varepsilon=\hat{\varepsilon}$ ta mliy kùnmo.
DEF1 fire=DEF2 on circle start
and start to circle above the fire.
context: The narrator is telling the audience what will happen if they go out and start a fire.

[^181]
## 8. Conclusion

This dissertation focused on a number of different topics on Siamou tense and aspect. The main facts about the tense/aspect system of Siamou are shown in Table 8.1.

Table 8.1 Siamou Tense and Aspect

| Tense | PST | À | ri | le | leè | -n | ín | R<S |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 3SG | FIN | food | eat | -IMPF | PST |  |
|  |  | S/he was eating food. |  |  |  |  |  |  |
|  | PRES | À | ri | le | leè | -n |  |  |
|  |  | 3SG | FIN | food | eat | -IMPF |  |  |
|  |  | S/he eats/is eating food |  |  |  |  |  |  |
|  | FUT | --- |  |  |  |  |  | $\mathrm{R}>\mathrm{S}$ |
| Temporal Aspect | PERF | À | ri | le | dì | -nèn |  |  |
|  |  | 3SG | FIN | food | eat | -STAT |  |  |
|  |  | S/he ate/has eaten food. |  |  |  |  |  |  |
|  |  | A | ri | le | dì | -è |  |  |
|  |  | 3SG | FIN | food | eat | -CMPL |  |  |
|  |  | S/he ate food (recently/competely). |  |  |  |  |  |  |
|  | PRSP | À | ri | le | di | -a |  | $\mathrm{R}<\mathrm{E}$ |
|  |  | 3SG | FIN | food | eat | -PRSP1 |  |  |
|  |  | S/he wants to/will eat food. |  |  |  |  |  |  |
|  |  | À | bè | le | di | -a |  |  |
|  |  | 3SG | FIN | food | eat | -PRSP1 |  |  |
|  |  | S/he will eat food. |  |  |  |  |  |  |
|  |  | À | bè | le | di | -bê |  |  |
|  |  | 3SG | FIN | food | eat | -PRSP2 |  |  |
|  |  | S/he is going to eat food. |  |  |  |  |  |  |
| Viewpoint Aspect | IMPF | À | ri | le | leè | -n |  | R completely in E |
|  |  | 3SG | FIN | food | eat | -IMPF |  |  |
|  |  | S/he eats/is eating food. |  |  |  |  |  |  |
|  | PRFV | À | ri | le | di | -L |  | R partly in E |
|  |  | 3SG | FIN | food | eat | -PRFV |  |  |
|  |  | $\mathrm{S} /$ he ate food. |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

The first section shows that Siamou has a past tense morpheme in (chapter 6). The past tense contrasts with present tense, but the present tense is not marked. Future tense is not instantiated at all. Instead, conepts of futurity are expressed in Siamou with prospective aspect.

The second section represents temporal aspect in Siamou. It includes two suffixes which resemble perfect aspect (stative $n e ̀ n$ and completive $-\grave{e}$ ). Further analysis is needed to clarify the meaning of these two suffixes. It also includes Siamou's three future expressions, which all encode prospective aspect and differ in terms of what kind of modality they express (chapter 7).

The final section of the chart is of viewpoint aspect in Siamou. It includes the imperfective and perfective (chapter 5). The perfective has three representations, but I so far I only have evidence for the first two in Siamou.

The following subsections summarize the key findings about tense (8.1), and aspect (8.2).

### 8.1 What Siamou Teaches Us about Tense

Section 8.1.1 summarizes the findings of this thesis as they relate to tense, and section 8.1.2 discusses some outstanding tense-related issues.

### 8.1.1 Some Tense Construals Arise by Default

In Siamou, there is only one tense morpheme, in , which marks past tense, and it is not obligatory. Instead, Siamou often uses aspect to convey temporal information, and different aspectual morphemes have default temporal interpretations. Perfective aspect has a default past interpretation (8.1.1.1), imperfective aspect has a default present interpretation (8.1.1.2), and futurity is conveyed by a combination of aspect and modality (8.1.1.3).

### 8.1.1.1 Past Tense Is the Default for Perfective

Perfective-marked utterances in Siamou have a very strong default past interpretation for nearly all utterances. The perfective sentence in (1) does not have tense marking, and yet it is only acceptable with a past interpretation, not a present or future interpretation.

| 1. | A ri <br>  yen. <br> 3SG FIN yawn.PRFV |
| :--- | :--- | :--- | :--- |

This interpretation is usually not cancelable. For example, adding the adverb kyáyms ('now') to the utterance in (2) only gives it a more recent past interpretation, not a present one.

| 2. | $\grave{A}$ | $\mathrm{w} \hat{\varepsilon}=\hat{\varepsilon}$ | ri | ló | kyáymo. |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | DEF1 | cloth.PL=DEF2 | FIN | wash.PRFV | now |

The clothes were washed now.
context: We are talking about clothes that were washed just recently.
This pattern is common cross-linguistically. Smith (2008) explains that this is because of a constraint called the Bounded Event Constraint, which states that bounded events can not be located in the present. This is because the present is such a short span of time that it would be impossible for most whole events to fit inside it. Since perfectives are bounded, this constraint applies to them and rules out present interpretations. ${ }^{283}$ (A separate constraint rules out future interpretations.) If we take the present to be an instantaneous moment, following Bennett and Partee (1978) and Reis Silva and Matthewson (2007), then the default reading of the perfective falls out naturally without even the need for Smith's (2008) bounded event constraint (see 4.4.1.1).

Consistent with this analysis, performative verbs allow a present interpretation for perfective-marked verbs, as shown in (3). This is because the event (refusing) takes up exactly the span of time that is the utterance time. ${ }^{284}$

| 3. | Ń | ni | ń | ká. |
| :--- | :--- | :--- | :--- | :--- |
|  | 1SG <br> I refuse. | FIN | 1SG | refuse.PRFV |

### 8.1.1.2 Present Tense Is the Default for Imperfective

In contrast to perfective verbs, imperfective verbs have a default present interpretation, as shown in (4).
4. Ń ni múkal leè-n gbângbâr.
1SG FIN tô eat-IMPF always

I always eat tô (corn porridge).
(also accepted: I used to always eat tô (corn porridge).
French: Je manges du tô à tout moment. (C)
(J'avais toujours l'habitude de manger de la nourriture. (L))

[^182]However, this default is not as strong as the default past interpretation of the perfective. Given the right context, imperfectives can have a past interpretation (5).
$\begin{array}{lllll}\text { 5. } & \text { Owo } & \text { ń } & \text { (ni) } & \text { láa-n. } \\ & \text { no } & \text { 1SG } & \text { FIN } & \text { sleep-IMPF } \\ & \text { No, I was sleeping. }\end{array}$
context: I asked a woman from our courtyard if she had heard the baby crying the night before. This was her response.

With the past tense marker in, imperfectives always have a past interpretation (6).
6. À ri le leè-n ín.

3SG FIN food eat-IMPF PST
S/he was eating food.
context: You were watching someone eating earlier and now you describe what you saw.

### 8.1.2 Future Reduces to Prospective Aspect and Modality

Siamou has three bi-morphemic future expressions: the priority future (ri). . . $-a$, the simple future $b$ è . . . $^{\text {a }}$, and the certain future $b \grave{e} . . .-b \hat{\varepsilon}(7 a-c)$.
$\begin{array}{lllllll}\text { 7. } & \text { a. } & \grave{A} & \text { (ri) } & \text { nun } & \text { gbs-a. } & \text { (priority future) } \\ & & 3 \mathrm{SG} & \text { FIN } & \text { water } & \text { drink-PRSP1 } & \end{array}$ He [will]/[intends to]/[wants to] drink water. French: Il boira de l'eau./Elle a l'intention de boire. (C)
b. $\grave{A}$ bè nun gbe-a. (simple future)

3SG FIN water drink-PRSP1
He will drink water.
French: Il boira de l'eau. (C)
c. $\grave{\mathrm{A}}$ bè nun gbe-b̀̀. (certain future) 3SG FIN water drink-PRSP2 He is going to drink water. French: Il va boire de l'eau. (C)

The priority future is often used to express obligation or desire. The simple future appears to have the most general future meaning, and the certain future is used to refer to future events that are nearer or more certain in some way. These future expressions are analyzed as a combination
of prospective aspect (expressed with either the $-a$ suffix or the $-b \hat{\varepsilon}$ suffix), and modality (expressed with the particle bè). ${ }^{285}$

### 8.1.3 Unresolved Issues in the Analysis of Siamou Tense

This section focuses on two main issues: Siamou future expressions ${ }^{286}$ (8.1.2.1), and the implicatures of past tense in (8.1.2.2).

### 8.1.3.1 Differentiating the Future Expressions

Descriptively, it is possible to distinguish between Siamou's three future expressions, as I did in 8.1.1.3. However, formally, it has proven a challenge to characterize the difference between them. They all combine with past tense in, they all may be used to refer to events that are not necessarily expected to happen, and there is overlap in the contexts where these expressions are felicitous. More diagnostics are needed to tease apart these expressions. Some key data to explore includes utterances like those in (8a-b), in which one kind of future expression is felicitous, but another one is definitely not.
8. Context: Someone asks what I'm going to do tomorrow. I have to go to the market to buy corn.
a. Ń bè jùmlay soyn-a.

1SG MOD corn buy-PRSP1
I will buy corn.
French: J'acheterai du maïs. (C)
b. \#Ń bè jùmlay sonn-bê. 1SG MOD corn buy-PRSP2 I came to buy corn.
French: Je suis venu pour acheter du maïs. (C)
consultant comment: I am at the market.
The discussion of Siamou future expressions also brings to light an issue in the theory of tense. We already know that we can not talk about the future in the same way as we talk about the past for the simple reason that the past has already happened, while the future has not. It has

[^183]become very common for future expressions in various languages to be analyzed as modal (e.g. Enç 1996), or as prospective aspect (e.g. Tonhauser 2011). Future expressions are no longer commonly analyzed as tense in any language. This may be because future tense as we have defined it (as reference time following speech time) does not exist. If so, it may be necessary to reevaluate our definition of future tense to see if it can still be a useful term in tense and aspect theory, or if it should be discarded. On the other hand, the apparent non-existence of this kind of future tense may serve to accentuate the differences between how we talk about the past and how we talk about the future.

### 8.1.3.2 Deriving the Implicatures of the Past Tense

The primary function of the past tense particle $i n$ is to shift the reference time from present to past. For example, the utterance in (9a) has a present interpretation. Adding ín in (9b) changes the interpretation to past.
9. a. À ri le leè-n. 3SG FIN food eat-IMPF S/he is eating food.
b. À ri le leè-n ín.

3SG FIN food eat-IMPF PST S/he was eating food.

However, $i n$ is also used to express other meanings, such as remote past, counterfactuality, cessation, politeness, and doubt. (See chapter 6.) The first three of these are analyzed as implicatures of past tense, and I suggested that the last two may be implicatures as well. However, it remains to be seen how exactly these implicatures arise.

One possible avenue to explore is the concept of morphological blocking (Poser 1992). For example, the reason a counterfactual reading arises when future expressions combine with past tense is that something was said instead of something else that could have been said. The utterance in (10a) has a counterfactual implicature. The assumption is that I did not finish chapter 8. If I had finished it, I would have said (10b) instead. The fact that I said (10a) and not (10b) creates the assumption that I could not say (10b) for some reason, perhaps because it is not true.
10. a. I was going to finish writing chapter 8 today.
b. I finished writing chapter 8 today.

