Directionals and Aspect in Matsigenka

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Abstract

The relationship between aspect and directionals has long been noted in Kampan linguistics (Payne, 1982; Michael, 2008; Mihas, 2010; Michael, 2016). While many of these languages have devoted aspectual systems, some of their directional morphemes bear inherent aspectual interpretations, and can even be used in non-motion settings to mark for particular aspectual viewpoints. This thesis will investigate the relationship between directional and aspectual morphology found in Matsigenka, a Kampan Arawak language spoken in Peru. First, I will describe the frameworks assumed for interpreting the semantics of directionals and aspect. My discussion of aspect will be situated within the neo-Reichenbachian framework described by Klein (1994) and the two component approach described by Smith (1997), while my discussion of directionals will be situated within a framework modified from one proposed by Michael (2016). Second, I will provide descriptions for each aspect and directional marker, situating them within their respective frameworks. Third, I will show that there are parallels between the treatment of viewpoints and eventualities in these two frameworks, such that a correspondence arises between a given directional's path and aspectual semantics. Finally, I end with a discussion the limitations of this framework, and propose future areas of research.

For my grandmother, Ruth A. Dohn,

who so graciously supported my education.

Acknowledgements

Contents

0.1 Morphemes and Abbreviations by Gloss

Gloss	Definition	Morpheme
1O	1st person object	=na
1S	1st person subject	no- ~ n-
2O	2nd person object	=npi
2S	2nd person subject	pi- ~ p-
3FO	3rd person feminine object	=ro
3FS	3rd person feminine subject	o- ~ ø-
3F.PRO	3rd person feminine pronoun	iroro
3MO	3rd person masculine object	=ri
3MS	3rd person masculine subject	i- ~ y-
3MS.IRR	3rd person masculine subject + irrealis	ir- ~ iri-
3M.PRO	3rd person masculine pronoun	iriro
ABL	ablative	-an
ALIEN	alienable possession	-rintsi
ALL	allative	-apah
APPL:INDR	indirect applicative	-ako
CNTR	contrast	-ri
DEP	departative	-apanu
DEM.MED	medial demonstrative	-oga
EPC	epenthetic consonant	-t
EPV	epenthetic vowel	-a
FRUS	frustrative	-ve
IMPF	generic imperfective	-ø
IRR	irrealis prefix	n-
IRR.a	irrealis a-class	-enpa
IRR.i	irrealis i-class	-e
LOC	locative	=ku
NEG.REAL	irrealis negation	tera
NOMZ.INALIEN	alienable possession nominalizer	-re
PERF	perfective	-ak
PL	nominal plural	-hegi
PL	verbal plural	-hig
PL	generic plural	-page
REAL.i	realis i-class	-i
REAL.a	realis a-class	-a
REDEP	redepartitive	-apanaa
REG	regressive	-ah
RET	returnative	-u
SUB	subordinator	=ra

0.2　Orthographic Conventions

Letter	Phoneme
a	/a/
aa	/aː/
ch	/t͡ʃ/
e	/e/
ee	/eː/
g	/g/
h	/h/
i	/i/
ii	/iː/
k	/k/
ky	/kʲ/
m	/m/
n	/n/, /N/
ny	/nʲ/
o	/o/
oo	/oː/
p	/p/
r	/r/
ry	/rʲ/
s	/s/
sh	/ʃ/
t	/t/
ts	/t͡s/
ty	/tʲ/
u	/ ɨ͡i /
v	/ β/
y	/j/

Chapter 1

Introduction

1.1 Introduction and Theoretical Aims

Linguistics, like many academic fields, lies primarily at the intersection of complex theory and our everyday reality. Among linguistics' chief pursuits as a field are uncovering the range of communicative possibilities contained within the scope of human language, and what universals, however abstract, the over 6,000 languages on this planet share. In doing this, it is imperative that we as linguists draw from a wide variety of languages, not just those we have a high degree of exposure to. This thesis attempts to do just that by documenting and describing two cross linguistically common semantic domains within Matsigenka, a language with only some previous documentation and analysis.

Prior work carried out on Matsigenka and other Kampan languages has yielded general analyses for several grammatical categories, but there is still a need for more systematic study to provide detailed descriptions of the semantics of many of these domains. In particular, previous work on Matsigenka has noted some peculiarities within two classes of morphemes (Michael, 2016). This first of these is a class of morphemes called directionals, which can mark for a variety of meanings, including defining trajectories for verbs of motion and marking aspectual contrasts. The second class is a set of morphemes that have been described as also marking aspect, but no focused work has ever led to a systematic analysis of the types of contrasts marked. Based on this apparent overlap in the semantic domains of these two categories, as well as morphological restrictions regarding the co-occurrence of many of them, it becomes increasing clear that these two classes of morphology interact with one another on a level not yet understood.

With these observations in mind, this thesis will proceed with two goals. The first goal will be to provide a descriptive account of aspectual and directional semantics in Matsigenka grammar, and the second will be to provide a unified account for the widely varying semantics of Matsigenka directionals. Thus, in order to achieve these two goals, the contents in the following chapters will be a mixture of documentation, theoretical application, and advancement of theory. More specifically, this thesis will include a description Matsigenka aspectual morphology situated within a neo-Reichenbachian framework for aspect, and a description of Matsigenka directional morphology situated within a theoretical framework modified from Michael (2016). From there, I will utilize these two frameworks to show that Matsigenka directionals' path and aspectual semantics are related through the topological relationships they reference between a viewpoint and an eventuality.

While the questions and goals outlined here are quite extensive, they are a long way from providing a comprehensive analysis of these two domains. No attempt was made to investigate the interaction between aspect or directionals with other temporal or modal categories in the language. It seems likely that further interactions between aspect and/or directionals with the category of reality status may exist, and should be investigated in the future. At the end of each section I will address

questions that remain unanswered, and in the conclusion suggest what are, in my opinion, the most pressing directions for future investigation.

The rest of this thesis is organized as follows: the remainder of this section will be devoted to introducing my methodologies and the Matsigenka language and people. Chapter 2 will outline the theories and frameworks assumed for analyzing aspect and directionals in Matsigenka. Chapter 3 will give a descriptive account of the basic aspectual distinctions in Matsigenka, while Chapter 4 will give a descriptive account of each directional morpheme and their many uses. Chapter 5 will then build on the relationships between aspect and directionals noted in the previous two chapters and attempt to identify a means of accounting for the relationship between the grammars of aspect and directionals in Matsigenka. Finally, Chapter 6 will conclude this thesis will a brief summary and suggestions for future work on Matsigenka, and the theorization of aspect and motion more generally.

1.2 Methodologies and Data Sources

Linguistic data used in this research come from two sources. The primary source of data is notes gathered during elicitation work with a Matsigenka speaking consultant, and the second is a Matsigenka language corpus.

The elicitation work this data is taken from was carried out from August 2016 to April 2017. Elicitation consisted of both written questionares sent via email and oral elicitation sessions carried out over Skype. Due to my limited proficiency in Spanish, the contact language, all sessions were carried out in conjunction with my advisor Dr. Lev Michael, and later translated into English as needed.

My consultant was a Matsigenka speaker named Maribel Kaibi Omenki. Maribel is native Matsigenka speaking woman, who at the time of elicitation was in her 30s and living in Cusco, Peru, in order to pursue a professional degree. She comes from the community of Koribeni and is a fluent speaker of the Upper Urubamba dialect, in addition to being fluent in the local variety of Spanish. She reports speaking primarily Spanish on a day to day basis, but speaks Matsigenka when contacting or visiting home regularly.

Elicitations consisted of three primary methods to gather semantic information. The first was to set up scenarios in Spanish and ask Maribel to give descriptions and/or responses to questions in Matsigenka. The second was to give sentences in Spanish and ask for contextually appropriate translations into Matsigenka. The final consisted of self composing Matsigenka sentences and asking the consultant for grammaticality judgements, appropriate contexts under which the utterance could be said, and/or translations back into Spanish. Many situations and sentences were adapted from semantic tests in Smith (1997), and changed to be culturally relevant.

In addition to elicitation work, data were taken from a corpus of transcribed Matsigenka texts (Vargas Pereira et al., 2013). This corpus is composed of texts written by two native Matsigenka speakers, and compiled and edited by Lev Michael, Christine Beier and Zachary O'Hagan. The most recent published version of this corpus is cited so that the reader may read about its composition, though the version the examples presented here are taken from has been edited since by myself and others to reflect current analyses. The corpus consists of texts in four line interlinear format, with lines containing the original base line text, segmented text, English morpheme glosses, and free translation into the local Spanish dialect.

Citations will be given in parentheses after each example according to their data source. Examples from my own elicitation notes will be marked with either a Q for questionnaire or E for elicitation, followed by the consultants initials[1], the researches initials[2], and the date of elicitation in DDMMYY format. Examples from the corpus will be marked with a T for text, followed by their three digit story code, initials of the author, and a two digit line number. Examples of each are given

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[1] MKO for Maribel

[2] MKD for myself and LDM for my advisor Lev Michael

below in (1) - (3). Additionally, all examples in the following pages will be provided with their original Spanish free translations in addition to a secondary English translation for the reader. For glossing and orthography conventions see §0.1 and §0.2.

(1)   (Q.MKO.MKD-LDM.061116)

(2)   (E.MKO.MKD-LDM.180317)

(3)   (T.ART.HVP.22)

1.3   Ethnographic Sketch

Geography and Climate

The Matsigenka people reside in Southeastern Peru, spread out among multiple river basins. Current Matsigenka settlements are located in the Upper and Lower Urubamba basins, the Madre de Dios region and parts of the Manú River Valley. These areas are mostly foothills, between the Andes on the west and the lower Amazon basin on the east (Johnson, 2003, 12). At greater elevations is a region of the Andes referred to as the cloud forest, an uninhabitable zone with a cold climate and limited resources (Johnson, 2003, 22). At lower elevations are the less steep river valleys inhabited by their immediate neighbors.

The climate of the region is typically pleasant and warm (Johnson, 2003, 15). Average daily temperatures range from 23 to 30°C celsius depending on the season, with highs around 30 to 35°C degrees during the day and lows reaching around 20°C in the evenings. March and October are typically the hottest months of the year, and June and July are often the coldest. The dry season runs from the months of March to August, and the wet season spans October to February, usually peaking during January. The wet season can see the occasional cold spell, but they typically do not last longer than a week.

Rainfall varies significantly from year to year and region to region, but typically falls within the range of 2500 to 5000 millimeters (Johnson, 2003, 16). This has a sizeable impact on rivers, a core feature of the Matsigenkas' environment and life. During the rainy season rivers swell, creating rapids and making them difficult to forge, while during the dry season there is a significant decrease in water level, exposing small beaches and islands along the larger rivers and drying up many smaller streams all together.

Society and Culture

Traditional Matsigenka society functioned primarily on the level of the family unit (Johnson, 2003, 140). The Matsigenka tended to live in small family groups scattered apart from each other and rarely dwelled in larger community groups. However, starting in the 1950s small community groups began as a result of missionization efforts and pressures from the Peruvian government (Davis, 2004, 66). Prior to these settlement efforts, the typical Matsigenka household consisted of a husband and wife pair and their unmarried children (Johnson, 2003, 92). The most common exceptions to this include men with more than one wife, and newly married couples with children who often reside with the wife's family for a time. Today most Matsigenkas now reside in community groupings, but many still maintain additional homesteads away from these communities (Johnson, 2003, 148).

Many factors go into deciding a location for the ideal homestead (Johnson, 2003, 79, 143). Such factors include proximity to suitable land for a garden, ease of river access, and a lack of competing claims for the location. Matsigenka houses typically consist of a walled hut with a palm

thatch roof, and sometimes have a separate unwalled kitchen hut. A dwelling will usually have one hearth for each wife, though sometimes wives have to share.

Traditional subsistence practices of the Matsigenka can be classified as a mixture of agricultural and hunter gatherer practices (Johnson, 2003, 43). Matsigenka families maintain at least one sizeable garden, which are referred to as *chacras* in the local Spanish. They are cleared, planted, and mostly cultivated by the men. Sometimes women will plant certain crops and help tend to weeding, especially when their husbands are away hunting. A large portion of these gardens is devoted to manioc, the staple food source in the Matsigenka diet, but will also commonly include maize, bananas, and plantains. Men will also plant peanuts, while women will plant new cocoyam[3], pineapple, papaya and sugarcane. When building a new garden, men will first cut down trees to clear a patch. After this they typically employ slash and burn practices to clear the remainder of the patch. A single garden patch is typically only utilized for a few years before it is abandoned for a new one.