In the same way, by adding past tense $i n$ to a sentence that already has a past tense interpretation, you are choosing an utterance like the one in (11b) instead of the one in (11a). There must be a reason for it. One reason for this could be that the speaker is signaling that the event is more distant in the past, as discussed in 6.4.1. However, sometimes it may be clear from the context that the event is not more distant in the past, and in those cases there has to be another reason that the speaker would choose to use past tense in . It is in these contexts that the politeness and doubt readings are predicted to arise. At this point I do not have a clear explanation for how this happens, so I set it aside for future research.

$$
\begin{aligned}
& \text { 11. a. } \hat{\mathrm{N}} \text { sró } \mathrm{j}=\hat{\mathrm{o}} \text { ri } \mathrm{s} \varepsilon \text { dukló. } \\
& \text { 1PL younger.sibling man=DEF2 FIN get.up.early get.up.PRFV } \\
& \text { Our little brother got up early. } \\
& \text { consultant comment 1: re: (11b)—You don't know what he did after he got up. } \\
& \text { You don't know if he got up and then went back to bed. You just know that he got } \\
& \text { up, but you don't know what happened after. } \\
& \text { consultant comment 2: [Example (11a)] is a declarative "affirmative" proposition } \\
& \text { because. . . that's exactly what happened. [Example (11b)] is a declarative "NON- } \\
& \text { affirmative" proposition. }
\end{aligned}
$$

### 8.1.3.3 Past: Is it Tense or Adverb?

I claim in this dissertation (see 6.3) that the past particle in is a tense morpheme.
However, really this is an unresolved theoretical issue because depending on what the criteria are taken to be, this morpheme could be analyzed as either tense or adverb. In order to make the claim that I do, I have to specifically state that for me the most important diagnostic for past tense is that a morpheme shifts or restricts reference time to past. If one considers the fact that in is not obligatory and is not in paradigmatic contrast with any other tense morphemes, it begins to look more like an adverb. However, ín does not pattern like other adverbs in Siamou. It does not have the same syntactic distribution as other adverbs (It is more restricted.), and it does not have the same phonological form (It begins with a vowel.). The table from 6.3 with the relevant diagnostics is repeated below.

Table 8.2 in as Past Tense or Adverb

| Criteria | Tense | Adverb |
| :--- | :--- | :--- |
| shifts/restricts reference time to past | $\checkmark$ | $\checkmark$ |
| obligatory | $\mathbf{x}$ | $\checkmark$ |
| paradigmatic contrast | $\mathbf{x}$ | $\checkmark$ |
| distribution | $\checkmark$ | $\mathbf{x}$ |
| phonology | $\checkmark$ | $\mathbf{x}$ |

### 8.2 What Siamou Teaches Us about Aspect

This section is divided into a discussion of grammatical aspect (8.2.1), lexical aspect (8.2.2), and a number of unresolved issues relating to aspect (8.2.3).

### 8.2.1 Grammatical Aspect

In Siamou, aspect is marked as a verbal suffix (12a). Although there are some exceptions, usually finite clauses must be marked for aspect, so the clause with a bare verb $b \varepsilon$ in (12b) is ungrammatical.
12. a. À ri be-a.

3SG FIN come-PRSP1
She will come.
French: Il va venir. (C)
$\begin{array}{llll}\text { b. } & * & \text { À } & \text { ri } \\ & & \text { 3SG } & \text { FIN } \\ & & \text { come }\end{array}$
The following two subsections outline the key findings about perfective aspect (8.2.1.1) and imperfective aspect (8.2.1.2).

### 8.2.1.1 Perfective Aspect Has Reference Time Partially Contained within Event Time

There are two similar but distinct definitions for perfective aspect, one from Klein (1994) and the other from Kratzer (1998). Klein (1994) defines perfective aspect as having a reference time partially contained within the event time. This allows three possible configurations, as shown in (13). Kratzer (1998) defines perfective aspect as having an event time completely contained within the reference time. This allows for only one possible configuration, as shown in (14).
13. Perfective Aspect according to Klein (1994)
a.

b.

c.

14. Perfective Aspect according to Kratzer (1998)


Siamou perfectives are usually compatible with the configuration in (13c) or (14), as the example in (15) demonstrates.
$\begin{array}{llllll}\text { 15. } & \text { Ń } & \mathrm{n}^{\prime} & \text { à } & \text { jùmlay=â } & \text { gbj́n } \\ & \text { 1SG } & \text { FIN } & \text { DEF1 } & \text { corn=DEF2 } & \text { gather.PRFV }\end{array}$
ń kloŋ=ô mo dír.
1 SG field=DEF2 in yesterday
Yesterday I harvested the corn in my field.
Hier, j'ai recolté le maïs dans mon champ. (L)
context: Yesterday morning I started harvesting the corn in my field, and in the evening I finished.
context (inappropriate): I started harvesting the corn before yesterday. Last night hadn't finished yet, and this morning I continued harvesting.

However, some types of verbs have an inceptive reading with punctual adverbs, as in (16), in which case the configuration in (13a) more accurately represents the situation.

16. | À | gbâr | món | níin=î |
| :--- | :--- | :--- | :--- | :--- | :--- |
| DEF1 | time | CL | two=DEF2 |

| gbâr |
| :--- | :--- | :--- | :--- | :--- |
| time |

à

This leads me to claim in 4.4.1.8 that Klein's (1994) definition of perfective aspect is better suited to the Siamou data that Kratzer's (1998) because Kratzer's (1998) definition does not have room for inceptive readings. However, Klein's (1994) definition of perfective aspect requires a stipulation that telic predicates must have an endpoint inside the reference time in order to account for the fact that inceptive readings are not available for accomplishment predicates. Kratzer's theory needs no such stipulation because inceptive readings are not allowed at all. I was not able to find evidence for Klein's third type of perfective shown in (13b).

### 8.2.1.2 Imperfective Aspect Has Reference Time Fully Contained within Event Time

Klein (1994) and Kratzer (1998) both define imperfective aspect as having a reference time that is fully contained within the event time, as shown in (17).
17. Imperfective Aspect According to Klein (1994) and Kratzer (1998)


This definition matches the data for the Siamou imperfective, as shown in (18), in which the event (harvesting the corn) is understood to precede and follow the reference time (last week).
$\begin{array}{lllllll}\text { 18. } & \text { Ń } & \mathrm{n}^{\prime} & \text { à } & \text { jùmlay-â } & \text { gbós-n } & \text { ín } \\ & \text { 1SG } & \text { FIN } & \text { DEF1 } & \text { corn=DEF2 } & \text { gather-IMPF } & \text { PST }\end{array}$
ń kloŋ=ô mo dír.
1SG field=DEF2 in yesterday
Yesterday I was harvesting the corn in my field.
Hier, j'étais en train de recolter le maïs dans mon champ. (L)
context (inappropriate): Yesterday morning I started harvesting the corn in my field, and in the evening I finished. ${ }^{287}$
consultant comment: You can't specifically state when it started or when it ended. All you can say is what was being done in the field.

The Siamou imperfective is compatible with a progressive reading (as in 18), and also with a habitual reading (19), as predicted by Comrie (1976).
19. À ri myel kleと̀-n

3SG FIN voice make-IMPF
It makes noise.
context: What happens if you tease a cat?
Comrie (1986) also predicted imperfectives to be compatible with stative verbs. However, this was not borne out in Siamou for reasons that I discuss in the following section.

### 8.2.2 Lexical Aspect

This dissertation, which focused more on grammatical aspect than lexical aspect, brought to light some important information about Siamou lexical aspect: Siamou lacks stative main verbs (8.2.2.1), and uses a variety of alternative strategies to express stativity (8.2.2.2).

### 8.2.2.1 Siamou Lacks Stative Main Verbs

In Kru languages, perfective-marked verbs predictably have a past interpretation with eventive verbs and a present (or undefined) interpretation with stative verbs. However, this pattern was not testable in Siamou because I was not able to find any stative verbs. There are verbs that sometimes have a stative interpretation, but further investigation revealed that these verbs were

[^184]not statives after all, but a class of eventive verbs that I called inchoatives. These verbs sometimes have an eventive interpretation, as in (20a), and sometimes have a result state interpretation, as in (20b). I argue in chapter 5 that the result state reading could be analyzed as an implicature of an inchoative verb: if something came to be, then it is.
20. a. Ń n' à nun=î jèn.

1SG FIN DEF1 water=DEF2 heat.PRFV I heated the water.
b. À nun=̂̂ jèn.

DEF1 water=DEF2 heat.PRFV
The water is hot.
L'eau est chaude. (C)

### 8.2.2.2 Siamou Has Alternative Strategies for Encoding Stativity

Instead of stative verbs, Siamou has a number of other strategies to express stativity. These strategies include non-verbal predicates (21), a grammatical aspect suffix -nèn (22), imperfectives of a small set of eventive verbs (23), and perfectives of inchoative verbs, as shown in (20) above.
21. Ń barana besé.

1SG banana behind I want a banana.
literally: I am behind a banana.
context: This was said to me by a child from Téndenno as she eyed the bananas on the counter.
22. À nun=î jèn-jı̀n.

3SG water=DEF2 heat/be.hot-STAT
The water is hot.
literally: The water is heated.
French: L'eau est dans un état chaude. (C)
23. a. Ń dír dénno nan jén-ké. 1sg yesterday go.PRFV? wood look.for-go Yesterday I went to look for wood.
b. Mún n' à né $\varepsilon$-n.
1SG.EMPH FIN 3SG look.for-IMPF

I want it.
literally: I'm looking for it.
context: You see a really pretty piece of cloth at the market that you want.

### 8.2.2.3 Absence of Stative Main Verbs Affects Expression of "Factative"

Marchese (1986) argues that other Kru languages have a verb form that can be called "factative" because this verb form has a present or undefined interpretation with stative verbs and a past interpretation with eventive verbs. However, I claim that Siamou has no stative main verbs. Therefore, the factative effect is not seen in the verbal domain since there is no stative eventive contrast. Nonetheless, the factative effect is observable if we contrast verbal (eventive) predicates with non-verbal (stative) predicates (see 5.5.2). In this case, non-verbal stative predicates have a present interpretation in the absense of past tense morphology (24a) while perfective-marked (eventive) verbs have a strong default past interpretation (24b).
24. a. Siamou non-verbal stative: present interpretation

| Klô | ń | to. |
| :--- | :--- | :--- |
| hunger | 1 SG | to |

I'm hungry.
literally: Hunger is to me.
b. Siamou eventive: past (perfective) interpretation with $-L$ suffix

| Ń | ni | le | dì. |
| :--- | :--- | :--- | :--- |
| 1SG | FIN | food | eat.PRFV |

I ate food.

### 8.2.3 Unresolved Issues in the Analysis of Siamou Aspect

The main questions regarding aspect are discussed in the following subsections. These include aspect in subordinate clauses (8.2.3.1), the syntactic structure of aspect (8.2.3.2), and a number of issues relating to stativity in Siamou (8.2.3.3).

### 8.2.3.1 Aspect in Subordinate Clauses

Although this dissertation focused on aspect in main clauses, there is some interesting data that contrasts perfective and imperfective aspect in subordinate clauses.

The perfective and imperfective are contrastive in if/when-clauses referring to future events. In (25a), the speaker is suggesting a mode of transportation to the addressee. The verb in the subordinate clause (if/when you come) is in the imperfective. If the perfective form is used the utterance becomes infelicitous (25b).
25. a. Á nì dwon blaà-n, á ki be mónbli mo.

2SG if/when tomorrow come-IMPF 2SG NFP come car in If/when you come tomorrow, come in a car.
b. \#Á nì dwon byè, á ki be mónblimo. 2SG if/when tomorrow come.PRFV 2SG NFP come car in intended reading: If/when you come tomorrow, come in a car.

The reason (25b) is infelicitous is that the perfective verb in the subordinate clause requires the event of coming in the car to follow the event of coming, but the addressee presumably can not come in a car after they've already come.

By changing the event to something that could happen either during the trip or after, both the perfective and the imperfective utterances become felicitous. In (26a), it is understood that the talking will take place during the trip, not after. In (26b) on the other hand, the speaker will talk with the addressee after the trip, not during.
26. a. Á nì dwon blaà-n, ń bè kel-a á wóse. 2SG if/when tomorrow come-IMPF 1SG MOD talk-PRSP1 2SG with If/when you come tomorrow, I will talk with you. compare to English: When you are coming, I will talk with you.
consultant comment: This means that you can talk with me during the trip but not after the trip.
b. Á nì dwon byè, ń bè kel-a á wóse. 2SG if/when tomorrow come.PRFV 1SG MOD talk-PRSP1 2SG with If/when you come tomorrow, I will talk with you. compare to English: When you (have) come, I will talk with you.
consultant comment: This means that you can talk with me after the trip but not during the trip.

The coming event and the talking event can be diagrammed as shown in (27). The first diagram corresponds to the utterance in (26a) and the second to the one in (26b). I have not coloured
these diagrams because I am not certain which one should be the reference time and which should be the event time.
27. a.
b.


The first diagram looks like it could be an imperfective. The second diagram is not a standard perfective, but perfectives do sometimes have sequential readings (although that has not been discussed in depth in this thesis), so it does not seem like too much of a stretch.

However, these examples do not actually fit well with Kratzer's (1998) or Klein's (1994) theories of aspect. The reason for this is that the perfective/imperfective marking occurs in the subordinate clause and not the main clause. If we take the subordinate clause to be providing the reference time in the above examples, then we would need a reference time for the reference time. The futures in the main clause, if they are prospective aspect, place the event (talking) after the reference time (or perhaps the speech time?). I am not certain how to resolve this at this point, so I leave it for future research.

There is a second set of difficult data relating to aspect in subordinate clauses. These phrases were elicited by first asking for a translation into Siamou of a number of French phrases. These examples are given in (28).
28. Perfectives (Event time contained by reference time)
$\begin{array}{lllllll}\text { a. } & \begin{array}{ll}\text { À } & \text { ri } \\ \text { 3SG }\end{array} & \text { múkâl tâgn } & \text { tô } & \text { gbâr=1 } & \text { mun } & \text { ye, } \\ \text { cook.PRFV } & \text { time=DEF2 } & \text { REL } & \text { at }\end{array}$

| fù | gbâr | ye | ń | $\mathrm{n}^{\prime}$ | à | l $\varepsilon \grave{c}-\mathrm{n}$ | ín. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| DEM | time | at | 1SG | FIN | 3SG | watch-IMPF | PST |

She cooked tô while I watched.
literal: The time at which she cooked tô, at that time I was watching her. French: Elle a préparé du tô pendant que je la regardais. (L)

| b. | À | ri | sćbê |  | kecln read.PRFV | gbâr=1 |  | mun | ye, |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3SG | FIN | book |  |  |  |  | REL | at |
|  | fù | gbâr | ye | à | $\mathrm{lu}=\mathrm{u}$ | ri | láa |  | ín. |
|  | DEM | time | at | 3SG | wife $=$ DEF2 | FIN | slee |  | PST |

He read a book while his wife slept. literal: The time at which he read a book, at that time his wife was sleeping. French: Il a lu un livre pendant que sa femme dormait. (L)
context: He read the whole book while she was asleep (beginning after she fell asleep and finishing before she woke up)

Then, using only the Siamou phrases, I attempted to determine in what types of contexts these phrases were felicitous. In particular, I tried to determine whether or not utterances with a perfective verb were used for situations in which the event time was contained within the reference time (i.e. a Kratzer-type (1998) perfective, or a sub-type of Klein's (1994) perfectives), and whether or not utterances with an imperfective verb were used for events in which the reference time was contained within the event time. Note that for (26b), a context in which the man reads the whole book while his wife is asleep was accepted. This is consistent with it being a perfective utterance. However, I was not able to determine the felicity status of a context in which he began reading before she fell asleep and continued after she woke up.

For the most part I was not able to get consistent results for these utterances. Part of the issue may be my method of asking questions. Since French is not my first language, there is always the possibility of a misunderstanding based on my wording of questions. Another confounding issue may be the fact that the Siamou translations of the French phrases reverse the order of the main and subordinate clauses, so that the French phrase is literally She cooked to while I watched her and the Siamou phrase is literally The time at which she cooked tô, at that time I was watching her. Therefore, in one language the perfective aspect-marked phrase she cooked tô occurs in the main clause and in the other it occurs in the subordinate clause. The examples in (28) above are of perfective-marked verbs in subordinate clauses. The examples in (29) are the imperfective counterparts to the phrases in (28). Contextual information is not available for these examples either.
29. Imperfectives (Event time contains reference time)
$\begin{array}{lllllllll}\text { a. } & \text { À } & \text { ri } & \text { múkâl táay-n } & \text { ín } & \text { gbâr=̂ } & \text { mun } & \text { ye, } \\ & \text { 3SG } & \text { FIN } & \text { tô } & \text { cook-IMPF } & \text { PST } & \text { time=DEF2 } & \text { REL } & \text { at }\end{array}$

| fù | gbâr | ye | ń | $\mathrm{n}^{\prime}$ | à | lıc̀-n | ín. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| DEM | time | at | 1SG | FIN | 3SG | watch-IMPF | PST |

She was cooking tô while I watched.
literal: The time at which she was cooking tô, at that time I was watching her.
French: Elle préparait du tô pendant que je la regardais. (C)
$\begin{array}{lllllllll}\text { b. }{ }^{288} & \text { À } & \text { ri } & \text { sćb } \hat{\varepsilon} & \text { kecl-n } & \text { ín } & \text { gbâr=̂ } & \text { mun } & \text { ye, } \\ & \text { 3SG } & \text { FIN } & \text { book } & \text { read-IMPF } & \text { PST } & \text { time=DEF2 } & \text { REL } & \text { at }\end{array}$

| fù | gbâr | ye | à | lu=̂̂ | ri | láa-n | ín. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| DEM | time | at | 3SG | wife=DEF2 | FIN | sleep-IMPF | PST |

He was reading a book while his wife slept.
literal: The time at which he was reading a book, at that time she was sleeping.
French: Il lisait un livre pendant que sa femme dormait. (C)
In order to analyze these clauses, more careful (in person) elicitation is needed, as well as a greater understanding of how tense and aspect interact with clause structure.

### 8.2.3.2 The Syntactic Structure of Aspect

In chapter 3 I claimed that the Siamou aspect head adjoins to the right edge of the verb (30a). I also claimed that the aspect phrase is partitioned into a lower aspect head where perfective and imperfective aspect appear, and a higher aspect head where the other aspectual morphemes appear (30b).
30. a.


[^185]b.


However, although the data available at this time is consistent with these analyses, more research is needed to determine whether or not these claims will be upheld or disproven.

### 8.2.3.3 The Stativity Puzzle

It is a big deal to claim that a language has no stative main verbs. Although none have been found in Siamou at this point, care should be taken in future research to make sure that this is actually the case. I am quite sure that Siamou has no stative main verbs. However, I have not yet determined whether or not statives exist as auxiliary verbs. For example, non-verbal predicates have a default present interpretation (31a). To shift them to the past, the past tense particle in is added (31b). To shift them to the future, however, an inflected auxiliary verb teyn is required (31c-d).
31.

| a. | Klô | ń | to. |
| :--- | :--- | :--- | :--- |
|  | hunger | 1SG | to |
|  | I am hungry. |  |  |

literally: Hunger is to me.
French: J'ai faim. (C)
$\begin{array}{lllll}\text { b. } & \text { Klô } & \text { ń } & \text { to } & \text { ín. } \\ & \text { hunger } & \text { 1SG } & \text { to } & \text { PST }\end{array}$
I was hungry.
literally: Hunger was to me.
French: J'avais faim. (C)
c. Klô bè teyn-a ń to. hunger MOD become-PRSP1 1SG to I will be hungry.
literally: Hunger will become to me.
French: J'aurai faim.
d. Klô bè teŋn-b̂̂ ń to.
hunger MOD become-PRSP2 1SG to
I am going to be hungry.
literally: Hunger is going to become to me.
Je vais avoir faim.
The verb teyn inflected for perfective or imperfective aspect is not generally acceptable (32), but may be acceptable in particular contexts (33).
32.

| a. | * Klô | tè̀n | ń |
| :---: | :---: | :---: | :---: |
|  | hunger | become.PRFV | 1SG |
| b. | * Klô | texn-n | ń |
|  | hunger | become-IMPF | 1SG |

In this case, the perfective marked verb in (33a) has a stative interpretation ('I'm hungry') while the imperfective marked verb in (33b) has an inchoative interpretation ('I started to get hungry'). This is expected for this type of verb because inchoative verbs consistently have an inchoative interpretation when they are inflected for imperfective aspect. (See 5.2.2.10.) I would also expect that the perfective phrase in (32a) could have a past inchoative interpretation depending on the context. This remains to be determined.
33.

$\begin{array}{lllllllll}\text { b. } & \text { Ń } & \mathrm{n}^{\prime} & \text { à } & \text { ló } & \text { dé } & \text { ń } & \text { ki } & \text { s } \varepsilon \text { nn, } \\ & \text { 1SG } & \text { FIN } & \text { 3SG } & \text { say.PRFV } & \text { QUOT } & \text { 1SG } & \text { NFP } & \text { dance }\end{array}$

| klô | teqy-n | ń | to. |
| :--- | :--- | :--- | :--- |
| hunger | become-IMPF | 1 SG | to |

When I said I would dance, I started to get hungry.
French: Le moment que je decide pour danser, je commence à avoir faim. (C)
Another outstanding issue has to do with the class of verbs I called inchoatives. I claim that the result state reading that sometimes arises from these verbs is an entailment. However, I have not completely worked this out. I have also not yet figured out what exactly these inchoative verbs are. Bar-el (2005) has a class of verbs she calls inchoative states, which she argues have an eventive sub-event and a stative sub-event. However, these are not the same as Siamou inchoatives because inchoative states have a stative reading with imperfective aspect, as in (34), but Siamou inchoatives have an inchoative reading with imperfective aspect, as in (35).
34. Skwxwú7mesh imperfective of an inchoative state: stative reading (from Bar-el 2005:273)

```
chen t'a-t'ayak'.
1S.SG REDUP-angry
stative reading: I am angry.
```

35. Siamou imperfective of an inchoative: inchoative reading

| À | nun=1 | jes-n. |
| :--- | :--- | :--- |
| DEF1 | water=DEF2 | heat-IMPF |

The water is heating/heats.
Formally, Bar-el (2005) defines inchoative states as consisting of a BECOME sub-event and a stative sub-event $\left(\right.$ written $\left.\lambda \mathrm{e} . \exists \mathrm{e}_{1} \exists \mathrm{e}_{2}\left[\mathrm{e}=\left(\mathrm{e}_{1} \mathrm{Ue}_{2}\right) \wedge(\operatorname{BECOME}(\mathrm{P}))\left(\mathrm{e}_{1}\right) \wedge \mathrm{P}\left(\mathrm{e}_{2}\right)\right]\right)$. If inchoatives are like inchoative states but without the state part, they would be simply a become event (written $\lambda e .(\operatorname{BECOME}(\mathrm{P}))(\mathrm{e}))$. This sounds at first like it could be correct. According to Dowty's (1979) definition of the BECOME operator from (36), repeated from chapter 4, BECOME means to go from something not being the case to something being the case.
36. a. [BECOME $\varphi$ ] is true at I iff there is an interval $J$ containing the initial bound of I such that $\neg \varphi$ is true at J and there is an interval K containing the final bound of I such that $\varphi$ is true at K (Dowty 1979:140)
b. $\quad[\neg \varphi$ is true $]\{$ BECOME $\varphi$ is true $\}[\varphi$ is true $]$

However, this template $(\lambda e .(\operatorname{BECOME}(\mathrm{P}))(\mathrm{e}))$ is the same as the template Rothstein (2004) gives for achievements (See 4.3.3). We might argue that inchoatives are simply a type of achievement, but this does not seem completely accurate. For one thing, achievements are instantaneous, according to Smith (1997), but inchoatives do not seem to be. For example, the achievement reaching the top is instantaneous: at one moment you are not at the top and the next you are. It is not the same with at least some kinds of inchoatives.

One possible avenue to explore is the notion of degree achievements. Degree achievements are predicates that describe a change in gradable properties like coolness, length, and so on. For example, the process of heating water can take quite a while before it goes from being cold to being hot. Degree predicates are telic but they have some atelic characteristics (Dowty 1979, Hay et al. 1999). This seems to be the case for Siamou inchoatives as well. If you are heating water, and you stop at some point, you have heated the water. It does not have to reach a certain point of hotness before you can say you have heated it, as long as it is hotter than it was when you started.

Comparing properties of Siamou inchoatives to the properties given for other situation types in Table 8.3, it appears that they are most like accomplishments, since they are dynamic, telic, and durative. (However, the Siamou inchoatives that resemble degree achievements are likely also partly atelic, which means they are not the same as accomplishments in this respect.)