In addition to agriculture, the Matsigenka complement their diet with hunting and gathering (Johnson, 2003, 54). Hunting is typically carried out by the men, while all members of a family participate in gathering various foods. Matsigenka men usually hunt alone, though certain types of game are hunted in groups. Tapirs and peccaries are the two most commonly hunted animals, but monkeys and various types of birds will also be killed and consumed if the chance arises. Likewise, Matsigenka men also fish, and sometimes communities will fish together in large groups. The Matsigenka also eat a variety of different insects, often consuming them on the spot. In addition to gathering food sources, the Matsigenka also gather items for material and medical purposes. Certain species of wild cane are gathered for arrow production, while many different species of plants are gathered for medicinal uses.

Like many Amazonian groups, the Matsigenka have a tradition of shamanism (Johnson ,2003, Rosengren ,1986). The primary role of a shaman, usually referred to as a *seripigari*, is to help cure illnesses. Within Matsigenka culutre, many ailments are thought to be caused by various actions carried out by unseen spirits called *saankarite*, and it is believed that shamans can cure these by switching places with their spirit world counterparts to see and fix the problem. In order to do this, these shamans make use of tobacco and plant based hallucinogens to make contact with the *saankarite*. This ability to interact with spirits and heal ailments has led some shamans to be depicted as powerful leaders in traditional Matsigenka stories.

Due to the value the Matsigenka place on individualism, many initially thought that Mastigenka societies were largely egalitarian, however this is not the case (Rosengren, 1987, 3). The ideal Matsigenka leader, referred to as a *tinkamintsi*, does not take power, but rather rises to power based on charisma and benevolence. These leaders do not necessarily have the power to tell people what to do, but still do have indirect sway over decisions. One important role of a leader is to host masato parties, large gatherings where people drink manioc beer for several days, which often means that other people will work on his community swidden to provide for these gatherings.

During the rubber boom and missionization efforts, other types of leaders, referred to as *gantatsirira* rose to power (Rosengren, 1987, 162). The power of the *gantatsirira* was seen as fundamentally different from those of the ideal leader, due to their power being granted by outside forces or usurped without the consent of others. Today there are community presidents as per requirement of being officially incorporated as a native community in the eyes of the Peruvian government(Rosengren, 1987, 184). These leaders often times only have the support of a portion of the community, and those who do not support them will show this by not participating in community meetings.

History and Contact

There is little history of the Matsigenka people recorded prior to the mid-19th century. In the pre-Colombian era, the dominant group in the region was the Incas. Due to the surrounding geography there was never political integration between the two groups, but there is strong evidence that trade between them occurred (Johnson, 2003, 29). The Matsigenka also had significant contact

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[3]Xanthosoma spp., a root similar to taro

with their downhill neighbors the Piro. Accounts make out that the Piro often asserted dominance over the Matsigenka, pushing them away from the rivers during certain seasons and taking food and women (Johnson, 2003, 31).

Though western conquest had severe impacts on the Incas and other groups early on, it wasn't until the beginning of the 18th century that the Matsigenka experienced significant contact (Johnson, 2003, 33). This early contact was via missionaries, who were largely unsuccessful in assimilating the Matsigenka to western practices. Then, with Peruvian independence in early 19th century, the presence of missionaries sharply decreased with the transition to the new secular government.

Soon after many of the missionaries pulled out of the region, the Amazonian rubber boom began, bringing a fresh wave of contact (Rosengren, 1987, 41). The rubber boom began in the mid 1870s and lasted until 1912. During this time, rubber barons came in to exploit natural resources for rubber production, imposing harsh policies on the natives, and enslaving them to work in rubber production. At times, some Matsigenka were involved in this exploitation, and some even ran slave trading outposts. Many Matsigenka died during this period in history, and many more fled upriver to more remote areas. The effects of the rubber boom were felt for many decades after, with some Matsigenka who fled upstream still residing there today.

After the rubber boom, missionaries once again came to the region. The first were Dominican missionaries, who began the process of trying to gather the Matsigenka into clustered settlements (Rosengren, 1987, 42). Then, in the 1940s the Summer Institute of Linguistics (SIL) began their involvement in the region (Davis, 2004, 62). When the SIL came into the region, they began to form settlements by attracting Matsigenka who were interested in the medical care they could provide. Traditional Matsigenka culture has vast knowledge of plants in the area with medicinal properties, but still they had ailments they could not cure themselves.

As these communities were forming, the SIL also began linguistic work on the Matsigenka language, one goal of which was to produce a translated version of the Bible (Davis, 2004, 62). Then in 1952, at the request of the Peruvian government, the SIL began the process of creating bilingual schools in some of the newly formed communities. Progress on schools was slow at first, and it wasn't until a few years later that these schools were up and running regularly. These schools helped to draw more Matsigenka into settlements.

The SIL's involvement with the Matsigenka of lower Urubamba during second half of the 20th century saw significant strides in development and integration with rest of Peruvian society. Official incorporation as *Comunidades Nativas* in the eyes of the Peruvian government, the creation educational systems, and economic activity with the outside world were only a part the developments that occurred during this time, but were important factors shaping the current state of Matsigenka society today.

Over the past few decades interest in the area from non-local groups has increased significantly. This has sparked tensions between the Matsigenka and outside groups, and these tensions have had noticeable impacts on Matsigenka Society. One such example of these events is the Camisea Gas Project, which seeks to extract and transport natural gas from a large reserve located in the Urubamba river basin. Events such as these have been viewed by the Matsigenka as a threat to their culture and rights, and have led the emergence of increased political unity among the Matsigenka (Bruijn and Whiteman, 2010).

The increased presence of outside entities over the past few decades has also had other effects on Matsigenka society. In particular, fear of losing land rights had led many farmers to increase the cultivation of their land legitimate their claim (Henrich, 1997), and the desire to maintain their well being has led to even more strides in education. Today many Matsigenka study and work in larger cities such as Cusco and Quillabamba, and economic interactions between the Urubamba and other regions inhabited by the Matsigenka continue to expand.

1.4   Linguistic Overview

Language Status and Vitality

According to Lewis et al. (2016) the Matsigenka language is one of many indigenous languages recognized by the Peruvian constitution. There are roughly 13,000 ethnic Matsigenka, but only about six to seven thousand of them are speakers of the language (Moseley, 2010). Language loss is most common in regions such as the lower Urubamba and others with high degrees of contact with other parts of Peruvian society. In these regions the language is significantly less likely to be transmitted to members of the younger generations. This is largely due to pressures from Spanish, though pressures from Quechua are present as well (Lewis et al., 2016). This puts Matsigenka in line with so many other indigenous languages being threatened by the dominant languages within their countries.

In more official terms, Matsigenka is classified by multiple sources as being endangered. Ethnologue places Matsigenka at an EGIDS status of 5, which is classified as 'developing' (Lewis 2016). This means that the language is often used, and by many. Additionally a status of 5 typically includes that some written sources exist, though they may not be widespread or easily accessible. Likewise, the Atlas of the World's Languages in Danger classifies Matsigenka as 'Definitely Endangered' (Mosley 2010).

Over the past half century significant strides in linguistic documentation and pedagogical material production have been made, but the current situation is still far from adequate. It was only just recently that a comprehensive dictionary was published (Snell, 2011), and as of yet there is still no published comprehensive grammar.

Genetic Classification and Dialectology

Matsigenka is classified as a member of the Kampan branch of Arawak family. Kampan languages are spoken predominantly in the Andean foothills of Peru, and include the Ashéninka, Asháninka, Kakinte, Nomatsigenga, Nanti and Matsigenka languages. The exact internal classification of the Kampan family is still a matter of debate, but Michael (2008) places Matsigenka as most closely related to Nanti and Nomatsigenka. Matsigenka and Nanti share a high degree of mutual intelligibility, with Nanti speakers more easily understanding Matsigenka speakers.

The Kampan family can be further classified as a subfamily of the Arawak language family. Arawak is the most widespread language family of south America, and possibly extended from the Caribbean to northern Argentina at the time of European conquest (Aikhenvald, 2012). Within Arawak, Kampa is most often classified as belonging to the southern branch.

Matsigenka conforms to many linguistic norms of the Amazonian language region, but shows some potential signs of influence from neighboring languages of the Andean language region. According to classifications by Aikhenvald (2012), Matsigenka is most like other Amazonian languages in regards to its phonemic inventory, affixation patterns, and extensive system of classifiers, but conforms more to the Andean mold in regards to its alignment and the number of arguments marked on the verb.

Matsigenka is spoken over a large region, which has led to dialectical variation. According to Michael (2008), Matsigenka has three primary dialects, the Upper Urubamba, Lower Urubamba and Manú dialects, which differ in terms of both pronunciation and grammar. One notable feature of the Upper Urubamba dialect spoken by my consultant is the high degree of palatalization of alveolar segments before front vowels.

Phonology

The Matsigenka phonemic inventory contains 9 vowels and 18 consonants (Michael et al., 2015). The vowels consist of four pure monophthongs, /i, e, a, o/, their lengthened counterparts, and a high light diphthong /ı͡i/. The consonants can be broken into two categories, plain and palatalized. The plain consonants are /p, t, k, g, β, s, t͡s, m, n, N, r/ and the palatalized consonants are /t^j, k^j,

ʃ, t͡ʃ, ɲ, j, rʲ/. Snell (1978) and Michael et al. (2015) disagree on the existence of a palatalized voiced velar phoneme /gʲ/, however based on my experience with the language I have reason to believe that Michael et al. (2015) is correct in saying that it does not exist as a phoneme. The full vowel and consonant inventories are given in Tables 1.1 and 1.2. The reader may turn Table 0.1 at the beginning for transcription conventions.

	labial	alveolar	palatal	velar	unspecified
stop	p	t, tʲ		k, kʲ, g	
fricative	β	s	ʃ		
affricate		t͡s	t͡ʃ		
nasal	m	n	ɲ		N
approximant			j		
tap		r, rʲ			

Table 1.1: Matsigenka Consonant Inventory

	front	central	back
high	i, i:	i͡i	
mid	e, e:		o, o:
low		a, a:	

Table 1.2: Matsigenka Vowel Inventroy

Matsigenka has a strong tendency towards a CV(N) syllable structure. In the case of underlying heteromorphemic CC or VV clusters, epenthesis of a V or C segment respectively is the most common means to resolve illicit syllable structures. The short central vowel /a/ is typically epenthesized to resolve CC clusters, while /t/ is typically epenthsized to resolve VV clusters. One notable class of surface exceptions to this occurs due to the deletion of the phoneme /h/ in most surface pronunciations. While surface /h/ is deleted in almost all lexical items, its underlying presence prevents epenthesis from happening. However, most Matsigenka do not write /h/ in written Matsigenka. I will conform to this convention in the baseline of interlinear examples, but will include /h/ when segmenting examples by morpheme. Other means of resolving VV and CC clusters include deletion, metathesis and other phonological processes.

Morphosyntax

Matsigenka is polysynthetic, agglutinating, and predominantly head marking. Some of the many types morphemes that occur on the verb include subject, object and possessive marking, causatives, applicatives, directionals, classifiers, and incorporated nouns. The default word order in Matsigenka is VSO, however due to both subjects and objects being marked on the verb, word order is often fluid and overt nominal referents can often be dropped. The alignment system is primarily nominative-accusative, though there are a handful of constructions that utilize a split-intransitive system of marking[4].

The morphological template for verbs is quite extensive, with three prefix positions and over twenty suffix positions available. Most derivational morphology occurs closest to the root, and inflectional morphology is attached on the edges of the verbal complex as prefixes, suffixes and clitics. Table 1.8, located at the end of the this section, gives the morphological template of the verbal complex.

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[4]The examples presented in this thesis do not contain any instances of split intransitives, so they shall be not be discussed further

The morphological template for the nominal complex follows similar patterns to the verbal complex, but contains far less affixal positions. Possession is marked on nouns with a set a prefixes similar in form to verbal subject markers. Nominal suffixes include the plural suffix *-egi*, other inflectional markers for switching between alienable and inalienable possessive classes, and the plural clitic *=page*. Table (1.4 gives the morphological template for the nominal complex.

possession-	**root**	-number	-alienable/inalienable possession	=number

Table 1.3: Morphological Template for the Nominal Complex

The rest of this section will be devoted to describing inflectional categories key to interpreting examples presented in the rest of this thesis.

Person Marking

Matsigenka marks both nominative and accusative arguments on the verb. Subjects are marked with a set of prefixes which attach in the first position on the verbal complex, while objects are marked with a set of clitics which attach to near the of the verbal complex. Table 1.4 shows both the subject and object marking paradigms.

Person	Subject	Object
1st inclusive	no ∼ na-	=na
1st exclusive	a-	=na
2nd	pi- ∼ p-	=Npi
3rd masculine	i- ∼ y- ∼ ir- ∼ -iri	=ri
3rd feminine	o- ∼ ø-[5]	=ro

Table 1.4: Matsigenka Person Marking Paradigms

All subject markers except for the first person exclusive prefix exhibit allomorphy depending on the first segment of the following morpheme. When a subject marker is followed by a consonant, the prefixes *no-*, *pi-*, *i-*, and *o-* are used. When the following morpheme is vowel initial each of these forms undergoes vowel deletion or glide formation, giving rise to the forms *n-*, *p-*, and *y-* and *ø-* respectively. The third person masculine marker also exhibits additional allomorphy in irrealis contexts, surfacing with its suppletive form *ir-* when followed by a vowel, or *iri-* when followed by a consonant. Object suffixes exhibit no allomorphy. Typically, only the direct object is marked, but there are instances where two objects may be marked on the verb[6].