Table 8.3 Properties of Situation Types ${ }^{289}$

| Situation Type | Static/Dynamic | Telic/Atelic | Durative/Instantaneous |
| :--- | :--- | :--- | :--- |
| State | Static | Atelic | Durative |
| Activity | Dynamic | Atelic | Durative |
| Achievement | Dynamic | Telic | Instantaneous |
| Accomplishment | Dynamic | Telic | Durative |
| Inchoative State | Dynamic/Static | Telic (Atelic?) | Instantaneous/Durative |
| Inchoative | Dynamic | Telic (Atelic?) | Durative |

Rothstein's template for achievements is given in (37). Achievements contain both a do subevent and a culminate sub-event. This does not sound very much like inchoatives because

[^186]inchoatives do not really culminate. It is more of a beginning than an end.
37. achievement: $\lambda \mathrm{e} . \exists \mathrm{e}_{1} \exists \mathrm{e}_{2}\left[\mathrm{e}=\left(\mathrm{e}_{1} \mathrm{Ue}_{2}\right) \wedge(\mathrm{DO}(\mathrm{P}))\left(\mathrm{e}_{1}\right) \wedge(\operatorname{CUL}(\mathrm{P}))\left(\mathrm{e}_{2}\right)\right]$

To summarize, inchoatives resemble achievements (in that they have a BECOME predicate), but they are different than achievements because they are durative. They resemble accomplishments (in that they are dynamic, telic and durative), but they are different than accomplishments because they do not culminate. Perhaps inchoatives are made up of a do subevent and a become sub-event, as shown in (38). This question is a topic for future research.
38. inchoative: $\lambda \mathrm{e} . \exists \mathrm{e}_{1} \exists \mathrm{e}_{2}\left[\mathrm{e}=\left(\mathrm{e}_{1} \mathrm{Ue}_{2}\right) \wedge(\mathrm{DO}(\mathrm{P}))\left(\mathrm{e}_{1}\right) \wedge(\operatorname{BECOME}(\mathrm{P}))\left(\mathrm{e}_{2}\right)\right]$

### 8.3 What Siamou Teaches Us About Context

This dissertation makes reference to Matthewson's (2004) paper on semantic fieldwork methodology, which advocates against the use of translations as evidence in semantic fieldwork. Translations are seen as simply one clue among many. In my work, it is very important to use contextualized utterances to make semantic claims about Siamou. For example, I use utterances such as (39), repeated from 5.1.2.1, to claim that the Siamou perfective has a default past interpretation. This example shows that $y$ yn 'yawn. PRFV' has a strong default past interpretation and it is only compatible in a context that allows a past perfective reading. The utterance is infelicitous in a past imperfective context as well as a present progressive and present habitual context. This shows that Siamou perfectives as they are used in real-life, and not simply spoken out-of-the-blue, are interpreted as past.
39. a. À ri yen.

3SG FIN yawn.PRFV He yawned.
context 1: PAST PERFECTIVE
What did the baby do when he woke up?
context 2 (inappropriate): PAST IMPERFECTIVE
What was the baby doing when you got there?
context 3 (inappropriate): PRESENT PROGRESSIVE
What is the baby doing now?
context 4 (inappropriate): PRESENT HABITUAL
What does the baby do whenever he wakes up?

### 8.4 What Siamou Teaches Us About Word Order

This dissertation makes claims about the syntax of the Siamou aspect phrase. Siamou aspect is right-headed and it is divided two levels: an upper aspect phrase containing completive, stative, prospective 1 and prospective 2 , and a lower aspect phrase containing perfective and imperfective. These heads correspond to Liao's (2005) "temporal aspect" and "viewpoint aspect."

There are many unresolved issues regarding the syntax of the extended verbal projection as presented in 2.3.4 and repeated in (40). In particular, the relative ordering of the pre-predicate particles and the right-edge particles has not been clearly mapped out. Additionally, the location of the subject in the Siamou phrase has not been determined.
40.


### 8.5 Conclusion

This work on Siamou tense and aspect has served to document previously unknown patterns and reveal new puzzles to solve. Overall, we see that although superficially Siamou may look very different from other languages, the kinds of tools we have developed based on other languages are useful in the analysis of an unfamiliar tense/aspect system, and the distinctions we find in other languages are found in Siamou as well. In the end, Siamou does not really look all that different. In the ways that it is different, we can systematically say how it is different because of the tools that have been developed. There are still many open questions, some of which might be resolved by more data which would provide evidence to help us choose between different options. I hope that this thesis has contributed to this growing literature on the typology of tense and aspect and contributed to the understanding of the Siamou language in its own right.

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[^0]:    ${ }^{1}$ Throughout this thesis, I diacritics on examples indicate the following:

    * The utterance is ungrammatical.
    ?* There is uncertainty about the grammaticality of this utterance.
    \# The utterance is infelicitous. The utterance is ambiguous.
    $\%$ There is speaker variation in usage of this utterance.

[^1]:    ${ }^{2}$ Siamou people usually live in courtyards, especially in the villages. Courtyards are groupings of houses in an enclosed area that are shared by members of an extended family.

[^2]:    ${ }^{3}$ I also recorded two stories told by Souleymane Traoré, but these do not have a French translation.

[^3]:    ${ }^{4}$ See 2.2.2 for more information on the mid tone tone melody groups, $M, M(L)$ and $M(!H)$.

[^4]:    ${ }^{5}$ The M!HL tone melody group is not well understood. Its tone is not always the same, although it is usually some kind of rising-falling contour.

[^5]:    ${ }^{6}$ Table 2.1 is adapted from Nicolson (2010). I added parentheses around the rare consonants. I used IPA symbols throughout (including $/ \mathrm{j} /$ for the palatal approximant instead of $y$ ), and I changed the placement of some phonemes to match the IPA (such as putting $/ \mathrm{h} /$ in the glottal column, instead of the velar column).

[^6]:    ${ }^{7}$ See 3.6 for more information on irregular verbs.

[^7]:    ${ }^{8}$ Table 2.3 is adapted from Nicolson (2010). Nicolson (2010) also includes [ I ] and [ U ], which are allophones of $/ \mathrm{i} /$ and $/ \mathrm{u} /$ respectively, and $[ə]$, which only occurs in unstressed syllables.

[^8]:    ${ }^{9}$ The RNC sound is not listed in the chart above, partly because it is not certain how it is articulated, and also because it does not contrast with any other nasal consonant. It is the only nasal consonant that occurs in coda position. It is possible that all four nasals become the RNC when in a coda. This is something that needs to be looked into.
    ${ }^{10}$ i.e. the syllable nucleus and coda

[^9]:    ${ }^{11}$ The labels I use for the H, M, L and HL melodies are from the literature on Siamou tone. The M(L) tone melody is usually labeled $M^{*} . \mathrm{M}(!\mathrm{H})$ is usually labeled $M H$. The $\mathrm{H}!\mathrm{H}$ melody is usually labeled $H M$, and the $\mathrm{M}!\mathrm{HL}$ melody is usually labeled $M D$ (for modulated). Usually only the first seven melodies are mentioned because the eighth ( $\mathrm{M}!\mathrm{HL}$ ) is quite rare.
    ${ }^{12}$ The M!HL tone melody "group" encompasses a number of different complex contour tones, but 324 (or 323) is the most common (Nicolson p.c, Souleymane Traoré p.c).

[^10]:    ${ }^{13}$ Data in Table 2.7 is from Nicolson (2010).
    ${ }^{14}$ Data in Table 2.8 is gathered from the Siamou dictionary (Thiessen et al. n.d).

[^11]:    ${ }^{15}$ The H!H contour sounds longer than the HL contour, even though the pitch change is not as drastic. This has not been measured, however. Siamou speakers sometimes refer to this tone as "high drawn out." (Nicolson p.c)

[^12]:    ${ }^{16}$ Similarly, in two-syllable verbs where the first syllable has a M(!H) tone melody and the second syllable has a M tone melody, the tone of the verb is M!H-M (e.g. kpensel 'wait').

[^13]:    ${ }^{17}$ The vowel of the verb $f l i$ 'survive' changes from $i$ in the bare verb to $\varepsilon$ in the perfective. That is because this is an irregular verb. See 3.6 for more information on irregular verbs.
    ${ }^{18}$ The H tone of a HL verb is also lowered to ! H in contexts like ( $25 \mathrm{~b}-\mathrm{c}$ ). The following tones cause downstep: HL, $H!H, M(L)$, and $M(!H)$. The tones $H, M$ and $L$ do not cause downstep (Thiessen 2005, p.c).

[^14]:    ${ }^{19}$ Data in (25) is from Thiessen (2005).

[^15]:    ${ }^{20}$ Thiessen (p.c) analyzes the prospective aspect 2 suffix -bê as a L tone which gets its H tone from the preceding syllable. However, if that is so, it is not clear why the other $L$ tone suffixes do not pattern this way. For now I have analyzed it as HL.

[^16]:    ${ }^{21}$ Whether or not a possessive DP is actually a complement of $N$ is controversial. See Alexiadou et al. (2007) for discussion.

[^17]:    ${ }^{22}$ Yo-Lóe is my Siamou name. The first part $Y e$ is a birth order name referring to the first daughter of a woman. It also means 'sun' or 'day.' The second part $L \delta$ ' means 'white.' The ee suffix occurs in specific contexts such as when calling someone. Otherwise it is Ye-Lón. The reason I was not simply called $Y e$ was that I was living with Lillian who was also the oldest daughter. She was called Ye-Kpèml ('red Ye'). I was told that the colours usually refer to the time of day the person was born.

[^18]:    ${ }^{23}$ The pronoun yii is sometimes shortened to $y$ í.
    ${ }^{24} \mathrm{I}$ am not sure of the syntactic status of the definite particle $\grave{a}$, which is why I call it a definite particle rather than a definite article. See Elbourne (2005) for a discussion of pronouns that have the semantics of definite determiners.
    ${ }^{25}$ In other Kru languages, it is usually the first and second person pronouns that have the same segmental form, as in Vata where the first and second person singular pronouns are $\dot{n}$ and $\dot{n}$ and the first and second person plural pronouns are $a ̀$ and á (Marchese 1983:161).

[^19]:    ${ }^{26}$ Like many SOV languages, Siamou has many bound morphemes that attach to the right (suffixes and enclitics), but few morphemes that attach to the left (prefixes and proclitics) (Greenberg (1966), Marchese (1986)).
    ${ }^{27}$ Nicolson (2010) is the latest version of a paper that was originally drafted in 2004.
    ${ }^{28}$ As mentioned above in 2.1.3, Siamou coda consonants are limited to liquids (/r/ or $/ 1 /$ ) and the nasal consonant that is written $\eta$.

[^20]:    ${ }^{29}$ This looks somewhat similar to double determination in some Scandinavian languages (Norwegian, Swedish, etc) (see Julien 2003).
    ${ }^{30}$ The phrase in (43c) is grammatical if tiin is interpreted as the verb load (i).
    i. À bisháayn=̂̂ tíin

    DEF1 child=DEF2 load
    Load the child.
    French: Charges l'enfant. (C)
    contextual information: Tiin is the verb used for placing a load on a person's head to carry it (e.g. water, firewood, schoolbooks, laundry).

[^21]:    ${ }^{31}$ There may be some dialect variation that affects the definite suffix. Some dialects seem to leave off the suffix more frequently than others.

[^22]:    ${ }^{32}$ This example is from the Siamou dictionary (Thiessen et al. n.d).
    ${ }^{33}$ This is controversial. See Alexiadou et al. (2007) for discussion.

[^23]:    ${ }^{34}$ The sequence in (49) however, is acceptable in a sentence like (i).

[^24]:    ${ }^{35}$ Surface tones are given in parentheses.

[^25]:    ${ }^{36}$ This looks like a perfective with a present interpretation. Perhaps "hearsay" is another context in which perfectives can have a present interpretation. See 5.1.2.2 for more information on perfectives with a present interpretation.
    ${ }^{37}$ This is the same as the Siamou phrase for hail, but in this context, it refers to snow.

[^26]:    ${ }^{38}$ There are other when-type words that also occur in a pre-predicate position. For example, mùkar (when for future events) and müfon (when for past events). The particles bè and $k i$ (and maybe even $r i$ ) can form iffwhen-type clauses as well, depending on context.
    ${ }^{39}$ One might argue that the copula is a verb. However, if it is, it is different from other Siamou verbs in that it does not inflect for aspect. It also has a different segmental melody, since it consists of only a vowel nucleus and has no onset, which is not the case for any other Siamou verb.

[^27]:    ${ }^{40} \mathrm{I}$ added a high tone marker to wú ('wash') to match current orthographic conventions.

[^28]:    ${ }^{41}$ If the subject is third person singular, it only occurs in the first clause, not the following clauses. First and second person subjects are overt in both clauses (as in (i)). I am not sure what happens with third person plural pronouns.
    i. Ń bûr kùn ń ki nun gbe.

    1SG bread eat.PRFV 1SG NFP water drink
    I ate bread and drank water.
    French: J'ai mangé du pain et j'ai bu de l'eau. (C)

[^29]:    ${ }^{42}$ A balaphone is a musical instrument similar to a xylophone. See Belliard (2014).
    ${ }^{43} \mathrm{Ki}$ can occur in some other constructions that look like they contain inflected verbs, but which may actually be nominalizations. These forms are not well understood at this time. Example (i) contains the perfective and a suffix meaning something like already. Example (ii) contains an imperfective nominal with another suffix that may express progressive aspect, and another suffix meaning look!

[^30]:    ${ }^{44}$ In Siamou, postpositional phrases with se 'at' are used to express wanting.
    ${ }^{45}$ Tô is the Jula word for the staple meal in Burkina Faso: a thick mass of cooked flour, usually corn flour, served with various sauces. The word tô is widely used in Burkina French as well.

[^31]:    ${ }^{46}$ The completive suffix was initially accepted in this type of utterance (with a definite object), but later rejected. More work needs to be done to determine how marginal these utterances are.

[^32]:    ${ }^{47}$ The completive suffix was initially accepted in this type of utterance (with a definite object), but later rejected. More work needs to be done to determine how marginal these utterances are.

[^33]:    ${ }^{48}$ Occasionally bè + IMPF is accepted in a main clause. À bè blaàn was accepted as a main clause meaning 'He's coming for sure.' or 'He's going to come.' This may be restricted to verbs of coming and going. Also there are a few examples in which bè + STAT utterances have a 'managed to' reading.
    ${ }^{49}$ Siamou has traditional birth order names. Fòn is the name given to the fourth son of his mother.

[^34]:    ${ }^{50}$ I do have an example of fon occurring with the perfective in a counterfactual (i), but usually this combination was deemed ungrammatical.

[^35]:    ${ }^{51}$ This example is from an earlier version of the Siamou translation of Exodus 4:8 (Traoré et al. 2014) in which God is telling Moses that if the Egyptians do not believe the first miraculous sign he performs, they may believe the second. The translators later corrected it to the phrase in (i) which makes two changes to the original. First, it removes the ri, which made the phrase too "heavy" (Souleymane Traoré p.c) Second, the verb was changed from tena (believe), which is a loan word from Jula, to the more traditional Siamou word hlo-ja (believe).

    | i. | . yì | $b^{\prime}$ | à | níin-ton=î | hlo-ja-a |
    | :--- | :--- | :--- | :--- | :--- | :--- |
    |  | 3PL | MOD | DEF1 | two-ORD=DEF2 | truth-grab-PRSP1 |

    . . .they may believe the second
    ${ }^{52}$ From Exodus 2:8, in which Pharaoh's daughter accepts the offer of Moses' older sister to go find a nursemaid for the baby Moses, and she goes and gets their mother (Traoré et al. 2014).
    ${ }^{53}$ From Exodus $4: 18$ in which Moses asks his father-in-law for permission to go see his people in Egypt. (Traoré et al. 2014).

[^36]:    ${ }^{54}$ To complete the paradigm, an example is needed in which both instances of $i n$ follow bo. Such an example is predicted to be unacceptable because the most preferred order is in bo.
    ${ }^{55}$ The bo/be alternation may just be a phonological change, but if so, it is the only one of its kind that I am aware of in Siamou. It may also be a different negation particle which also occurs in negative imperatives (i).

[^37]:    ${ }^{56}$ Map prepared by UBC Geography.

[^38]:    ${ }_{58}^{57}$ Siamou names for towns are given in parentheses.
    ${ }^{58}$ Map prepared by UBC Geography.

[^39]:    ${ }^{59}$ Person (1966) cites Delafosse (1904) as the source of the data with unmarked tone.

[^40]:    ${ }^{60}$ Plawi (or Plaoui) is spoken in Ivory Coast (Person 1966). Marchese (1983:115) lists it as a Grebo dialect.

[^41]:    ${ }^{61}$ In the examples from Traoré (1985) given here and below I have kept the orthography the same, but I have updated the glosses to be consistent with the rest of this thesis.

[^42]:    ${ }^{62}$ I made a few orthographic changes when replicating Traore's data. First of all, he marks mid tones with a flat line above the vowel. I have left mid tones unmarked. Secondly, he writes the phoneme $/ \mathrm{I} /$ as S whereas I write it as $s h$. Also, I have changed the morpheme glosses from French to English.

[^43]:    ${ }^{63}$ The scientific name for $d a h$ is hibiscus sabdariffa. It is called roselle in English (Thiessen p.c).

[^44]:    ${ }^{64}$ I think the lô is a rain ceremony, but $I$, being uninitiated, had to stay home, so I did not see any of it. A friend described it, saying that it involved whirling a piece of metal of a particular shape around in the air.
    ${ }^{65}$ Tabaski is the West African term for a Muslim holiday called Eid al-Adha in Arabic.

[^45]:    ${ }^{66}$ In Siamou I argue for an S Part OV word order. However, since Siamou does not contrast auxiliaries and particles like other Kru languages, this is essentially the same thing as saying it has an S Aux OV word order.

[^46]:    ${ }^{67}$ The examples in Table 2.30 are from Marchese (1983:149), originally from Duitsman (1981).
    ${ }^{68}$ The examples in Table 2.31 are from Marchese (1983:151), originally from Bentinck (1975).
    ${ }^{69}$ The examples in Table 2.32 are from Marchese (1983:153), originally from Gratrix (1975).
    ${ }^{70}$ The examples in Table 2.33 are from Marchese (1983:154), originally from Duitsman (1981)

[^47]:    ${ }^{71}$ Used by permission, © SIL International, Marchese (1986:4). Further redistribution prohibited without permission.

[^48]:    ${ }^{72}$ Used by permission, © SIL International, Ethnologue: Languages of the World, $17{ }^{\text {th }}$ Edition. Further redistribution prohibited without permission.

[^49]:    ${ }^{73}$ The information that I have about tone in Siamou is mainly from three sources: a paper on tone by Thiessen (2005), the Siamou dictionary, available as a set of files to use with the SIL program, Toolbox (Thiessen et al. n.d), and a short unpublished booklet of Siamou grammar put together by Lillian Nicolson, Souleymane Traoré, Maminata Coulibaly, Lassina Sanogo, and Mamadou Traoré (Nicolson et al. n.d). However, the analysis in this chapter is my own. As an example of what I mean, the information about $M(L)$ verbs having a $L$ tone in the perfective, and $\mathrm{M}(!\mathrm{H})$ tones having a M tone in the perfective can be obtained from all three sources above (as well as from my own data), but the claim that the perfective is a L tone suffix is my own. All data in this chapter that is not clearly referenced is from my own elicitation.
    ${ }^{74}$ See 2.2 for more information on Siamou tone melodies.

[^50]:    ${ }^{75}$ Data on the forms in Table 3.2, except for (h) is from Nicolson et al (n.d). Glosses and data for (h) are from Thiessen et al. (n.d).
    ${ }^{76}$ The form $g b \varepsilon ́ \varepsilon l$ changes to $g b \varepsilon ́ l$ with the completive suffix. However, this reflects a change in tone and not necessarily a change in vowel length. Siamou orthographic conventions mark a $\mathrm{H}!\mathrm{H}$ tone as $\dot{V} V$ and a H tone as $V$. See Section 1.2.5 for more information.

[^51]:    ${ }^{77}$ The orthographic conventions do not always allow the tone to be precisely specified with accent marking. Therefore, the tone information in Table 3.3 not only makes the information in Table 3.2 easier to read, but also sometimes provides more precise tone information.

[^52]:    ${ }^{78}$ A careful observer will note that the particle $r i$ that occurs in (3a) does not occur in (2a). This particle is frequently dropped in casual speech with no effect on the meaning of the utterance. See 2.3.4.2.3.

[^53]:    ${ }^{79}$ Data for Table 3.4, except for (h) is from Nicolson et al. (n.d). Data for (h) are from Thiessen et al. (n.d).

[^54]:    ${ }^{80}$ Bare verbs with $\mathrm{M}(\mathrm{L})$ and $\mathrm{M}(!\mathrm{H})$ tone melodies both have floating tones which are usually unpronounced. Therefore, verbs with these two tone melodies both usually surface as M tone. See 2.2.1.4 and 2.2.1.5 for more information.

[^55]:    ${ }_{82}^{81}$ See Yip (2002) for information on tone systems.
    ${ }^{82}$ The floating L tone of the verb may play a role in this as well. I look at this in 3.1.3.5.
    ${ }^{83}$ This means that the first syllable of hloja has the tone melody M, and the second one has the tone melody M(L).

[^56]:    ${ }^{84}$ Data on the forms in Table 3.6, except for (h), is from Nicolson et al (n.d). Glosses and data for (h) are from Thiessen et al. (n.d).

[^57]:    ${ }^{85}$ However, the $\mathrm{M}(\mathrm{L})$ group has a floating $L$ tone, and the $\mathrm{H}!\mathrm{H}$ group might have a $L$ tone in it as well because sometimes downstepped tones are understood to be caused by floating L tones (Pulleyblank 1986). Perhaps an analysis of this sort could be attempted, but not here and not now.

[^58]:    ${ }^{86}$ See 2.1 for a description of this nasal consonant, which only occurs in coda position.
    ${ }^{87}$ See 3.2.2 for more information about the segmental defectiveness of the perfective and imperfective.
    ${ }^{88}$ The imperfectives in $(15 \mathrm{~b}-\mathrm{c})$ are marked as a ML tone, but I am claiming they are M tone. Let me explain: Imperfective forms of $\mathrm{L}, \mathrm{M}$ and $\mathrm{M}(\mathrm{L})$ verbs have a M tone in the imperfective. However, for unknown reasons this tone falls slightly not quite to L, but maybe halfway (Souleymane Traoré p.c). The Siamou orthographic convention is to write these imperfectives with two vowels and mark the second vowel as L (e.g. duinn 'ask.IMPF'). This convention serves to distinguish verb forms from each other that would otherwise be written exactly the same. The L tone marking distinguishes these imperfectives from imperfectives of $\mathrm{M}(!\mathrm{H})$ verbs, which are written with two vowels but no L tone (e.g. diin 'extinguish.IMPF'). The double vowel distinguishes these imperfectives from bare verbs that have a surface M tone and end in a nasal consonant (e.g. din 'extinguish'). This information is also given in 1.2.5.

[^59]:    ${ }^{89}$ Data on the forms in Table 3.8, except for (h), is from Nicolson et al. (n.d). Glosses and data for (h) are from Thiessen et al. (n.d).
    ${ }^{90}$ The imperfective of $\eta m \varepsilon$ is irregular ( $\eta m \varepsilon \grave{\varepsilon} l n$ ) since it contains an /l/ in the coda, which is not part of the bare verb.

[^60]:    ${ }^{91}$ Data on the forms in Table 3.10, except for (h), is from Nicolson et al. (n.d). Glosses and data for (h) are from Thiessen et al. (n.d).

[^61]:    ${ }^{92}$ Data on the forms in Table 3.12, except for (h), is from Nicolson et al. (n.d). Glosses and data for (h) are from Thiessen et al. (n.d).

[^62]:    ${ }^{93}$ Kayne (1994) argues for the universal order specifier-head-complement. For simplicity, I am only looking at the head-complement order and not the specifier.

[^63]:    ${ }^{94}$ For simpilicity, the diagram in (23) leaves out the aspectual inflection of the verb $d i$ and uses only the bare verb form di. Later in 3.2.1.4 I show the structure of the aspect phrase as well.
    ${ }^{95}$ I do not have any data to show the order of adjective phrases. It may be that Siamou does not have transitive adjectives.

[^64]:    ${ }^{96}$ Originally from Thomann (1905).

[^65]:    ${ }^{97}$ See Cinque (1999) for a proposal of a very fine-grained structure of IP in which every type of tense, aspect and modality has its own phrase.
    ${ }^{98}$ Liao (2005) also lists neutral aspect as a kind of viewpoint aspect and simple aspect as a type of temporal aspect, but these are not included in the above discussion.
    ${ }^{99}$ Material in Table 3.18 borrows heavily from Liao (2005:7).