Number

Matsigenka marks number on both the noun and the verb. Matsigenka marks number on the verb with the plural suffix *-hig*. *-hig* may scope over both subject and object positions, which can often lead to ambiguities. In (4), the plural suffix *-hig* can lead to three different interpretations depending on which position it is marking for.

(4)   Ineaigiro

    i-   ne a   **-hig** -ak   -e   =ro
    3MS- see EPV -PL   -PERF -REAL.i =3FO

---

[5]this is meant to represent a null prefix, not the rounded close-mid front vowel

[6]There are no double object constructions present within the data below, but if the reader is interested I direct them towards O'Hagan (2014)

'They saw her.' (plural subject)

'He saw them.' (plural object)

'They saw them.' (plural subject and plural object)

Such ambiguities can be resolved by marking number on the noun. There are several nominal markers for number on nouns, but the most common is the plural suffix *-hegi*, which attaches after the directly after the noun, and the plural clitic *=page*, which attaches at the end of the nominal complex. The utterance in (4) utterance is repeated below, this time disambiguated by the presence of *-hegi* on a nominal referent.

(5)   Ineaigiro tsinaneegi

i-   ne a   **-hig** -i   =ro   tsinane -hegi
3MS- see EPV -PL   -REAL.i =3FO woman -PL

'He saw them (the women).'

Reality Status

One of the primary inflectional categories in Matsigenka is modal category known as Reality Status. According to Michael (2014), reality status is a system that consists of a binary contrast between events that are marked as either realis or irrealis. Events marked as realis include those that have occurred or are occurring, while those marked as irrealis include those that did not occurr, have yet to occur, or occur in a different reality. Table 1.5 below gives an overview of realis and irrealis situations.

Realis	Irrealis
Affirmative Past	Negated Past
Affirmative Present	Negated Present
	Future
	Hypotheticals
	Conditionals

Table 1.5: Reality Status Situations

Reality status is an obligatory inflectional category on all verbs in Matsigenka except for existentials. Realis contexts are marked by a verbal suffix, while irrealis contexts are marked by a verbal circumfix (which will be referred to in terms of its prefixal and suffixal portions). Realis and irrealis suffixal morphemes occupy the the outer most inflectional suffix positions, while the prefixal portion occupies the first inflectional slot.

On the most basic level, allomorphy of reality status morphology is lexically conditioned, with allomorphs being determined by the verb root's class: i-class, a-class or irregular. Within this first level of lexical conditioning, other sub-levels of conditioning occur as well. Reality status paradigms are given in Table 1.6. The i-class realis suffix exhibits two morphologically conditioned allomorphs: *-i* and *-e*. *-e* appears when the realis suffix is preceded by the perfective suffix *-ak*, while *-i* occurs elsewhere. The a-class realis suffix exhibits no allomorphy. Both the i-class and a-class irrealis suffixes exhibit only one allomorph each, *-e* and *-enpa* respectively, however their prefixal portion exhibits a high degree of phonological conditioning. The underlying form of the irrealis prefix is a general nasal that has no predetermined place of articulation. It gets it place of articulation from an immediately following voiceless stop/affricate segment, or else undergoes metathesis or deletion. A summary of this is given in Table 1.7.

	Realis	Irrealis
i-class	-i -e	N- ... -e
a-class	-a	N-...-eNpa

Table 1.6: Matsigenka Reality Status Paradigms

C= stop or affricate
V = vowel

Root Form	Prefix Allomorphy
#C$_{-voice}$	N-
#C$_{+voice}$	ø-
#VC$_{-voice}$	metathesized N-
#VC$_{+voice}$	-ø
elsewhere	-ø

Table 1.7: Irrealis Prefix Allomorphy

Table 1.8: Matsigenka Verbal Complex Template

subject-	irrealis-	**root+derivation**	-quasi-inflection	-directionals	-aspect	-reality status	=object	=subordinators
no- ~ n- 1S inc.	n- irrealis		-hig number	-an ablative	-ak perfective	-i ~ -e, -a realis	=na 1O	
a- 1S excl.				-apah allative	-ø imperfecitve	-e, -enpa irrealis	=npi 2O	
pi- ~ p- 2S				-apanu departive			=ro 3FO	
o- ~ ø- 3FS				-ah regressive			=ri 3MO	
i- ~ y- 3MS				-u returnative				
-ir ~ irri- 3MS.IRR				-apanaa redepartive				

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Chapter 2

Theoretical Background

2.1 Aspect

Many analyses of aspect have been given over the past several decades. Of these, two primary approaches are the viewpoint approach discussed at length by Smith (1997), and the neo-Reichenbachian approach initially put forth by Klein (1994). The approach to aspect in Matsigenka adopted in this thesis will draw from both, utilizing Klein's treatment of grammatical aspect and Smith's treatment of lexical aspect. These two intertwined linguistic systems go by several names, including 'grammatical' and 'lexical aspect', 'viewpoint' and 'situation' aspect, and 'outer' and 'inner' aspect. Throughout the present discussion I will adopt the terms grammatical and lexical aspect[1].

2.1.1 Grammatical Aspect

Grammatical Aspect is often thought of as marking which part of an eventuality a speaker wants to assert information about. Viewpoint approaches treat aspect as the subjective choice of the speaker regarding how much of an eventuality they wish to put in view. These approaches are often vague, using terms such as 'open' and 'closed', 'ongoing' and 'completed', or 'in partial view' and 'in full view' to describe certain aspectual distinctions (Smith, 1997). While these types of binary contrasts are often sufficient to generally describe the semantics of aspectual categories in a given language, it will be helpful in Chapter 5 to situate Matsigenka's aspectual contrasts within a more formal framework. In order to achieve this, I will rely on Klein's neo-Reichenbachian approach to aspectual semantics.

Neo-Reichenbachian approaches view aspectual categories as different topological relationships between two intervals in a three three interval system. The first of these intervals is Utterance Time, which will be abbreviated as TU. TU can be thought as the time as which the utterance is said, and often coincides with the present. The second of these intervals is Topic Time, which will be abbreviated as TT. TT can be thought of as the time interval over which an utterance is asserted. The TT of a given utterance can be given explicitly by temporal adverbials, such as 'yesterday', 'in a few minutes', or 'when I arrived', though it need not be explicitly given. The last of these intervals is Situation Time, which will be abbreviated as TSit. TSit can be thought of as the time during which the entirety of the given eventuality actually took place.

Within this three interval system, Klein proposes that grammatical aspect denotes particular topological relationships between TT and TSit. Different aspectual distinctions can place TT and TSit

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[1]However, for reasons that will become clear in Chapter 5, the reader may wish to keep in mind that terms 'grammatical aspect' and 'viewpoint aspect' are synonymous.

as in partial overlap, containing one another, or disjoint. Two of the most common types of aspectual relationships, and the two most salient in Matsigenka, are the perfective and imperfective aspects.

Perfective aspect can be defined in Klein's framework as TSit being contained within TT. However, this is not the only possible topological relationship marked by the perfective. Another type of perfective has only the end of TSit contained within TT. While this may seem troublesome, when we compare both of these relationships with the viewpoint aspect description of the perfective as showing an eventuality as closed, terminated, or in full view full, it shows that they match our intuitions about what a perfective should be. Diagrams showing both types of perfective relationships are given in (6) and (7), where TSit is represented with a dashed line (- - -), and TT is enclosed with square brackets.

(6) Full Perfective: $[- - -]_{TT}$

(7) Endpoint Perfective: $- - -[- - -]_{TT}$

Another cross-linguistically common type of aspect is the imperfective. Imperfective aspect can be defined in Klien's terminology as TT containing only the internal stages of TSit . Imperfective aspect can be further broken down into subcategories, including habitual, generic, and progressive aspects. In the instance of progressive aspect, TSit can be thought of as the duration of a single eventuality, while in the instances of habitual or generic aspects, TSit can be thought of as the duration of a general or repeated eventuality, that occurs over a longer amount of time. A diagram showing a general imperfective relationship is in (8), following the same notational schema as the perfective diagrams above.

(8) General Imperfective: $- - [- - -]_{TT} - -$

Other aspectual categories exist, such as prospective and perfect aspects, which describe disjoint relationships between TT and TSit. These aspects are found in many of the world's languages, but do not appear in the dedicated aspectual and directional systems of Matsigenka, and thus will not be discussed here further.

2.1.2   Lexical Aspect

Orthogonal to grammatical aspect is the notion of lexical aspect. Lexical aspect specifies the internal structure of an eventuality, and thus interacts with grammatical aspect to a high degree. According to Smith (1997), the different types of lexical aspects can be described in terms of three binary properties: dynamicity, punctuality and telicity.

Dynamicity contrasts eventualities that are dynamic versus those that are static. Static eventualities consist of an undifferentiated period where each subinterval is the same as all other subintervals, while dynamic eventualities can incremented into distinct subintervals. Punctuality contrasts eventualities that are punctual versus durative. Punctual eventualities happen in an instant, while durative eventualities take time. Telicity contrasts eventualities that are telic versus those that are atelic. Telic eventualities have a natural end point or culmination, while atelic ones simply terminate at an arbitrary point. Utilizing these three properties all eventualities can be classified as falling into one of five distinct types of lexical aspect: activities, semelfactives, accomplishments, achievements and statives. Table 2.1 below gives a breakdown of each type with its corresponding properties, and each is discussed further below.

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	Dynamacity	Punctuality	Telicity
Activities	Dynamic	Durative	Atelic
Semelfactives	Dynamic	Punctual	Atelic
Accomplishments	Dynamic	Durative	Telic
Achievments	Dynamic	Punctual	Telic
Statives	Static	Durative	-

Table 2.1: Properties of the Event Types

Activities: Activities are durative, dynamic events that do not have a natural end point. An example of an activity in English is the verb 'shout.' An act of shouting occurs for a period of time, and when it is over no new state has come about. Activities can be represented with the schema in (9), where I and F represent the initial and final endpoints of the eventuality, and . . . represents its internal stages.

(9) I . . . F_{arb}

Semelfactives: Semelfactives are punctual, dynamic events that do not have a natural end point. Semelfactives are different from activities in that they occur instantaneously. An example of a semelfactive in English is the verb 'sneeze'. The act of a single sneeze occurs almost instantaneously, and when it is over the no new state has come about. Semelfactives can be represented with the schema in (10), where E represents the entirety of the punctual event.

(10) E_{arb}

Accomplishments: Accomplishments are durative, dynamic events that do have a natural end point. Accomplishments differ from activities in that they result in a change of state due to the reaching of a goal or the outcome of an event. An example of an accomplishment in English is the verb phrase 'build a house'. The act of building a house occurs for a period of time and when it is completed, a new state has been entered; namely, a new house now exists in the world. Accomplishments can be represented with the schema in (11).

(11) I . . . F_{nat}

Achievements: Achievements are punctual, dynamic events that do have a natural end point. Achievements differ from Accomplishments in that they occur instantaneously. An example of an achievement in English the verb 'realize'. An act of realizing occurs almost instantaneously, and when it is completed, a new state has been entered as a result; namely, the subject is now in the state of knowing something they did not before. Achievements can be represented with the schema in (12).

(12) E_{nat}

Statives: It is important to note that statives are the only type of static eventualities that exist. All static events must be durative because they must of existed for some period of time . Additionally, because no dynamic action is occurring throughout stative eventualities, they are unspecified

for telicty. An example of a stative in English is the verb phrase 'be red.' In order for something to be considered red, it must have had that coloring for some duration of time in the real world. Things that are red typically continue to be red unless they volitionally change or are otherwise acted upon, and have no specified endpoint to their being that color. Statives can be represented with the schema in (13), where —— represents static action.

(13)   (I)——(F)

        As hinted at in some of the examples above, lexical aspect is not a property of the verb, but of the entire lexical content of the VP. This can be easily demonstrated with the addition of a goal to most activities. Consider the following examples in (14).

(14)   a. He walked. (activity)
        b. He walked to school. (accomplishment)

        In (14a), the verb 'walk' functions as an activity. The eventuality occurred for a duration, and when the subject returns to rest he has not undergone a change of state. This can be compared with the sentence in (14b), where the entire phrase 'walk to school' functions as an accomplishment. The eventuality occurred for a duration, and when the subject returns to rest, he has undergone a change of state; namely, he has now entered the state of being at school when he previously was not.
        Though they are two distinct systems, grammatical and lexical aspect interact with one another in significant ways. Many languages have combinatory restrictions when pairing certain grammatical aspects with certain lexical aspects, and certain grammatical aspects can yield different interpretations depending on the type of lexical aspect they are paired with.
        To end this section I will give some brief notes on terminology for the rest of this paper. The terms 'situation' and 'eventuality' will be used interchangeably to refer to real world occurrences that take the form of any of the five lexical aspects. Eventualities/situations will be broken down further into states and events. The use of the term 'event' will refer to any of the four dynamic lexical aspects, while the use of the term 'state' will refer solely to stative eventualities.

2.2   Directionals

2.2.1   The Semantics of Directionals

        Matsigenka exhibits a class of six suffixes that express a variety of motion and temporal meanings. While quite varied, all meanings expressed by these morphemes can be grouped into three distinct classes of meanings: directional, associated motion, and temporal. For both the purposes of expositional convenience and in keeping with tradition in Kampan linguistics (Payne 1982, Michael 2008, Mihas 2015), I will refer to these morphemes as 'directionals'[2], even though these morphemes can express both directional and nondirectional meanings.
        The first of these interpretations is the canonical directional sense. When a directional is interpreted with its strict directional interpretation, it expresses a spatial trajectory for the path of a verb of motion. Directional interpretations can only arise on motion and caused-motion stems[3].
        Directionals can also be attached to non-motion stems to express associated motion. When a directional is used in this way, the encoded motion takes place simultaneously or temporally adjacent to the non-motion eventuality denoted by the stem. In other words, the associated motion occurs prior to, during, or after the eventuality denoted by the stem, and varies based on the directional.

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[2]To avoid ambiguity in the use of the term 'directional', I will refer to the class of directional morphemes simply as 'directionals', and the subset of directional meanings they express as 'directional meanings', 'directional interpretations', or 'path semantics'.
        [3]Motion verbs include verbs such as 'walk', while caused motion verbs include verbs such as 'throw'.

Finally, directionals also have the potential to encode particular aspectual relations and other temporal meanings when attached to various types of verb stems. Some of the possible aspectual relations that Matsigenka directionals take on are more fundamental, such as the progressive, while others are much more specific. Many directionals' aspectual interpretations seem to differ significantly from their directional interpretations, but an attempt will be made to unify these meanings in Chapter 5.

When considering the spatial and temporal information expressed by a specific directional, it is essential to keep several parameters in mind. These parameters include a reference point and the portions of the path that are presupposed and/or entailed. Many directionals differ in only one of these parameters, so much care will be given to developing a functional framework in the next section.

2.2.2   Theoretical Framework

There are several pairs of Matsigenka directionals that express similar meanings, so it important to treat the semantics of their paths with care. This section will outline the framework assumed for interpreting Matsigenka directionals. This model is adapted from Michael (2016), and contains three key components: the origo, the path segment and the topic segment.

It is clear that when talking about Matsigenka directionals, it is necessary to situate them in a framework with at least one spatial dimension. However, in order to properly model the presence of directionality into the model, a temporal component is necessary as well. This motivation for a temporal axis stems from the relational properties inherent to directionals; movement in regards to a reference point can only only be measured over a duration of time, and thus our model must include a temporal axis. This is not to say that it would be impossible to model directionals in terms of only spatial dimensions, but for reasons that will be become clear in chapter 5, including a temporal dimension will prove to be more insightful. Thus, within this framework directionals will be modeled in a 2D spacetime, with time along the horizontal axis, and distance along the vertical. Then, within the plane defined by these axes, I will make use of three specific components.

The first of these components is the origo. The origo is the deictic reference point which motion occurs in relation to, making its defining property its spatial location. I will always place the origo at the zero point on the vertical axis in a directional diagram, thus making the vertical axis absolute distance from the origo, and restricting the diagram to a single quadrant. This is shown in Figure 2.1.
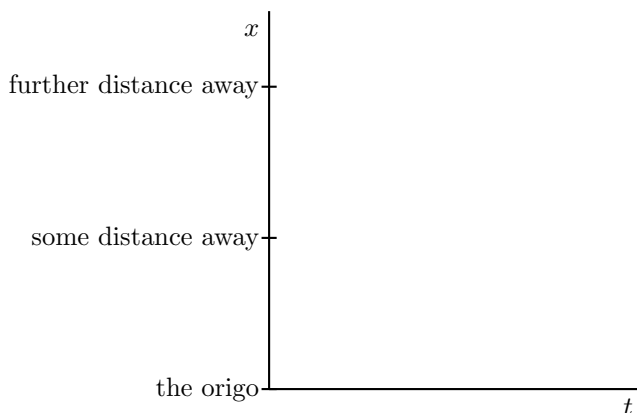

Figure 2.1: The Origo in two Dimensional Space-Time

The second component is the path segment. The path segment can be thought of as the entire path that was traversed in the real world. This can include a source or goal, and in the case of

more complex directionals can include multiple legs. However, it is important to keep in mind that the semantics of directionals only express information about the direction of the path in relation to a reference point. In other words, this means that the speed at which the path was traversed, the length of the path, and certain aspects of the geometry of the path are not necessary to differentiate in our framework. Because of this, the path segment of a given directional can be thought of as a set of all curves that meet specific topological criteria.

For example, the allative *-apah* expresses a directional meaning of towards. Thus, any path that causes the distance between the object in motion and the origo to decrease over time can be thought of as a potential path segment for the allative, regardless of the subjects velocity or other aspects of the path's geometry. Figure 2.2 shows three different possible paths for the allative:
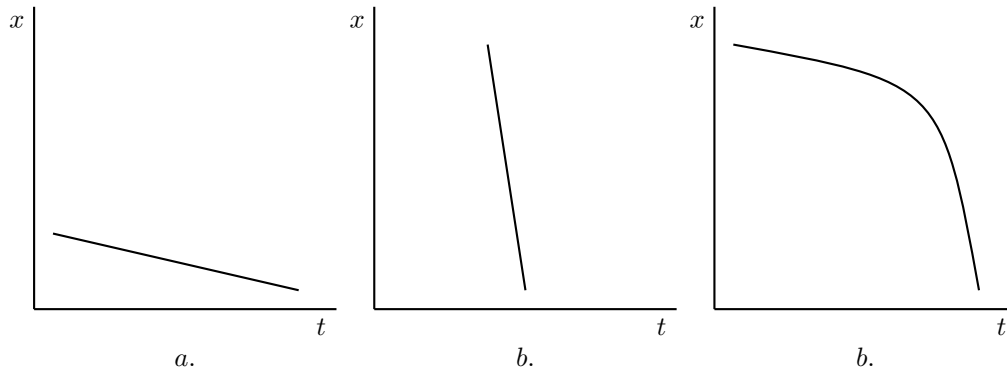
Figure 2.2: Potential Path Segments for the Allative *-apah*

Each of these paths can be thought of as conforming to the meaning of the allative because the distance from the origo decreases as time passes. In Figure 2.2a the subject moves a short distance towards the origo over a long period of time at a rather slow velocity. This can be compared with Figure 2.2b where the subject traverses a much greater distance with a fast velocity, and makes it all the way to the origo. Moreover, figures 2.2a and 2.2b can also be compared with Figure 2.2c, where the subject traverses towards the origo with a varying velocity.

As seen from these three different paths, it seems reasonable to model the path segment of a directional not in terms of a single path, but rather as the set of all paths that match the particular criteria of a given directional. Then, in these terms the allative can be described as taking any single curve that is defined by a monotonically decreasing function of t over the relevant domain. For the purposes of a visual representation within this paper, I will represent the path segment of a given directional by drawing a single, canonical path segment, keeping in mind that only its topological properties are relevant. The canonical path segment for the allative is given in Figure 2.3.

The final component in this framework is the topic segment. While the path segment represents the entire trajectory that was traversed in the real world, the topic segment is the portion of the path which a directional asserts. This means that the topic segment may or may not include the endpoints or even an entire leg of the path. In the case where a path segment has a source or a goal, if it is not included within the topic segment, the directional will not entail departure or arrival, though arrival or departure may still occur. In the case where the topic segment for a directional does not include an entire leg of the path segment, this leg is not asserted and is thus is considered to be presupposed if it occurs before the topic segment, or implied if it occurs after the topic segment. In reality however, no directional in Matsigenka has path segment with an entire leg after the topic segment.

Within the scope of this thesis I will represent the topic segment of a directional by placing square brackets along the path segment, marking the topic segment as being between them. Figure 2.4 once again shows the the path representation for the allative *-apah*, this time with its topic segment
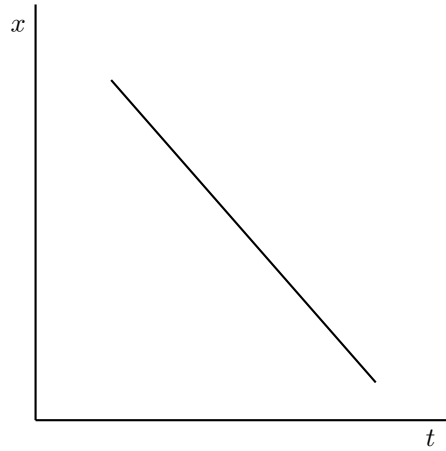
Figure 2.3: Path Segment for the Allative -*apah*

marked. Because -*apah* only denotes motion towards the origo and not arrival at the origo, the topic segment does not include the origo.
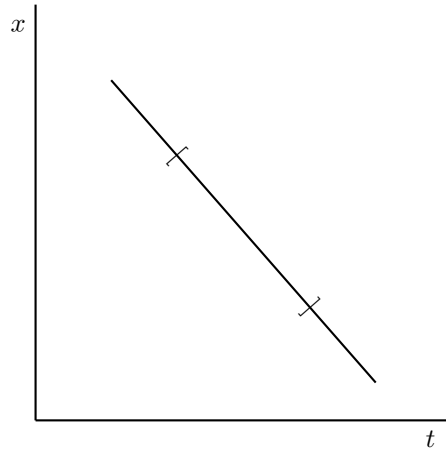
Figure 2.4: The Allative -*apah*

There are several instances in Matsigenka where two directionals differ in only one of the latter two parameters discussed here. Thus, it is important to keep both in mind when discussing the semantics of a given directional. The next chapter will discuss the semantics of each directional in light of this frameowork. Then, in chapter 5, I will attempt to use this framework to show relations between a given directional's path and aspectual semantics.

Chapter 3

Aspect in Matsigenka

Matsigenka marks three primary aspectual distinctions, the perfective, the progressive, and a generic imperfective imperfective aspect. The perfective and progressive aspects are marked with the overt suffixes, while the generic imperfective aspect is marked by a null suffix (-ø). Most aspectual morphology occurs near the end of the verbal complex, just after directional morphology and before reality status morphology. However, the progressive is marked with a collocation of directional and aspectual morphology (see Figure 1.8 for the full verbal template). The rest of this chapter will describe the functions of each aspectual viewpoint in Matsigenka, as well as their interactions with each type of situation aspect. §3.1 will describe the perfective, §3.2 will describe the progressive, and §3.3 will describe the generic imperfective.

3.1 The Perfective

Matsigenka marks perfective aspect with two suffixes, *-ak* and *-ah*. The primary function of *-ak* is to mark for perfective aspect, however when it occurs with the ablative directional *-an* or the allative directional *-apah*, the collocation yields a progressive reading (see §3.2) . In these instances, the regressive directional *-ah* has replaced *-ak* to mark for perfective aspect. The first half of this section will describe the perfective semantics of *-ak*, and the second half will describe the perfective semantics of the regressive directional *-ah*.

Consistent with the functions of the perfective in many other languages (Cover, 2010) *-ak* presents events as terminated or completed, but statives as persisting. These readings come about based on the type of endpoint encompassed within the TT imposed by the perfective viewpoint, and corresponds to the properties of the situation type. For atelic events this is an arbitrary endpoint and thus, *-ak* entails termination of such events. For telic events this is a natural end point, and thus *-ak* entails completion of the event. Additionally, because the entire TSit of a punctual events is necessarily included within *-ak*'s viewpoint, this typically gives rise to non-pluractional reading of semelfactives and achievements. All situations types are given in the perfective in (15) - (19).

(15) Itsaimaitake.

i-	tsamai	t	**-ak**	-e
3MS-	work.in.garden	EPC	-PERF	-REAL.i

'Él ha cultivado.'

'He worked in his garden.' (activity)

(E.MKO.MKD-LDM.120317)

(16) Yateshankake.

y-   ateshank **-ak**   -e
3MS- sneeze   -PERF -REAL.i

'Él estornudó.'

'He sneezed.' (semelfactive)
(E.MKO.MKD-LDM.140217)

(17)   Yovetsikake pitotsi.

y-   ovetsik **-ak**   -e   pitotsi
3MS- make   -PERF -REAL.i canoe

'Él hizo una canoa.'

'He made a canoe.' (accomplishment)
(E.MKO.MKD-LDM.140217)

(18)   Ikamake.

i-   kam **-ak**   -e
3MS- die   -PERF -REAL.i

'Él murió.'