[^66]:    ${ }^{100}$ While I have not analyzed the completive and stative suffixes, preliminary results indicate that they resemble perfect aspect in some ways (see, for example (59) in chapter 6). This supports placing them in the category of temporal aspect.

[^67]:    ${ }^{101}$ From what I can tell, perfective and imperfective can not stack with each other. However, I am not sure exactly what this stacking would look like, since both of them are mainly suprasegmental. I tested forms that had ML tone and a nasal coda, as well as forms that had a LM tone and a nasal coda. The former was hard to get accurate judgements on because of the fact that many imperfectives are written as ML. The latter was never accepted.

[^68]:    ${ }^{102}$ The perfective form $y \grave{c}$ is correct for the verb $y \grave{c}$ ('sell'), but not for the verb $g b \varepsilon$ ('drink'). The same is true for the form $y \grave{e}-e ̀$ in (63c).

[^69]:    ${ }^{103}$ I think táayn is a nominal in (65) because it is followed by the word $g b>$ and is part of the subject of the verb. However, this needs to be verified. Siamou nominals are often identical or nearly identical to their verbal counterparts.

[^70]:    ${ }^{104}$ The fact that the imperfective in (65) is a nominal form is interesting because only the perfective and imperfective can be nominalized, as far as I know. This would automatically restrict the set to $\mathrm{AspP}_{1}$.

[^71]:    ${ }^{105}$ Marchese (1986) states that the perfective is the same as the stem and gives examples using the perfective where the gloss does not show any perfective marking.

[^72]:    ${ }^{106}$ In the Kru examples, unless otherwise indicated, a line over the vowel indicates M tone.
    ${ }^{107}$ In Kouya, tone is marked word-initially. An apostrophe (') marks high tone and a hyphen (-) marks low tone. To avoid ambiguity, I marked a morpheme break by $=$ in (69a) rather than by a hyphen.

[^73]:    ${ }^{108}$ Data in Table 3.24 is from Innes (1966:28), Auer (1870:24-25) and Thomann $(1905: 82-83,190)$ (as seen in Marchese (1986:40-41, 44).

[^74]:    ${ }^{109}$ The vertical line above the vowel represents an upper mid tone.
    ${ }^{110}$ The tone marking in Table 3.26 (i) is a mid-low tone.
    ${ }^{111}$ The information in Table 3.26 about Koyo is from Lewis et al. (2013).

[^75]:    ${ }_{112}^{112}$ For the examples in (70b-c), the form of the bare verb was not given.
    ${ }^{113}$ The fact that the bare verb is $k u ́ i$ is extracted from the examples in $(67 \mathrm{c}-\mathrm{d})$, above.

[^76]:    ${ }^{114}$ A HM contour is marked in (71b) with two stacked tones on the same vowel ( $k k^{\prime}$ ). This is different than in the Siamou orthography where it would be written with a vowel with H tone marking followed by an unmarked vowel, as follows: kúu.

[^77]:    ${ }^{115}$ The nasal consonant can be very hard for a non-native speaker to hear. Also, it may not occur in all Siamou dialects (Traoré 1985).

[^78]:    ${ }^{116}$ The Vata examples in Table 3.28 are from Vogler (1974:395), discussed in Marchese (1986:51).
    ${ }^{117}$ The Siamou examples in Table 3.28 are originally from Prost (1964), discussed in Marchese 1986:51). The double vowels of the current forms are an orthographic convention. See 1.3.5.
    ${ }^{118}$ See 3.6 for more information on Siamou irregular verbs.

[^79]:    ${ }^{119}$ Bo occurs sometimes but not always in combination with another particle wo. See 2.3.4.2.4 for more information on this particle.

[^80]:    ${ }^{120}$ Recall that both the $M(L)$ and $M(H)$ tone melody groups usually surface as mid tones. The fact that the perfective of Table 3.31 c is low tone $(f l i)$ and the perfective of Table 3.31d is mid tone $(f l \varepsilon)$ is predicted by the fact that the former belongs to the $\mathrm{M}(\mathrm{L})$ tone melody group while the latter belongs to the $\mathrm{M}(\mathrm{H})$ tone melody group. The vowel change ( $i$ to $\varepsilon$ ) however, is not predictable and must be learned.

[^81]:    ${ }^{121}$ Column 3 is the sum of columns 5 and 7 , and column 4 is the sum of columns 6 and 8 .

[^82]:    ${ }^{122}$ In Siamou orthography, $\eta$ indicates nasalization on the preceding vowel, and not a consonant, so the verbs in Table $3.33 \mathrm{j}-\mathrm{n}$ are all open syllables.
    ${ }^{123}$ Vowels following nasal onsets are nasalized, but since this is predictable, it is not marked in the orthography. Therefore this verb patterns with the nasalized verbs in Table 3.33j-1.
    ${ }^{124}$ In Kru, the perfect marker is usually of the form $/ \mathrm{ja} /$ or something similar (Marchese 1986:69). The $/ \mathrm{j} /$ in the perfective of these verbs could possibly be connected to that.

[^83]:    ${ }^{125}$ The verbs in (Table 3.37k-n) all have a coda $r$ while none of the other verbs in this table do. In these verbs (but not the others), $\mathrm{i} / \mathrm{is}$ pronounced [ I ], and this is likely related to the fact that they pattern differenctly in the perfective and imperfective forms (Paul Thiessen p.c).
    ${ }^{126}$ The verb form dénno is unusual. It often acts as the perfective of the verb don (go). However, the actual (regular) perfective of don is dòn. There are rules governing the use of dòn versus dénno which I am not very familiar with. However, the first form occurs more in negative clauses and the latter occurs more in affirmative clauses. The verb form dénno patterns differently in the grammar as well. For example, dénno can occur with the non-finite particle $k i$, which no other perfective can do, suggesting that it is probably not a perfective, although it functions as one in many cases. It is possible that dénno is multi-morphemic. Siamou has a suffix -no which means something like 'go', and this suffix can attach to some other bare verbs. I am not sure what the dén would be in that case.
    Throughout this thesis, I have glossed dénno as go.PRFV?. The ? indicates that I am not sure of its status.

[^84]:    ${ }^{127}$ There is more than one way in which two time intervals may coincide. This allows us to distinguish perfective and imperfective aspect. See 4.2.1.

[^85]:    ${ }^{128}$ This view about default temporal reference is not unproblematic because it relies on utterances taken out of context, but in the real world, utterances are always in context (see Tonhauser 2015 for discussion).

[^86]:    ${ }^{129}$ The example in (14a) is actually a past tense, which often (but not always) has a perfective reading. Also, the English imperfective in (14b) is actually a progressive, which is a specific type of imperfective with special meaning elements. However, for the purpose of this illustration, they will do.

[^87]:    ${ }^{130}$ This seems odd at first, but if $R$ completely contains $E$, this means that $R$ is partly contained within $E$. In other words, if $E$ is completely within the bounds of $R$, then part of $R$ is within the bounds of $E$.

[^88]:    ${ }^{131}$ If Klein (1994) stated the relations in terms of E to R rather than R to E, he would have obtained the same set of diagrams as those shown in (13), but they would not be grouped in the same way. By doing it as he did, he made it possible for one label ( R AT E) to include all three diagrams that can be called perfective.

[^89]:    ${ }^{132}$ Smith (1997) added semelfactives to that list, but these are often left out, or considered to be a sub-type of activities (Rothstein 2004). Semelfactives are instantaneous atelic events. Some examples of semelfactive predicates are knock on the door, sneeze, and blink. They often have an iterative interpretation, which means, for example, that knocking on the door is often understood to refer to more than one knock.

[^90]:    ${ }^{133}$ The same real-life situation may be presented as more than one situation type. For example, saying the bird was flying or the bird was in flight both refer to the eventuality of flying, but the first views it as an activity, involving change over time, while the second views it as static (Smith 1997). Therefore it is not the event itself that is classified as static or dynamic, but the predicate that refers to that event. Nevertheless, some events lend themselves more easily to a static classification, while others are more likely to be categorized as dynamic.

[^91]:    ${ }^{134}$ The definition in (29) is just to give an idea of what the operator BECOME does. Dowty does not use events so his definition can not actually fit with Rothstein's (2004) templates.

[^92]:    ${ }^{135}$ with termination entailments
    ${ }^{136}$ with culmination entailments
    ${ }^{137}$ with culmination entailments

[^93]:    ${ }^{138}$ In contrast, imperfectives often have a default present interpretation (Smith 1997), as I discuss in 4.4.2.1.
    ${ }^{139}$ If we take the present to be an instantaneous moment, then the bounded event constraint might not even be necessary, but would fall out naturally (see Bennett and Partee (1978) and Reis Silva and Matthewson (2007).
    ${ }^{140}$ This constraint does not prevent a perfective from being interpreted as a future event. However, future interpretations are usually marked and are not arrived at by default. Smith (2008) uses the Simplicity Principle of Interpretation to rule out future interpretations.

[^94]:    ${ }^{141}$ I am not saying that languages cannot have more than one past tense morpheme. Many Niger-Congo languages make distinctions between different degrees of pastness, such as remote past and recent past (Nurse 2008). In the absence of such a contrast, we only expect one past tense marker.
    ${ }_{142}$ The past morpheme, in contrast, can co-occur with the imperfective, as I show in 4.6.2.4.
    ${ }^{143}$ Although see Comrie 1976:31-32 for one case where two aspectual categories labeled perfective and imperfective do co-occur.

[^95]:    ${ }^{144}$ An entailment is something that is required for an utterance to be considered true.
    ${ }^{145}$ A culmination entailment must have a termination entailment because ending at a natural endpoint is still ending.
    ${ }^{146}$ See, for example, Thai (Koenig and Muansuwan, 2000, Bar-el 2005).

[^96]:    ${ }^{147}$ Note that the termination/culmination entailments in English may be weaker in the absence of adverbial modifiers like all night (i-iii).
    i. He danced
    ii. ?He danced and he's still dancing.
    iii. ?He danced and he's not finished dancing yet.
    ${ }^{148}$ Activities are not always considered felicitous with a not finished yet clause. See footnote 149.

[^97]:    ${ }^{149}$ It is possible that (36b) is infelicitous for another reason. The but I didn't finish clause is a test for a culmination entailment, not a termination entailment. Therefore, the fact that the utterance is infelicitous might not be due to the fact that it has a termination entailment but rather because this type of event can not have a culmination entailment at all. As an activity, it has no natural endpoint and therefore cannot culminate. It might just be odd to talk about finishing an activity, which can not really be finished, but just ends.
    ${ }^{150}$ I do not know whether or not achievement or activity verbs in Thai have termination entailments.

[^98]:    ${ }^{151}$ Table 4.11 is from Bar-el (2005:224). She lists a fourth pattern, observed in Hindi, in which accomplishments sometimes have culmination entailments and sometimes not. That is, sometimes they pattern with English and sometimes with Thai.
    ${ }^{152}$ The idea for subtest c is from the literature on the imperfective paradox. See Dowty (1977) and Landman (1992).

[^99]:    ${ }^{153}$ In some cases, such as (39c), the event may be interpreted as immediately following the time denoted by the punctual adverb (a sequential reading). I do not look at sequential readings in this thesis.

[^100]:    ${ }^{154}$ From Rothstein (2004:25), cited in Bar-el (2005:166).
    ${ }^{155}$ This is not the same kind of initial point that I have been talking about, where the initial point of perfectivemarked events is understood to be contained within the reference time. Bar-el (2005) is talking about initial points that are part of the template of a particular event type.
    ${ }^{156} \mathrm{I}$ am ignoring the discussion of stative verbs because there are a number of complicating factors. Skwxwú 7 mesh , which is the language Bar-el is mainly concerned with, has a different type of stative which she calls inchoative states, and Siamou might not have stative verbs at all.
    ${ }^{157}$ Examples (41a-b) are from Bar-el (2005:141), originally from Smith (1997:42-46). Example (41c) is from Bar-el (2005:144).
    ${ }^{158}$ For some English speakers, myself included, at noon may be interpreted as the noon hour (from 12:00PM to 1:00PM), and is therefore not a punctual adverbial. Replacing at noon with at 2:00 gives us a non-ambiguous punctual adverbial.

[^101]:    ${ }^{159}$ It is an interesting question, however, why some accomplishments can have an inceptive reading and others can not. Another example of an accomplishment with an inceptive reading is At 2:00 the old man counted his money.
    ${ }^{160}$ If a morpheme is already known to be a perfective, this test may also show indirectly that an utterance has a (grammatical aspect) initial point because if it is perfective, it can not lack both initial and final points. However, this is not very helpful because we are testing final points to determine if something is a perfective in the first place. ${ }^{161}$ Note that Bar-el (2005) is looking at initial points that are given by lexical aspect (i.e. the situation type has a BECOME operator). I am looking at initial points that are given by grammatical aspect (i.e. the beginning of the event is inside the reference time).

[^102]:    ${ }^{162}$ with termination entailments
    ${ }^{163}$ with culmination entailments
    ${ }^{164}$ with culmination entailments
    ${ }^{165}$ Imperfective aspect often has a modal component (Dowty 1979), but I will not be covering that part of its meaning.

[^103]:    ${ }^{166}$ Being the first test does not mean it is the most important. I have set up the tests in an order that parallels the tests for perfective aspect as much as possible.
    ${ }^{167}$ Prost (1964) originally labeled the Siamou imperfective as a present tense.
    ${ }^{168}$ Sometimes a present tense is used to describe non-present contexts (e.g. the historical present). Therefore, being acceptable in such a context is not in itself conclusive evidence that a morpheme is not a present tense. However, this diagnostic is intended to be taken together with the other pieces of evidence.

[^104]:    ${ }^{169}$ This figure is adapted from Comrie (1976:25).
    ${ }^{170}$ Although, see Jóhannsdóttir (2011) for exceptions to this generalization. For example, in English the progressive is sometimes used with stative verbs (or in habitual contexts) for special effect.

[^105]:    ${ }^{171}$ The type of sentence in (51a) is acceptable when it is used specifically to contrast with another time during which the subject did not have that habit. See Palmer (1988) and Jóhannsdóttir (2011).

[^106]:    172 with termination entailments
    173 with culmination entailments
    174 with culmination entailments

[^107]:    ${ }^{175}$ No appropriate context for the utterance in (7a) is available.

[^108]:    ${ }^{176}$ Hearsay-type utterances might also have a present interpretation with a perfective. See example (59) in 2.3.4.1.
    ${ }^{177}$ This is a grammatical aspect category that has been labeled stative in Siamou. It does not refer to lexical statives.

[^109]:    ${ }^{178}$ See 3.2.2.3 for a discussion of something that somewhat resembles aspect stacking, but which I conclude is not.
    ${ }^{179}$ Since this data was gathered by email, Siamou orthographic conventions come into play. Placing the mid tone before the low tone (vv̀) would look too much like the imperfective, which is written as a mid tone followed by a low tone (as shown in 14b). This low tone marking is an orthographic convention. It marks a mid tone that lowers slightly, not an actual low tone.
    ${ }^{180}$ In 5.1.2.8 I show that $-L$ suffixed verbs can also refer to events that have an inceptive interpretation, which is only predicted by Klein's (1994) perfective.

[^110]:    ${ }^{181}$ Dah is the Jula word for hibiscus. It is also commonly used in Burkina French.

[^111]:    ${ }^{182}$ For (15c), I was not able to verify that the following context was inappropriate: He started painting the house before I got there and was still painting when I left. However, the context given for ( 15 c ) was definitely accepted.

[^112]:    ${ }^{183}$ English does not have a true perfective, but the past tense is often interpreted as perfective.

[^113]:    ${ }^{184}$ These last two may be sequential rather than inceptive, e.g. (21d-e). See 8.2.3.1 for a brief discussion of sequential readings of the perfective.

[^114]:    ${ }^{185}$ with termination entailments
    ${ }^{186}$ with culmination entailments
    187 with culmination entailments

[^115]:    ${ }^{188}$ This is an observation based on some of the Siamou stories I have recorded. I have not investigated this thoroughly.
    ${ }^{189}$ The fact that imperfectives have a past interpretation without in in narratives is weak evidence by itself because it is possible for present tense to be used in past narratives, as in English (e.g. So yesterday I meet this guy, and he wants to sell me 80 acres of farmland [...])

[^116]:    ${ }^{190}$ The low tone marking in (31b) is part of the Siamou orthography. It is not a true low tone, but simply marks a mid tone that lowers slightly.

[^117]:    ${ }^{191}$ In elicitation, I was not able to find a specific situation in which the utterance in (32a) could be uttered. The consultant was unsure about the following context: I started harvesting the corn before yesterday. Last night I hadn't finished yet, and this morning I continued harvesting. The reason given for not accepting it was that the context is too specific about start and end times. (See the consultant comment for (32a).) This actually helps to confirm imperfective aspect because imperfectives do not have beginning points or endpoints within the reference time, and it is expected that they would not be clear. This same pattern happens throughout (32). For (32b) the consultant additionally states that it is understood from the context that the women are not shelling hibiscus this week. This is also expected because the past tense particle ín often induces a cessation implicature. See 6.4.3.

[^118]:    ${ }^{192}$ I have two questions about example (32e): 1. Why does it contain the particle $k i$ (here: $k^{\prime}$ ) when the previous one does not? 2 . Why is $k i$ followed by the perfective, which generally is not allowed?

[^119]:    ${ }^{193}$ See Deo (2009) for an analysis that unifies the imperfective and progressive.
    ${ }^{194}$ An imperfective verb with the particle $r i$ can have an in-progress reading, as in (37a, c-d), or a habitual reading (discussed in 5.2.2.9). See 2.3.4.2.6 for information about the locative particle $f \circ n$, which makes the progressive reading of imperfective more salient than the habitual reading.

[^120]:    ${ }^{195}$ Imperfectives may have a habitual interpretation, but Siamou has another way of expressing habituals using a sequence of bare verbs, as in (i).

    | i. | À | kpako | k ¢́ | nì | tè | à | lu=û | to. |
    | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
    |  | 3SG | coconut | break | and | give | DEF1 | wife=DEF2 | to | He breaks the coconut for his wife.

    context: This is his habitual behaviour.
    It is not possible to express habitual meaning with only one bare verb (ii).

[^121]:    ${ }^{196}$ The adjective red is the same as the perfective of the verb redden. This is likely not a coincidence.
    ${ }^{197}$ This French translation was provided by the consulant (C). I'm not sure what this is referring to. Perhaps it is saying that a girl has a growth spurt when she hits puberty.

[^122]:    ${ }^{198}$ For Siamou, the only information that appears to have been available was Prost (1964), which labels the perfective and imperfective past and present respectively.
    ${ }^{199}$ I was not able to find negative data to show that a present interpretation is not acceptable for the examples in (40) and that a past interpretation is not acceptable for the examples in (41).

[^123]:    ${ }^{200}$ Saunders comments that the "base tone" of $z a$ is low, which means it is perfective.

[^124]:    ${ }^{201}$ The \& symbol indicates ambiguity.
    ${ }^{202}$ Example (44b) is taken from Marchese (1986:39).
    ${ }^{203}$ No negative data showing the infelicity of the habitual reading for progressive verb forms is available.

[^125]:    ${ }^{204}$ It may be argued that a copula is a verb. However, if it is, it is unlike any other verb in Siamou. First of all, it does not inflect. Secondly, it begins with a vowel, which is very rare for any morpheme in Siamou, and impossible for a Siamou verb. See 2.1.3 for a list of Siamou vowel-initial morphemes. (Note that often an epenthetic consonant, $r$ is inserted in onset position when $\supset$ follows a vowel. Following a nasal, $\lrcorner$ becomes $n っ$.)

[^126]:    ${ }^{205}$ These verbs resemble Bar-el's (2005) "inchoative states" in some ways, but they differ in how they are interpreted when inflected for imperfective aspect. See 4.3.4 for more details about inchoative states.

[^127]:    ${ }^{206}$ Siamou passives are formed by taking a transitive predicate, deleting the subject, and raising the object to subject. See 3.2.1.3.3.

[^128]:    ${ }^{207}$ I am not entirely certain why the result state reading is not available for imperfectives. One possibility is that if the end of the event is outside the reference time, the becoming event has not been completed, so there is no result state entailment.

[^129]:    ${ }^{208}$ Example (62) is from Déchaine (1993: 577).

[^130]:    ${ }^{209}$ Eventive predicates with a generic NP object have a present interpretation, however (Déchaine 1993).

[^131]:    ${ }^{210}$ Saunders comments that the "base tone" of $z a$ is low, and that this means it is perfective.

[^132]:    ${ }^{211}$ Often utterances with a remoteness implicature were translated into French as past perfects. However, as I show in 6.4.1, these Siamou utterances do not mark past perfects.

[^133]:    ${ }^{212}$ Homophony refers to two or more words that have the same pronunciation but different meanings. A similar term, homonymy, refers to words that have the same pronunciation and the same representation in orthography, but different meanings (Saeed 1997). I have chosen to use the term homophony because it is more general. Sometimes this is also called accidental homophony to emphasize the fact that the meanings are unrelated (Sauerland and Bobaljik 2013).

[^134]:    ${ }^{213}$ In an abstract meaning analysis, we would say that there is one meaning that includes both the animal and its meat.

[^135]:    ${ }^{214}$ These days a noun phrase is called a determiner phrase. However, that does not have a huge effect on the discussion, so I feel no need to change the notation. The analysis would work just as well either way.

[^136]:    ${ }^{215}$ There are (at least) three future expressions in Siamou, but only two verbal suffixes with a future interpretation. See chapter 6 .
    ${ }^{216}$ "Stative" is the name currently given to this morpheme by Siamou linguists. It is not to be confused with the lexical aspect category "stative." This aspect has some characteristics that fit with it being a perfect aspect. For example, it often has a sense of current relevance. However, the completive suffix is also like a perfect in some ways. (It sometimes has a recent past interpretation, or implies that something was done "completely.") I also use the terms "stative" and "completive" to refer to these two aspects. A semantic analysis is not available at this time.

[^137]:    ${ }^{217}$ Although the usual pattern is for imperfective utterances like (24a) to have a present time reference and imperfective + in utterances like (24b) to have past time reference, it is possible for imperfective utterances without in to have past time reference as well. For example, see (26-27) in 5.2.2.2.
    ${ }^{218}$ The French translation does not match the context: the pronoun is feminine, but the context is about a brother. This is because the context is from one elicitation session, and the translation is from another when I was doing a grammaticality check. Siamou pronouns do not have gender distinctions.
    ${ }_{219}$ The contexts in (24a) and (24b) are slightly different: in one case you and I are with my brother and in the other case only I am with my brother.

[^138]:    ${ }^{220}$ Recall from 4.1.2 that our theory is only concerned with two relations: the relation between R and E (aspect), and the relation between $S$ and $R$ (tense). Therefore, the fact that $E$ has also shifted to the past with respect to $S$ is irrelevant. It has to shift because imperfective aspect requires that R be contained within E .
    ${ }^{221} \mathrm{I}$ am not claiming that it is a present perfect (nor that it is not) but only that it is similar to it in this regard.

[^139]:    ${ }^{222}$ This data resembles the Niuean inchoative perfective in Matthewson et al. (2015).
    ${ }^{223}$ This is likely an inchoative verb. It can mean 'fall asleep' or 'be asleep.' (See chapter 4 for more details.)
    ${ }^{224}$ Again, the French translation does not match the context. This is because the translation is from one elicitation session, when I was doing a grammaticality check, and the context is from a later session. Siamou pronouns do not have gender distinctions. No French translation is available for the second interpretation.

[^140]:    ${ }^{225}$ The word nwáan is an adjective. It is not aspectually inflected. Therefore it is not a verb.

[^141]:    ${ }^{226}$ They usually have a counterfactual meaning in this context as well. I explore this in 6.4.2.
    ${ }^{227}$ These expressions also have a modal component to them, but in this section I focus on the temporal interpretation. See chapter 7 for discussion about modality in future expressions.

[^142]:    ${ }^{228}$ No animals were harmed in the making of this thesis. Apologies for the morbid context.
    ${ }^{229}$ Note that when I talk about "futures" or "future expressions" I am deliberately not calling them future tense. See chapter 7 for more information on future expressions.