'He died.' (achievement)
(E.MKO.MKD-LDM.180317)

(19)   Ishinetaka.

i-   shine   t   **-ak**   -a
3MS- be.happy EPC -PERF -REAL.a

'Está feliz.'

'He is happy.' (stative)
(MKO.MKD-LDM.180317)

When associated with atelic eventualities, the perfective viewpoint includes an arbitrary end-point of TSit, and thus entails termination of the event. This can be represented with the schemas shown in (20) and (21), where a topic time corresponding to the perfective viewpoint has been imposed on the event structures associated with activities and semelfactives.

(20)   - - $[I \ldots F_{arb}]_{TT}$ - -

(21)   - - $[E_{arb}]_{TT}$ - -

Taking these schemas into account, we should be able to prove that -*ak* is indeed a perfective with cancellation tests. In these tests, a perfective eventuality is coordinated with a second clause that explicitly states that the eventuality has not yet terminated. If it is in fact the case that -*ak*'s viewpoint includes the endpoint of TSit, then atelic eventualities associated with -*ak* that are coordinated with such clauses should be infelicitous. The utterances in (22) and (23) show cancellation tests performed with the activity verb 'speak' and the semelfactive verb 'sneeze'. In both, he coordinated clauses yield the utterances semantically anomalous.[1]

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[1]Following linguistic convention, semantically anomalous examples will be marked with # preceding their transla-tions.

(22) #Iniake, kantankicha tera iragate iniakera.

i-   ni   **-ak** -e,   kantankicha tera   ir-   agat   -e   i-   ni
3MS- speak -PERF -REAL.i but   NEG.REAL 3MS.IRR- reach.terminus -IRR.i 3MS- speak
-ak   -e   =ra
-PERF -IRR.i =SUB

#'Habló, pero no terminó.'
#'He spoke, but he didn't finish speaking.'
(E.MKO.MKD-LDM.180317)

(23) #Yateshankaka, kantankicha tera iragate irateshankempa.

y-   ateshank **-ak** -a   kantankicha tera   ir-   agat   -e
3MS- sneeze   -PERF -REAL.a but   NEG.REAL 3MS.IRR- reach.terminus -IRR.i
ir-   ateshank -empa
3MS.IRR- sneeze   -IRR.a

#'Estornud, pero no terminó.'
#'He sneezed, but he's not finished sneezing.'
(E.MKO.MKD-LDM.180317)

Similarly, when associated with telic actions, the perfective viewpoint includes the natural endpoint of TSit, and thus entails completion of the event. This can be represented with the schemas shown in (24) and (25), where a topic time corresponding to the perfective viewpoint has been imposed on the event structures associated with accomplishments and achievments.

(24)   - - [I ... F_{nat}]$_{TT}$ - -

(25)   - - [E_{nat}]$_{TT}$ - -

Like before, we should be able to use cancellation tests to prove that -*ak*'s viewpoint includes the natural endpoint of telic eventualities, and thus entails their completion. In utterances (26) and (27), -*ak* is associated with the accomplishment verb phrase 'build a house', and the achievement verb 'reach the top (of something)'. In both examples, these eventualities are coordinated with clauses that explicitly state that their secondary states did not come about, and thus they are infelicitous.

(26) #Yovetsikakero ivanko, kantankicha tera iragate irovestikake.

y-   ovetsik **-ak** -e   =ro   i-   vanko kantankicha tera   ir-
3MS- make   -PERF -REAL.i =3FO 3MP- house but   NEG.REAL 3MS.IRR-
agat   -e   ir-   ovestik -ak   -e
reach.terminus -IRR.i 3MS.IRR- make   -PERF -IRR.i

#'Él construyó una casa, pero no lo terminó.'
#'He built his house, but he didn't finish it.'
(E.MKO.MKD-LDM.140217)

(27) #Yagatsonkutake otsihiku chapi, tera irogonketempa.

y-   agatsonku t **-ak** -e   otishi =ku chapi   tera   ir-   ogonke t
3MS- reach.top EPC -PERF -REAL.i hill   =LOC yesterday NEG.REAL 3MS.IRR arrive EPC
-empa
IRR.a

21

#'Ayer subió a la cima del cerro, pero no llegó (a la cima).'

#'He climbed to the top of the hill, but he didn't arrive (at the top)'
(E.MKO.MKD-LDM.180317)

Statives however appear to function differently when bearing *-ak*, and present eventualities as currently persisting in the world. This function runs contradictory to predictions made by Smith (1997), but perfectives have been noted in other languages that do not entail any termination on statives (Cover, 2010). In order to test that *-ak* presents statives as persisting, we should not be able to coordinate a stative eventuality associated with *-ak* and a clause that explicitly states that the states no longer holds. This is shown in (28), where *-ak* is associated with the stative eventuality 'live', and the coordinated clause renders the utterance ungrammatical.

(28) #Otimake Shimaaku, kantankicha tera ontime kara maika.

o-	tim **-ak**	-e	Shimaa =ku,	kantankicha	tera	o-	n-	tim	-e	kara
3FS-	live -PERF	-REAL.i	Shimaa =LOC	but		NEG.REAL	-3FS-	IRR- live	-IRR.i	there

maika
now

#'Ella vive en Shimaa, pero ahora no vive allí.'

#'She lives in Shimaa, but she doesn't live there now.'
(E.MKO.MKD-LDM.140217)

In order to assert that a state held but no longer does, the perfective is most often paired with the frustrative *-ve*. This shown in (28), where 'live' is now associated with both the perfective and the frustrative, and the coordinated clause is now grammatical.

(29) #Otimavetake Shimaaku, kantankicha tera ontime kara maika.

o-	tim a	**-ve**	t	**-ak**	-e	Shimaa =ku,	kantankicha	tera	o-	n-	tim
3FS-	live EPV	-FRUS	EPC	-PERF	REAL.i	Shimaa =LOC	but		NEG.REAL	-3FS-	IRR- live

-e   kara maika
-IRR.i there now

'Ella vivió en Shimaa, pero ahora no vive allí.'

'She used to live in Matoriato, but doesn't live there now.'
(E.MKO.MKD-LDM.140217)

In certain situations where *-ak* has been co-opted into collocations that express progressive aspect (see §3.2), it has been replaced by the regressive directional *-ah*, which occurs on the surface in the same inflectional slot normally occupied by *-ak*. Additionally, I propose that there exist perfective constructions where *-ah* is present underlying to mark perfective aspect, but has been phonologically reduced on the surface (§4.1). The utterances in (30) and (31) show the same scenario, but differ in the viewpoints imposed. In (30), *-ak* is present in two collocations with inherent progressive aspect, while in (31), *-ah* has replaced *-ak* in these collocations to impose a perfective viewpoint.

(30) Maika yogari surari yanuutanake, ogari tsinane anuutapaake.

maika	y-	oga	=ri	surari	y-	anuu t	**-an -ak**	-e	ø-	oga	=ri
now	3MS-	DEM.MED	=CNTR	male	3MS-	walk	EPC -ABL PERF	REAL.i	3FS-	DEM.MED	CNTR

tsinane	ø-	anuu t	**-apa -ak**	-e
female	3FS-	walk	EPC -ALL PERF	REAL.i

'Ahora el hombre está yendo caminando, y la mujer está viniendo caminando para nosotros.'

'Now, the man is walking away (from us), and the woman is walking towards us.'
(E.MKO.MKD-LDM.120317)

(31) Chapi yogari surari yanuutanai, ogari tsinane anuutapai.

chapi	y-	oga	=ri	surari	y-	anuu	t	**-an**	**-ah**	-i	ø-	oga
yesterday	3MS-	DEM.MED	=CNTR	male	3MS-	walk	EPC	-ABL	REG	REAL.i	3FS-	DEM.MED

=ri	tsinane	ø-	anuu	t	**-apah**	**-ah**	-i
CNTR	female	3FS-	walk	EPC	-ALL	REG	REAL.i

'Ayer, el hombre se fue caminando, y la mujer vino caminando para nosotros'

'Yesterday, the man walked away (from us), and the woman walked towards us.'
(E.MKO.MKD-LDM.120317)

The regressive may also replace *-ak* in other contexts as well. A survey of the Matsigenka text corpus reveals that *-ak* may only occur under the scope of negation in cases where it co-occurs with either the ablative or the allative, and is otherwise suppressed. Additionally, the regressive appears with a potentially elevated frequency under the scope of negation, and often does not appear to express its directional or other temporal meanings. While it is not uncommon cross-linguistically for aspectual contrasts to be neutralized under the scope of negation, the presence of progressive aspect under the scope of negation may suggest that the regressive has replaced *-ak* to encode perfective aspect in this context as well. Time did not me permit to investigate this further, but future work should investigate this further.

3.2   The Progressive

Matsigenka marks progressive aspect with the collocation of suffixes *-an-ak*[2]. The progressive in Matsigenka can appear on all five situation types, and can be used to talk about events that are ongoing, or states that recently came about. All situation types are given in the progressive in (32) - (36).

(32) Itsamaitanake.

i-	tsamai	t	**-an**	**-ak**	-e
3MS-	work.in.garden	EPC	-ABL	-PERF	-REAL.i

'Él está cultivando.'

'He is working in his garden.' (activity)
(E.MKO.MKD-LDM.180317)

(33) Yateshankanake.

y-	ateshank	**-an**	**-ak**	-e
3MS-	sneeze	-ABL	-PERF	-REAL.i

'He is/was sneezing.' (semelfactive)
(E.MKO.MKD-LDM.180317)

(34) Yovetsikanake pitotsi.

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[2] Whether *-an-ak* is a collocation of two morphemes or a single fused morpheme is a matter of debate. This is not of concern in the present analysis, but future work should investigate this further.

y-   ovetsik **-an** -ak   -e   canoe
3MS- make   -ABL -PERF -REAL.i canoe

'Él estaba haciendo una canoa.'

'He was making a canoe.' (accomplishment)
(Q.MKO.MKD-LDM.121116)

(35)   Ikamanake.

i-   kam **-an** **-ak**   -e
3mS- die   -ABL -PERF -REAL.i

'Él está muriendo.'

'He is dying.' (achievment)
(E.MKO.MKD-LDM.180317)

(36)   Ishinetanaka.

i-   shine   t   **-an** **-ak**   -a
3mS- be.happy EPC -ABL -PERF -REAL.a

'Se puso feliz.'

'He became happy.' (stative)
(E.MKO.MKD-LDM.180317)

When associated with durative eventualities, the progressive's viewpoint spans the interior of TSit, and excludes both endpoints. This can be represented with the schemas shown in (37) and (38), where a topic time corresponding to the progressive aspect has been imposed on the event structures associated with activities and accomplishments. It can also be noted that the exclusion of both the start and end of an eventuality under the progressive's viewpoint is what gives rise to the 'ongoing' or 'in progress' reading typically associated with progressive eventualities.

(37)   - - - I . [. . .]$_{TT}$. F$_{arb}$ - - -

(38)   - - - I . [. . .]$_{TT}$. F$_{nat}$ - - -

Additionally, because the final endpoint of TSit is excluded under the progressive's viewpoint, nothing is entailed about the termination or completion of activities and accomplishments. To show that there is no associated termination or completion entailment, we can once again turn to coordination tests to both cancel and reinforce termination or completion of the eventuality. The utterances in (39) and (40) show cancellation and reinforcement of termination for the activity verb 'speak', while the utterances in (41) and (42) show cancellation and reinforcement of completion for the accomplishment verb phrase 'make a canoe'.

(39)   Inianake, kantankicha tera iragate iniakera.[3]

i-   nih **-an** **-ak**   -e   kantankicha tera   ir-   agat   -e   i-
3MS- speak -ABL -PERF -REAL.i but   NEG.REAL 3MS.IRR reach.terminus -IRR.i 3MS-
nih   -ak   -e   =ra
speak -PERF -REAL.i =SUB

---

[3]This utterance does not appear in my notes, but I believe that it was elicited with this judgment. Future work should confirm that this is correct.

'Él estababa hablando, pero no terminó.'

'He was speaking, but he didn't finish.'

(40) Inianake, yagatake iniakera.[4]

i-	nih	**-an**	**-ak**	-e	y-	agat	-ak	-e	i-	nih	-ak	-e
3MS-	speak	-ABL	-PERF	-REAL.i	3MS	reach.terminus	-PERF	-REAL.i	3MS-	speak	-PERF	-REAL.i

=ra
=SUB

'Él estababa hablando, y ahora terminó.'

'He was speaking, and now he's finished.'
 (E.MKO.MKD-LDM.180317)

(41) Yovetsikanakero pitotsi, tera iragate yovetsikera.[5]

y-	ovetsik	**-an**	**-ak**	-e	=ro	pitotsi	tera	ir-	agat	-e
3MS-	make	-ABL	-PERF	-REAL.i	=3FO	canoe	NEG.REAL	3MS.IRR-	reach.terminus	-IRR.i

y-	ovetsik	-e	=ra
3MS-	make	-IRR.i	=SUB

'él estaba haciendo una canoa, y no la terminó.'