[^143]:    ${ }^{230}$ I discuss this further in the following section on counterfactuals.
    ${ }^{231}$ In principle, $E$ could also follow or coincide with $S$. The only conditions are that $R$ precedes $S$ and that $E$ follows $R$, so the order of $E$ and $S$ is undetermined.

[^144]:    ${ }^{232}$ The second French interpretation Il/Elle mangerait ('S/he would eat.') seems odd to me. I think it should be Il/Elle aurait mangé ('She would have eaten.'). It may be that the past conditional is not very common in the variety of French spoken in West Africa.

[^145]:    ${ }^{233}$ Whether or not this is the best translation is to be determined in this section.
    ${ }^{234}$ The data we are dealing with is a perfective plus a past tense, not a perfect plus a past tense. This is the first clue that this analysis is incorrect. A perfective has an event time that overlaps with the reference time while a perfect has an event time that precedes the reference time. A past perfect also has an event time that precedes the reference time, which makes it incompatible with perfective aspect. See 5.1 for my analysis of the Siamou perfective and how it ensures past reference time.

[^146]:    ${ }^{235}$ The perfective form that -mún ('already') attaches to may be a nominalized verb, but that is unknown at this time.
    ${ }^{236}$ It remains to be determined why the accepted interpretations for (55a-b) aren't actually just the default interpretations, rather than the only acceptable ones. If -mún $\supset$ is just an adverb, it shouldn't actually change the tense/aspect of the phrase, but it could make a possible interpretation more salient. In any case, what's important is that in does not change the default interpretation of the utterance to past perfect.
    ${ }^{237}$ The French translations in this example consistently use a past perfect for utterances with a perfective verb and the particle in. However, based on the contextual information, I nonetheless reject a past perfect interpretation.

[^147]:    ${ }^{238}$ The data in (59) suggests that the stative suffix encodes perfect aspect. The combination of past tense and perfect aspect is expected to yield a past perfect. If the stative suffix in Siamou combined with past tense yields a past perfect, then it might be a marker of perfect aspect. This is not conclusive however. The English translation of (59a) cannot use a perfect. So even if this is a perfect, it is not the same as an English perfect.

[^148]:    ${ }^{239}$ I am not sure why the word for rice is different in (62a) and (62b).

[^149]:    ${ }^{240}$ My consultant prefers (67b) to (67a), but finds them both acceptable.

[^150]:    ${ }^{241}$ Default future interpretations are ruled out by a separate constraint: the simplicity principle. Since futures are less certain than past, the past interpretation is preferred (Smith 2008).

[^151]:    ${ }^{242}$ Performative verbs are only performative in the first person. In the third person, they are eventives, and have a past interpretation in the perfective like other Siamou verbs (i).
    i. Mún $n 0=\hat{\jmath}$ à ká

    1SG mother=DEF2 3SG refuse.PRFV
    My mother refused.
    French: Ma mère a refusé. (L)
    ${ }^{243}$ There is also a small class of inchoative verbs that sometimes have a present stative interpretation in the perfective. However, I argue that these are actually past inchoatives with a result state entailment. See 5.5.

[^152]:    ${ }^{244}$ The same thing occurs in English. For example, the utterance She was going to go out and then she did is also odd, even though it is acceptable in the right context (such as if she thought about going out, then was prevented for some reason, but later decided to go out anyway).

[^153]:    ${ }^{245}$ In (82) feminine pronouns were used in French in a context involving a man. This may be a result of Siamou not having gendered pronouns.

[^154]:    ${ }^{246}$ In some instances, as in (86a), it seems as though the utterances without in have the opposite implication, i.e. that something is still the case. Perhaps this could be called a non-cessation implication.

[^155]:    ${ }^{247}$ However, see Klein (1994) for a discussion of using past tense for an utterance such as The book was in Russian. If I say something like, I met this woman yesterday. She was rich, there is no implication that she is no longer rich.

[^156]:    ${ }^{248}$ This is the "usual" (i.e. non-polite) interpretation of this utterance.

[^157]:    ${ }^{249}$ Note that English does a similar thing. For example, I was wondering [...] is more polite than I wonder [...]
    ${ }^{250}$ See chapter 7 for more discussion of future expressions used for making offers.

[^158]:    ${ }^{251}$ In Siamou, the particle $m i$ serves to mark physical distance from the speaker. This could potentially block in from marking physical distance. Similarly, the existence of future morphemes could block in from having a future interpretation.

[^159]:    ${ }^{252}$ Recall from chapter 2 that $r i$ becomes $n i$ after a nasal and $l i$ after a lateral. Sometimes it is reduced to a tone on the preceding morpheme, and often it drops out altogether.

[^160]:    ${ }^{253}$ In fact, this might be a more general pattern with pre-predicate particles in Siamou: $r i$ seems to occur in most finite clauses (bearing in mind that it drops out frequently in casual speech) unless there is another particle, in which case $r i$ does not occur. The following minimal set shows that $r i$ alternates with $w o$ and $b e$ in negative clauses. These utterances have not been analyzed, but their interpretations are very interesting because they all express different kinds of modality.

[^161]:    ${ }^{254}$ The verb for believe was also changed from the first draft to the second. This may be an attempt to use more "pure" Siamou words and not borrowings from Jula.

[^162]:    ${ }^{255}$ The information about bè is also given in 2.3.4.2.5.

[^163]:    ${ }^{256}$ Judgements for these types of utterances are murky. This may be related to the fact that many verbs have a perfective that is identical to the bare verb. The general pattern seems to be that the bare verb is acceptable with bè (10) but the perfective verb is not (11a).

[^164]:    ${ }^{257}$ Occasionally bè + IMPF and bè + STAT structures are accepted in a main clause (i). Verbs of coming and going, such as (i) have a future reading with bè + IMPF structures. There are also a few examples in which bè V-nغ̀n occurs in a main clause with a 'managed to' reading.
    $\begin{array}{llll}\text { i. } & \text { À } & \text { bè } & \text { blaà-n. } \\ & \text { 3SG } & \text { MOD } & \text { come-IMPF }\end{array}$
    He's going to come./He's coming for sure.
    ${ }^{258}$ Siamou has traditional birth order names. Fòn was the Siamou name given to my husband Tim during our time in Burkina Faso because he is the fourth son of his mother.

[^165]:    ${ }^{259}$ Of course, the overlap of R and E in (18a) and the overlap of S and R in (18b) are not mandatory. For example, a past prospective aspect refers to events that are in the past relative to the speech time.

[^166]:    ${ }^{260}$ If there is a non-empty modal base, the ordering source ranks a subset of the worlds picked out by the modal base.
    ${ }^{261}$ This is what is meant when it is said that a modal base or an ordering source is "empty." If it's empty, that means it doesn't restrict the set of worlds.

[^167]:    ${ }^{262}$ See Kratzer (1977, 1991), Portner (2009:141-142), Rullmann et al. (2008:2) for more information about modal force.

[^168]:    ${ }^{263}$ See Portner (2009:71-72) for examples of these different ordering sources.
    ${ }^{264}$ The Siamou priority future does not appear to have teleological readings.

[^169]:    ${ }^{265}$ Example (24) is from Rullmann et al. (2008:320).

[^170]:    ${ }^{266}$ Sarkar (1998), however, does not consider this sufficient to argue that will has the semantics of a modal.

[^171]:    ${ }^{267}$ The term "future time reference" is tricky. What I mean is that -ta is used for situations in which the event time follows the speech time ( $\mathrm{S}-\mathrm{E}$ ), such as (32). However, since the relation between S and E is always mediated by R, until we know what R is, we can not say whether something with "future time reference" is a future tense or a prospective aspect.
    ${ }^{268}$ It remains to be seen whether examples similar to those in (25) are felicitous with - $t a$.

[^172]:    ${ }^{269} \mathrm{I}$ am not sure if futures of any kind ever actually entail that an event is realized though. This would mean that speakers have to know the future. What is important, I think, is whether or not the speakers believe the event will be realized. In (34), supposedly the monkey actually intends to bite. With futures-in-the-past, as in (35), it is quite common for the event not to be realized (Iatridou 2000).
    ${ }^{270}$ See 7.3.3 for a brief discussion of why this diagnostic might be problematic. The diagnostics for future expressions are now such that they almost rule out future tense altogether. This is interesting because maybe it says something important about language: that there's no such thing as future tense at all. If that is the case, what is the significance of that? Alternatively, perhaps we have just restricted the definition of future tense so much as to make it useless. As Enç (1996) points out, if we define tense too strictly, we end up ruling it out altogether. In that case, maybe we need to re-evaluate our criteria for future tense.

[^173]:    ${ }^{271}$ Glougie (2008) argues for the same analysis for English futures, but for the purposes of comparison, I use Copley's (2009) analysis in Table 7.3.
    ${ }^{272}$ The analysis for English is the same as the analysis for Turkish and Indonesian.
    ${ }^{273}$ Again, I am using the term "future" here informally to state that the event time follows the speech time, which is not a formally defined relation.

[^174]:    ${ }^{274}$ However, if past tense morphology is added to these expressions, they become acceptable, as I show in 7.3.3. This suggests that the unacceptability of the examples in (40) is an effect of default reference time. By default, the reference time in these examples is the utterance time. An adverbial such as yesterday is not able to shift the reference time to the past, but the past tense in is able to shift it.

[^175]:    ${ }^{275}$ Past tense, the only tense in Siamou, is marked by a sentence final particle in, as shown in chapter 6. If these future expressions encoded future tense, we might expect them to be marked by a sentence final particle, similar to the past tense (although this is not necessary).

[^176]:    ${ }^{276}$ This diagnostic might be problematic because it seems to predict that utterances like (45) should be impossible, since they combine two different aspects. Such expressions may be analyzed as involving two reference times. (For an example of how this might work, see Demirdache and Uribe-Etxebarria (2007).) In that case, we might expect it to be possible for two tenses to combine, since a similar analysis would work. However, tense and aspect are not the same thing, so perhaps this is not a problem after all. In any case, I make use of this diagnostic, acknowledging that it needs refinement or clarification.

[^177]:    ${ }^{277}$ I need to check if the pattern in (49) can be replicated for the other two futures as well.

[^178]:    ${ }^{279}$ Utterances with 'managed to' readings often have actuality entailments. The Siamou data of the type shown in (61) needs to be tested for this.

[^179]:    ${ }^{280}$ In narratives, the time of the story is treated like the speech time: past marking is often not necessary.

[^180]:    ${ }^{281}$ It is not clear why this pronoun has a high tone here. It may be a transcription error, or it may be a logophor whose existence is licensed by previous discourse not included here.

[^181]:    ${ }^{282}$ The expression of goodwill in (84) does not match the definition of an offer (discussed in 7.3.5) because there is no sense of it being dependent on the man's acceptance of it.

[^182]:    ${ }^{283}$ See Reis Silva and Matthewson (2007) for an argument for instantaneous present tense in Blackfoot.
    ${ }^{284}$ This analysis predicts that achievements, which are also instantaneous, should have a present interpretation with perfective aspect. However, this does not seem to be the case in Siamou. Whether or not perfective achievements can have a present interpretation in specific contexts remains to be seen.

[^183]:    ${ }^{285}$ The priority future (ri). . .-a also encodes modality, even though it does not contain the particle bè. See 8.1.2.1 for discussion.
    ${ }^{286}$ Of course, I argued that the Siamou future expressions are prospective aspect, not future tense, but since that discussion in itself reveals something about future tense, I have included the discussion of Siamou future expressions here.

[^184]:    ${ }^{287}$ I was not able to find a specific situation in which the utterance in (18a)was felicitous. The consultant was unsure about the following context: I started harvesting the corn before yesterday. Last night hadn't finished yet, and this morning I continued harvesting. The reason for not accepting it was that the context is too specific about start and end times.

[^185]:    ${ }^{288}$ Unfortunately, the perfective and imperfective forms of this verb ( $k \varepsilon \varepsilon \ln$ ) are identical. However, the imperfective here requires past tense in to make it past, but the perfective in (27b) does not.

[^186]:    ${ }^{289}$ The data on semelfactives in Siamou is problematic. For example, with the verb kpesln 'cough,' I had difficulty distinguishing the different forms of because they sounded very similar to each other. However, see ( 37 d ) in 5.2.2.8 and (48) in 7.3.4 for some examples of this verb.