'He was making a canoe, but he didn't finish it.'

(42) Yovetsikanakero pitotsi, yagatakera.[6]

y-	ovetsik	**-an**	**-ak**	-e	=ro	pitotsi	maika	y-	agat	-ak	-e
3MS-	make	-ABL	-PERF	-REAL.i	=3FO	canoe	now	3MS-	reach.terminus	-PERF	-REAL.i

=ra
=SUB

'él estaba haciendo una canoa, y la terminó.'

'He was making a canoe, and he finished it.'

When attached to punctual events the progressive still yields an ongoing reading, but does so by triggering pragmatic accommodation to presuppositions regarding the event structure associated with the progressive. The need for this accommodation arises due to the fact that punctual events have no internal structure to focus in on, and thus by encompassing any portion of TSit, a given TT will necessarily encompass the entirety of TSit. In the case of semelfactives, TSit is manipulated to coerce a repetitive reading under the progressive, while in the case of achievment, TSit is manipulated to coerce an ongoing reading over some pre-stage of the eventuality. This can be seen in (43) and (44), where a topic time corresponding to the progressive's viewpoint has been imposed on the manipulated event structures associated with semelfactives and achievments.

(43) E_{arb} [E_{arb} E_{arb} E_{arb} $]_{TT}$ E_{arb}

---

[4]This utterance does not appear in my notes, but I believe that it was elicited with this judgment. Future work should confirm that this is correct.

[5]This utterance does not appear in my notes, but I believe that it was elicited with this judgment. Future work should confirm that this is correct.

[6]This utterance does not appear in my notes, but I believe that it was elicited with this judgment. Future work should confirm that this is correct.

(44)   - [- - -]$_{TT}$ - E$_{nat}$

Just like with durative events, we can use coordination tests to show that no entailments follow about the termination or completion of semelfactives and achievements are made. The utterances in (45) and (46) show cancellation and reinforcement of termination for the semelfactive verb 'sneeze'.

(45)   Yateshankanake, kantankicha tera iragate irateshankera.

y-	ateshank	**-an**	**-ak**	-e	kantankicha	tera	ir-	agat	-e
3MS-	sneeze	-ABL	-PERF	-REAL.i	but		NEG.REAL	3MS.IRR	reach.terminus	-IRR.

ir-	ateshank	-e	=ra
3MS.IRR-	sneeze	-irr.i	=SUB

'Estaba estornudando pero no ha terminado de estornudar.'

'He was sneezing, but he isn't finished sneezing.'
(E.MKO.MKD-LDM.180317)

(46)   Yateshankanake, yagatake yateshankera.

y-	ateshank	**-an**	**-ak**	-e	inkaara,	y-	agat	-ak	-e	y-
3MS-	sneeze	-ABL	-PERF	-REAL.i	earlier,	3MS-	reach.terminus	-PERF	-REAL.i	3MS-

ateshank	-e	=ra
sneeze	-REAL.i	=SUB

'Estaba estornudando, y ahora terminado.'

'He was sneezing and now he is finished.'
(E.MKO.MKD-LDM.180317)

I had trouble running coordination tests with an achievement eventuality. While it does seem that imposing viewpoint characteristic of the progressive onto an achievement eventuality does not entail anything about completion, the use of an achievement eventuality in the first place appears to generate a strong implicature that the secondary state was achieved. When given the sentence in (47), my consultant said that it was ungrammatical, and suggested that I use the frustrative *-ve*. However, when given the sentence in (48) and asked whether or not the subject made it to the top, she responded saying that one does not know.

(47)   #Yogatsonkutanake otishiku chapi, kantankicha tera irogonketempa.

y-	ogatsonku	t	**-an**	**-ak**	-e	otishi	=ku	chapi,	kantankicha	tera
3MS-	reach.top	EPC	-ABL	-PERF	-REAL.i	hill	=LOC	yesterday	but	NEG.REAL

ir-	ogonke	t	-empa
3MS.IRR-	arrive	EPC	-IRR.a

#'Él estaba subiendo el cerro ayer, pero no llegó a la cima.'

#'Yesterday he was reaching the top of the hill, but he didn't arrive at the top.'
(E.MKO.MKD-LDM.180317)

(48)   Yagatsonkutanake otishiku chapi.

y-	ogatsonku	t	**-an**	**-ak**	-e	otishi	=ku	chapi
3MS-	reach.top	EPC	-ABL	-PERF	-REAL.i	hill	=LOC	yesterday

'Él estaba subiendo el cerro ayer (no sabemos si ha llegado o no).'

'Yesterday he was reaching the top of the hill (one does not know if he made it to the top or not).'
(E.MKO.MKD-LDM.180317)

Finally, when used with stative eventualities, the progressive yields an inceptive reading. Smith (1997, 74) predicts that progressive viewpoints should be incompatible with statives, but work on more diverse languages has shown that statives marked for the progressive can yield an inceptive reading (Cover, 2010; Michaelis et al., 2013). Indeed, given that in Matsigenka the perfective is used to depict states that are ongoing (See §3.1), it does not seem farfetched that the progressive could take on another aspectual function with statives. The utterances in (49) and (50) show the differing interpretations between statives associated with with *-ak* and *-an-ak*.

(49) Ishinetaka.

i-   shine   t   **-ak**   -a
3MS- be.happy EPC -PERF -REAL.a

'Ésta feliz.'

'He is happy.'
(E.MKO.MKD-LDM.180317)

(50) Ishinetanaka

i-   shine   t   **-an -ak**   -a
3MS- be.happy EPC -ABL -PERF -REAL.a

'Se puso feliz.'

'He became happy.'
(E.MKO.MKD-LDM.180317)

3.3   The Generic Imperfective

Not all Matsigenka verbs bear overt aspectual morphology. In the instances where no overt aspectual morphology is present, these stems typically take on non-progressive imperfective interpretations. Due to the aspectual contrasts that can be made between forms marked with perfective or progressive morphemes, and bare forms, I will posit that bare forms actually take a null suffix, -ø, and are inflected for imperfective aspect. Just like the perfective and the progressive, the imperfective can occur on all situation types. All situation are given in the imperfect in (51) - (55).

(51) Itsamaiti.

i-   tsamai   t   **-ø**   -i
3MS- work.in.garden EPC -IMPF -REAL.i

'Él trabaja (en la chacra).'

'He works in gardens (i.e he does so often or his profession is working in gardens).' (activity)
(E.MKO.MKD-LDM.180317)

(52) Yateshanki.

y-   ateshank **-ø**   -i
3MS- sneeze   -IMPF -REAL.i

"Él estornuda.'

'He sneezes (i.e. as if he has allergies).' (semelfactive)
(E.MKO.MKD-LDM.180317)

(53) Itogeseti tsamairintsi.

i-   togese   t   **-ø**   -i   tsamai -rintsi
3MS- clear.garden EPC -IMPF -REAL.i garden -ALIEN

'Él hace roce.'

'He clears gardens (i.e. he does so often or his profession is clearing gardens).' (accomplishment)
(E.MKO.MKD-LDM.180317)

(54) Yovatui shivitsa.

y-   ovatuh   **-ø**   -i   shivatsa
3MS- cut.in.two -IMPF -REAL.i rope

'Él corta la soga.'

'He cuts rope (i.e. he does so often).' (achievement)
(E.MKO.MKD-LDM.180317)

(55) Ishineta.

i-   shine   t   **-ø**   -a
3MS- be.happy EPC -IMPF -REAL.a

'Él se pone contento.'

'He gets happy (often).' (stative)
(E.MKO.MKD-LDM.180317)

Time did not permit me to carry out coordination tests for each eventuality and imperfective aspect, but future research should attempt to do so to verify that this analysis is correct.

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Chapter 4

Directionals

Matsigenka directionals consist of a class of six suffixes: the allative *-apah*, the ablative *-an*, the departive *-apanu*, the regressive *-ah*, the returnative *-u*, and the redepartive *-apanaa*. Directional morphology occurs near the end of the verbal complex, after all derivational morphology and just before aspectual morphology (see Figure 1.8 for the full verbal template). This section will describe the semantics of each Matsigenka Directional, including their conical directional semantics, associated motion semantics, and temporal semantics. The section builds on previous work in Michael (2016), which outlines the path and topic segments assumed below.

4.1 The Allative *-apah*

Directional

Matsigenka marks movement towards a deictic reference point with the allative directional suffix *-apah*. The path diagram for the allative is given in Figure 4.1. As noted in §2.2.2, the possible paths that the allative can take as its path segment consists of the set of all curves that are monotonically decreasing over all t for which the path segment is defined. The allative can be used with any path geometry directed towards the origo, regardless of whether the path reaches the origo or not. The topic segment for the allative spans the interior of the path segment, and does not include either end point. Thus, even in the case where the path segment reaches the origo, the use of *-apah* does not entail arrival at the origo.

The utterance in (56) shows the allative attached to motion eventuality 'walk', where it can be interpreted with its directional meaning. Here, *-apah* indicates that the woman is walking towards the speaker, but does not entail that she arrived at the location of the speaker.

(56) Maika yogari surari yanuutanake, ogari tsinane anuutapaake.

maika	y-	oga	=ri	surari	y-	anuu	t	-an	-ak	-e	ø-	oga	=ri
now	3MS-	DEM.MED	=CNTR	male	3MS-	walk	EPC	-ABL	PERF	REAL.i	3FS-	DEM.MED	CNTR

tsinane	ø-	anuu	t	**-apa**	-ak	-e
female	3FS-	walk	EPC	**-ALL**	PERF	REAL.i

'Ahora el hombre está yendo caminando, y la mujer está viniendo caminando para nosotros.'

'Now, the man is walking away (from us), and the woman is walking towards us.'
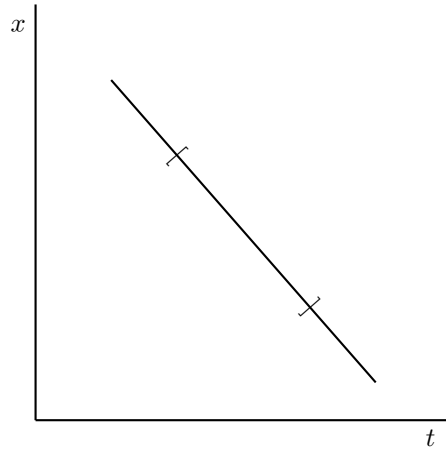(E.MKO.MKD-LDM.120317)

Figure 4.1: The Allative *-apah*

Associated Motion

When the allative is attached to dynamic non-motion eventualities, it yields an associated motion interpretation. When the allative expresses its associated motion meaning, it indicates that the subject arrived at the origo just prior to carrying out the eventuality modified by *-apah*. The utterance in (57) shows the allative attached to the eventuality 'say', where it can be interpreted with its associated motion meaning. Here, *-apah* associates motion with the man's speaking, and indicates that he arrived at where to woman is just prior to speaking.

(57) Irirori ikantapaakero:

iriro   =ro   i-   kant **-apah** -ak   -e   =ro
3M.PRO =CNTR 3MS- say   -ALL   PERF -REAL.i =3FO

'El le dijo:'
'Upon arriving he said to her:'
(T.ART.HVP.33)

Additionally, some examples exist where the ablative associates simultaneous motion towards the origo with the eventuality it modifies. All examples observed thus far have been complements to verbs of motion, but the exact conditioning for each of these two associated motion meanings should be investigated in the future. The utterance in (58) shows the allative attached to the eventuality 'speak', which is the complement of the verb 'hear'. Here, *-apah* marks that the man is walking towards the woman while he is speaking.

(58) Irorori otsaroganake omanaka, kantankicha okemiri iniapai, irorori teratyo ankeri.

iroro   =ri   o-   tsarog   -an -ak -e   ø-   oman -an -ak   -a,
3F.PRO =CNTR 3FS- be.frightened -ABL PERF REAL.i 3FS- hide   ABL -PERF REAL.a
kantankicha o-   kem -i   =ri   i-   nih   **-apah** -ah -i,   iroro   =ri
but   3FS- hear REAL.i =3MO 3MS- speak ALL   -REG REAL.i 3F.PRO CNTR
tera   =tyo   ø-   n-   ak   -e   =ri
NEG.REAL AFFECT 3FS- IRR- respond PERF -IRR.i

'Ella de miedo se escondío pero escucho que hablaba, ella no respondío.'

30

'She became frightened and she hid herself, but she heard him speaking as he approached.'
(T.OSK.HVP.08)

Temporal

When the allative is attached to stative eventualities, it yields a temporal interpretation, indicating that the state it modifies is near its most extreme value. The utterance in (59) shows the allative attached to the stative eventuality 'be low (water level)', where it can be interpreted with its temporal meaning. Here, -*apah* indicates that the water level of the river is at is lowest point, indicating that the dry season has come about.

(59) Oshiriagatapaakara iporoake itsamaire omarane.

o-	shiriaga	t	**-apah**	-ak	-e	=ra	i-	poroh		-ak
3FS-	go.down.(water.level)	EPC	ALL	-PERF	REAL.i	=SUB	3MS-	CLEAR.GARDEN	PERF	

-e	i-	tsamai	-re	o-	marane
-REAL.i	3MP-	cultivate	-NOMZ.INALIEN	3F.MOD-	big

'Al llegar el verano, realizó roce de una enorme chacra.'

'When the dry season arrived, he cleared a large garden.'
(T.ART.HVP.44)

Aspectual Contrasts

In instances where the allative co-occurs with the suffix -*ak*, the aspectual interpretation is a progressive. This is the case when -*apah* is interpreted as having its directional meaning, and I hypothesize the same is true when -*apah* is interpreted with its associated motion. In order to inflect utterances with the allative, under its directional interpretation, for perfective aspect, the morpheme -*ak* is omitted. Based on the pattern observed with the ablative (see §4.2), I hypothesize that the regressive -*ah* is underlyingly present in these instances to mark for perfective aspect, and has been phonologically reduced on the surface. The utterance in (60) shows the same scenario as in (56), but this time the utterance has been inflected for perfective aspect. For the purposes of illustration I have included the regressive in my segmentation, but future research should be carried out to verify its presence.

(60) Chapi yogari surari yanuutanai, ogari tsinane anuutapai.

chapi	y-	oga	=ri	surari	y-	anuu	t	-an	-ah	-i	ø-	oga
yesterday	3MS-	DEM.MED	=CNTR	male	3MS-	walk	EPC	-ABL	REG	REAL.i	3FS-	DEM.MED

=ri	tsinane	ø-	anuu	t	**-apah**	**-ah**	-i
CNTR	female	3FS-	walk	EPC	-ALL	REG	REAL.i

'Ayer, el hombre se fue caminando, y la mujer vino caminando para nosotros'

'Yesterday, the man walked away (from us), and the woman walked towards us.'
(E.MKO.MKD-LDM.120317)

4.2 The Ablative -*an*

Directional

Matsigenka marks movement away from a deictic reference point with the ablative directional suffix -*an*. The path diagram for the ablative is given in Figure 4.2. The possible paths that the

ablative can take as its path segment consists of the set of all curves that are monotonically increasing over all t for which the path segment is defined. The ablative can be used with any path geometry directed away from the origo, regardless of whether the path began at the origo or not. The topic segment for the allative spans the interior of the path segment, and does not include either end point. Thus, even in the case where the path segment begins at the origo, the use of *-an* does not entail departure from the origo.
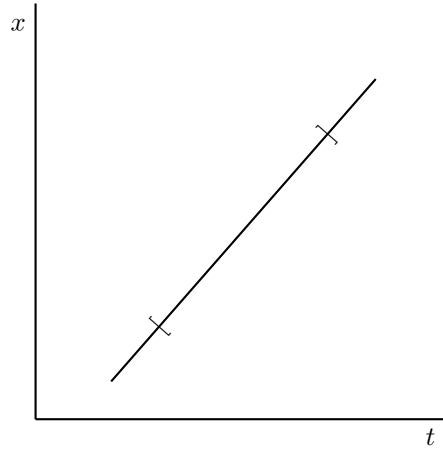

Figure 4.2: The Ablative $-an$

The utterance in (61) shows the ablative attached to the motion eventuality 'walk', where it can be interpreted with its directional meaning. Here, *-an* indicates that the man is walking away from the speaker, but does not entail that he left from the location of the speaker.

(61) Maika yogari surari yanuutanake, ogari tsinane anuutapake.

maika	y-	oga	=ri	surari	y-	anuu	t	**-an**	-ak	-e	ø-	oga	=ri
now	3MS-	DEM.MED	=CNTR	male	3MS-	walk	EPC	-ABL	PERF	REAL.i	3FS-	DEM.MED	CNTR

tsinane	ø-	anuu	t	-apa	-ak	-e
female	3FS-	walk	EPC	-ALL	PERF	REAL.i

'Ahora el hombre está yendo caminando, y la mujer está viniendo caminando para nosotros.'

'Now, the man is walking away (from us) and the woman is walking towards us.'
(E.MKO.MKD-LDM.120317)

Associated Motion

When the ablative is attached to dynamic non-motion eventualities, it can yield an associated motion interpretation. When the ablative expresses its associated motion meaning, it indicates that the subject leaves the origo just after carrying out the eventuality modified by *-an*. The utterance in (62) shows the ablative attached to the eventuality 'eat', where it can be interpreted with its associated motion meaning. Here, *-an* associates motion with the woman's eating, and indicates that she left the origo after she stopped eating.

(62) Osektanaka inkaara.

o-	seka	t	**-an**	-ak	-a	inkaara
3FS-	eat	EPC	-ABL	-PERF	-REAL.a	earlier

'Comió y se fue.'

'She ate earlier and left.'
(E.MKO.MKD-LDM.250217)

Temporal

As seen in §3.2, the ablative -*an* can be used to mark the progressive aspect on events, and functions as an inceptive on statives. Examples of the ablative being interpreted as a progressive and inceptive are reproduced below in (63) and (64). For further discussion see §3.2.

(63) Itsamaitanake.

i-   tsamai   t   **-an -ak**   -e
3MS- work.in.garden EPC -ABL -PERF -REAL.i

'Él está cultivando.'

'He is/was working in his garden.'
(E.MKO.MKD-LDM.180317)

(64) Ishinetanaka.

i-   shine   t   **-an -ak**   -a
3MS- be.happy EPC -ABL -PERF -REAL.a

'Se puso feliz.'

'He became happy.'
(E.MKO.MKD-LDM.180317)

Aspectual Contrasts

In instances where the ablative co-occurs with the suffix -*ak*, the inherent aspectual interpretation is progressive. This is the case when -*an* is interpreted as having its directional meaning, and I hypothesize the same is true when -*an* is interpreted with its associated motion meaning. In order to inflect an utterance with the ablative, under its directional interpretation, for perfective aspect, the ablative is paired with the regressive -*ah* (see §3.1). The utterance in (65) shows the same scenario as in (61), but this time the utterance has been inflected for perfective aspect.

(65) Chapi yogari surari yanuutanai, ogari tsinane anuutapai.

chapi   y-   oga   =ri   surari y-   anuu t   **-an -ah** -i   ø-   oga
yesterday 3MS- DEM.MED =CNTR male   3MS- walk EPC -ABL REG REAL.i 3FS- DEM.MED
=ri   tsinane ø-   anuu t   -apah -ah -i
CNTR female 3FS- walk EPC -ALL   REG REAL.i

'Ayer, el hombre se fue caminando, y la mujer vino caminando para nosotros.'

'Yesterday, the man walked away (from us), and the woman walked towards us.'
(E.MKO.MKD-LDM.120317)

4.3 The Departive *-apanu*

Directional

Matsigenka also marks movement away from a deictic reference point with a second directional, the departive *-apanu*. The path diagram for the departive is given in Figure 4.3. The possible paths that the departive can take as its path segment consists of the set of all curves that are monotonically increasing over all t for which the path segment is defined. The departive can be distinguished from the ablative in terms of its topic segment, which minimally includes the origo at the initial endpoint, and excludes the final endpoint. Thus use of the departive entails departure from the origo.
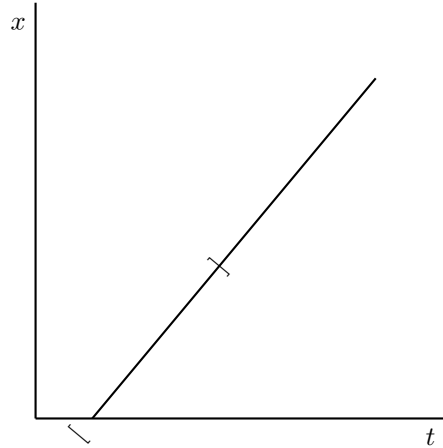

Figure 4.3: The Departive *-apanu*

The utterance in (66) shows the departive attached to the motion eventuality 'walk', where it can be interpreted with its directional meaning. Here, *-apanu* indicates that the man walked away from the speaker, and entails that he left from the location of the speaker. The contrast between the ablative and the departive can be unclear with examples in isolation, but when presented with a minimal pair with that differed in the presence of *-an* vs. *-apanu*, my consultant gave the commentary presented in (67) and (68).

(66) Yanuutapanuti.

y-   anuu t   **-apanu** t   -i
3MS- walk EPC -DEP   EPC REAL.i

'Se fue caminando.'

'He went away, walking'.
(E.MKO.MKD-LDM.080417)

(67) Yanuutanake.

y-   anuu t   **-an** -ak   -e
3MS- walk EPC -ABL PERF REAL.i

'Está caminando (ruta larga).'

'He is going away, walking (on a substantial walk)'.
(E.MKO.MKD-LDM.080417)

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(68) Yanuutapanuti.

y-   anuu t   **-apanu** t   -i
3MS- walk EPC -DEP   EPC REAL.i

'Está / se fue caminando (de acá).'

'He is going away / went away, walking (from here).'
(E.MKO.MKD-LDM.080417)

Associated Motion

When the departive is attached to dynamic non-motion eventualities, it can yield an associated motion interpretation. When the departive expresses it associated motion meaning, it indicates that the subject leaves the origo as they are carrying out the eventuality modified by *-apanu*. The utterance in (69) shows the departive attached to the eventuality 'call to', where it can be interpreted with its associated motion meaning. Here, *-apanu* associates motion with the man's calling, and indicates that he calls out while leaving the origo.

(69) Ikaemakotapanutirira:

i-   kaem -ako   t   **-apanu** t   -i   =ri   =ra
3MS- call.to -APPLY:INDR EPC -DEP   EPC -REAL.i =3MO =SUB

'Se fue gritandole:'

'He called out (to him) as he departed:'
(T.SPR.HVP.40)

Additionally, my consultant gave the interpretation of 'come, do, and leave', as another possible associated motion meaning for the departive. The meaning has not been previously documented with other speakers, and I was unable to investigate it further.

Temporal

The departive can also function as a marker of inceptive aspect, meaning that that the viewpoint on the eventuality is focused on its initiation. The utterance in (70) shows the departive attached attached to the stative eventuality 'be low (water level)', where it can be interpreted with its temporal meaning[1]. Here, *-apanu* indicates that the water level (of the river) began to decrease. Likewise *-apanu* is attached to the stative verb 'be a little', where it indicates that this new state of being reduced is just beginning.

(70) Paita agatakera ovoretakera, oshiriagapanuta, omaaniaatapanuti.

paita ø- agat   -ak e   =ra o- vore t   -ak -e   =ra o-
later 3FS- reach.terminus -PERF -REAL.i =SUB 3FS- be.wave EPC -PERF -REAL.i =SUB 3FS-
shiriag   **-apanu** t   -a   o- maanih a   -ha   t   **-apanu** t
go.down.(water.level) -DEP   EPC -REAL.a 3FS- be.a.little EPV -CL:fluid EPC -DEP   EPC
-i
-REAL.i

_____

[1]An alternative reading for this could be that the water level is going down because the water is leaving, going away from the witness.

'Después de terminar las oleadas, bajó el caudal, quedándose muy poquito.'

'After the waves finished, the water level began to go down, leaving very little.'
(T.OSA.HVP.20)

Aspectual Contrasts

The departive cannot co-occur with the suffix *-ak* or the regressive *-ah*, and it is unkown at this time if/how aspectual contrasts can marked when *-apanu* is present.

4.4   The Regressive *-ah*

Directional

Matsigenka also contains directionals that denote complex path geometries. The first of these is the regressive *-ah*, whose path diagram is given in Figure 4.4. The possible paths that the regressive can take as its path segment consists of the set of all bitonic curves that first increase and then decrease over the temporal interval on which the path segment is defined. The topic segment for the regressive minimally includes the origo at the endpoint of path segment, and excludes starting point and distal location. Thus, the use of the regressive entails arrival back at the origo, but only presupposes the initial departure. It should be noted that the use of *-ah* places no explicit restrictions on the amount of time the subject in motion may spend at the distal location. I hypothesize that this is pragmatically restricted, but because the directional framework only represents a canonical path segment, this is is left to future research.
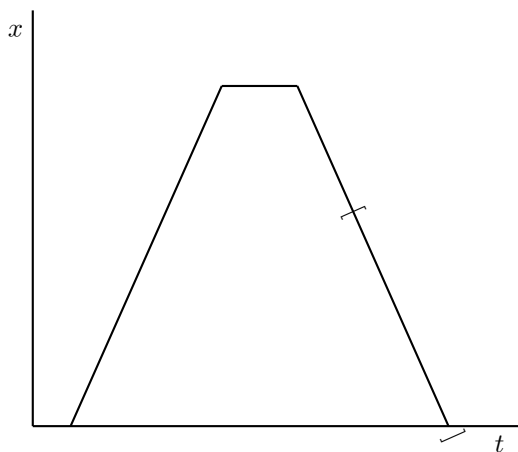

Figure 4.4: The Regressive *-ah*

The utterance in (71) shows the regressive attached to the motion eventuality 'walk', where it can be interpreted with its directional meaning. Here, *-ah* indicates that the man returned to the location of speaker, presupposing that he had left from there earlier.

(71)   Yanuutai.

y-   anuu t   **-ah** -i
3MS- walk EPC -REG REAL.i

'Vino caminando, ha vuelto.'

36

'He came walking, returning.'
(E.MKO.MKD-LDM.080417)

Associated Motion

The regressive -*ah* does not appear to have any associated motion interpretation.

Temporal

As noted in §3.1, the regressive -*ah* can be used to mark for perfective aspect in cases where the normal perfective suffix -*ak* has been co-opted as a part of another construction. In addition to this meaning, the regressive can take on other temporal interpretations, indicating that a subject is resuming or repeating an action. The utterance in (72) shows the regressive attached to the eventuality 'fell tree', where it can be interpreted with this other temporal meaning. Here, -*ah* presupposes that the subject had previously been chopping a tree and taken pause, and indicates that he has now returned to his work.

(72) Yagatanakera yovetsikagisetakera iatai itogaira, inpo inei ikovaanake.

y-   agat   t   -an -ak   -e   =ra   y-   ovetsikagise t   -ak   -e
3MS- reach.terminus EPC -ABL -PERF -REAL.i =SUB 3MS- have.sex   EPC -PERF -REAL.i
=ra i-   a   t   -ah -i   i-   tog   **-ah** -i   =ra   inpo i-   neh -i
=SUB 3MS- go EPC -REG -REAL.i 3MS- fell.tree -REG -REAL.i =SUB, then 3MS- feel -REAL.i
i-   kovah   -an -ak   -e
3MS- have.fever -ABL -PERF -REAL.i

'Al terminar de hacer relaciones sexuales se fue a seguir tumbando, pero sintió que le daba fiebre.'

'When he finished having sex, he went back and resumed felling (the tree), and then he felt a fever coming on.'
(T.ART. HVP.31)

Aspectual Contrasts

The presence of the regressive appears to force a perfective interpretation in all cases. Based on a brief discussion with my consultant, it seems that imposing a viewpoint corresponding to a progressive on utterances that take -*ah*'s directional interpretation is not possible, and the allative is used instead. However, this should be investigated further in the future.

4.5   The Returnative -*u*

Directional

Much like the regressive -*ah*, the returnative -*u*[2] is also used to describe round trip paths. The path diagram for the returnative is given below in Figure 4.5. Just like the regressive, the possible paths that the returnative can take as its path segment consists of the set of all bitonic curves that

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[2]The exact phonological form of the returnative suffix is ambiguous. The set of suffixes that can follow directionals are all vowel initial, and so the returnative is always realized on the surface as the string /-*ut*/. Whether the underlying form suffix is /-*ut*/, or /-*u*/ and the /-*ut* is epenthesized, is ambiguous. However, for the purposes of expositional convenience I will take its form to be /-*ut*/.

first increase and then decrease over the temporal interval on which the path segment is defined. The returnative can be distinguished from the regressive in terms of its topic segment, which spans the interior of the path segment, and excludes both endpoints. Thus, the use of the returnative does not entail departure or arrival back at the origo. The returnative also places no explicit restrictions on the amount of time the subject in motion may spend as the distal location, but similarly I hypothesize that this is pragmatically restricted.
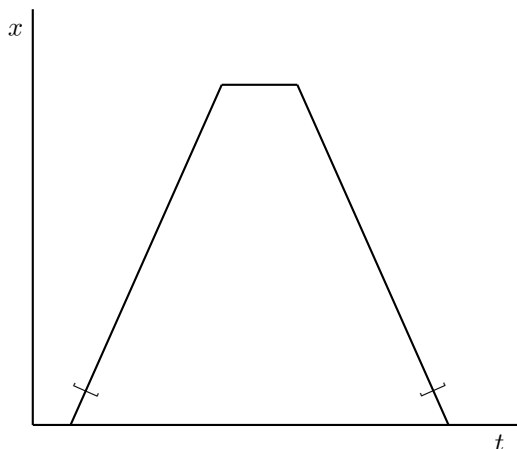

Figure 4.5: The Returnative $-u$

The utterance in (73) shows the returnative attached to the motion eventuality 'run', where it can be interpreted with its directional meaning. Here, -u indicates that the man ran away and returned, but does not entail that he started at or returned to the exact location of the origo. Note that translation explicitly mentions both the outbound and inbound legs of the trip, which can be compared with the use of the regressive in (71), where the translation only mentions the return trip.

(73) Ishiguta.

i-   shig **-u**   t   -a
3MS- run -RET EPC -REAL.a

'Fue corriendo y regresso corriendo.'

'He ran away and ran back.'
(E.MKO.MKD-LDM.080417)

Association Motion

When the returnative is attached to dynamic non-motion related eventualities, it can yield an associated motion interpretation. When the returnative expresses its associated motion meaning, it indicates that the subject goes to a distal location to carry out the eventuality modified by -u, and then returns. The utterance in (74) shows the returnative attached to the eventuality 'sleep', where it can be interpreted with its associated motion meaning. Here, -u associates motion with the man's sleeping, and indicates that he went somewhere else to sleep, and then returned to the origo after waking up.

(74) Imaguti.

i-   mag **-u**   t   -a
3MS- sleep -RET EPC -REAL.i

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'Se fue a otro sitio para dormir, y regressó.'

'He went to sleep and came back.'
(E.MKO.MKD-LDM.080417)

Temporal

When the returnative is attached to stative eventualities, it yields a temporal interpretation expressing that the eventuality it modifies existed for a relatively breif period of time. The utterance in (75) shows the returnative attached to the same eventuality as in (74), where it can also be interpreted with its temporal meaning. Here, *-u* indicates that the man slept for only a short while beofre waking up again.

(75) Imaguti.

i-   mag **-u**   t   -i
3MS- sleep RET EPC -REAL.i

'Un ratito se durmió.'

'He slept for a bit.'
(E.MKO.MKD-LDM.080417)

Aspectual Contrasts

The returnative cannot co-occur with the suffix *-ak* or the regressive *-ah*, and it is unkown at this time if/how aspectual contrasts can marked when *-u* is present.

4.6   The Redepartive *-apanaa*

Previous work on Matsigenka has shown there to be a sixth directional in some dialects of Matsigenka, the redepartive *-apanaa*. The redepartive was minimally present in my consultant's lexicon, and quite often she asked if I meant to use the departive *-apanu*. Due to this, eliciting examples with the redepartive was quite difficult, and I was not able to gather sufficient data. Previous work has suggested the redepartive to reference tritonic path segments, and denote a topic segment that spans only the interior portion of the third leg of the path. Figure 4.6 below shows the most plausible path diagram for the redepartive given current knowledge.
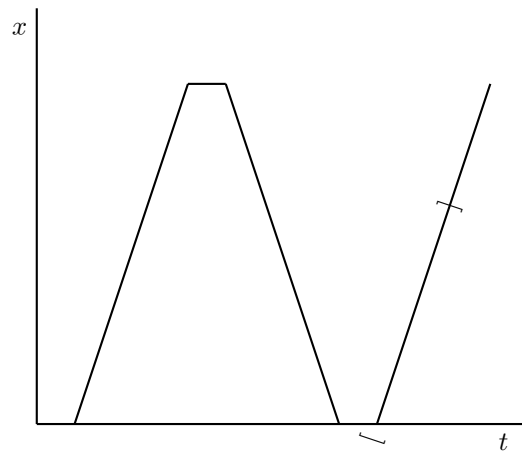
Figure 4.6: The Redepartive *-apanaa*

Chapter 5

Viewpoints and Eventualities

5.1 Previous work

Previous work on directionals in Matsigenka and other Kampan languages has noted their diverse range of meanings. Payne (1982) describes the many functions of three directionals in Ashéninka, two of which are likely cognate to Matsigenka's own ablative and allative directional suffixes respectively. In her work, Payne outlines the directional and temporal meanings of each suffix, and claims that these different interpretations arise based on whether the suffix is acting with a clause-level or narrative-level scope. Likewise, Michael (2008) and Mihas (2010) note the combination of spatial and temporal meanings expressed by cognates of these same two directional suffixes in Nanti and Ashéninka Perené respectively, but do not propose in depth theoretical analyseses for their semantics. Finally, Michael (2016) notes the the same range of meanings denoted by Matsigenka directionals discussed above, and proposes an analysis of these meanings that forms basis of the analysis developed below.

5.2 Projection

As shown in Chapter 4, Matsigenka directionals take on a wide range of meanings that denote both spatial and temporal relations. This section will be devoted to exploring the relationships between several directionals' path and aspectual interpretations. In previous sections, I have taken great care to describe Matsigenka directional and aspectual semantics within explicit frameworks in order to set up a means of relating these two semantic domains. More specifically, my approach for relating these two semantic domains will lie in observing similarities between the components that these two frameworks share. Then, this will lead me to claim that the key insight that allows us to understand the relationship between the path and aspectual semantics associated with Matsigenka directional suffixes is their similar expressions of the relationship between the duration of an eventuality and a viewpoint imposed upon it.

I will begin by considering what these two frameworks share. First, both contain components that represent the duration of a real world eventuality. Within a neo-Reichenbachian framework, this component is the situation time. The situation time represents a real world eventuality, and spans the entire duration the eventuality along the temporal dimension. Within a directional framework, this component is the path segment. The path segment represents the entire path traversed during a real world motion eventuality, and spans the entire duration of the eventuality along the temporal dimension and the entire length of the path along the spatial dimension.

Second, both frameworks make use of a viewpoint. Within a neo-Reichenbachian framework, the topic time functions as a viewpoint that focuses in on a particular portion of an eventuality's structure. In this way, the topic time can be used to assert a particular portion of an eventuality

as occurring in the real world, while presupposing the remainder. Likewise, within a directional framework, the topic segment functions as a spatio-temporal viewpoint that focuses in on a particular portion of the entire motion eventuality. Similar to the topic time, the topic segment can used in this way to assert only a portion of the path as being traversed in the real world, while presupposing movement along the rest.

Third, both frameworks can be thought of as denoting particular topological relations between their eventuality and viewpoint components. Within a neo-Reichenbachian framework, specific aspectual relationships are distinguished by the type of topological relationship that exists between the situation and topic times. Likewise, within a directional framework, different directionals are distinguished by the relative direction of the path they assume *and* the topological relationship between that path and the topic segments.

The final similarity between these two frameworks is their incorporation of a temporal dimension. Both make use of a temporal dimension to parameterize the length of the intervals corresponding the eventuality and viewpoint representations. However, it should also be noted that the directional framework also makes use of a second, spatial, dimension in its parametrization of these intervals. This begs the next question: How do these two frameworks differ?

The primary difference between these two frameworks is the directional framework's inclusion of a spatial dimension. As noted in §2.2.2, the inclusion of the spatial dimension is motivated by the need to parameterize the geometry of each directional's assumed path, relative to the remaining component of the framework, the origo. If the ultimate goal is to compare the the shared elements between these representations of aspectual and directional semantics, it is clear that we must find a way to disregard the directional framework's spatial dimension. In order to do this, I propose projecting a given directional's two dimensional spatio-temporal representation into a one dimensional form on the time axis. If we do this, the resulting figure can no longer include any distinctions along a spatial parameter, and thus the origo will also no longer be present. Additionally, we will see later that it is important to note that this move achieves our goal while preserving the topological relationships between the path and topic segments in the remaining representation, which I will refer to as the path projection.

Now that I have proposed a means of relating a given directionals path and aspectual semantics, the remainder of this chapter will be devoted to examining what insights can be gained by noting the similarities between a given directional's path projection and neo-Reichenbachian representation. I will do so with each of the four Matsigenka directionals that can assume temporal interpretations that are traditionally described as aspectual relations: the ablative *-an*, the allative *-apa*, the regressive *-ah*, and the departive *-apanu*.

First let us examine the ablative *-an*. As noted in §4.2, *-an* can be used to mark progressive aspect when it co-occurs with the suffix *-ak*. Additionally, even when expressing a directional meaning, it still expresses a progressive meaning unless paired with the regressive *-ah*. Figure 5.1 shows the directional diagram for *-an* on the left, the corresponding path projection in the middle, and the neo-Reichenbachian representation of the progressive aspect on the right. Looking at the path projection, we can see that the viewpoint component of this model, the topic segment, contains only the interior portion of the eventuality component, the path segment. This is exactly the same as topological relationship represented by the neo-Reichenbachian representation of the progressive, where the viewpoint component, the topic time, contains only the interior portion of the eventuality component, the situation time. Looking at these two models for the ablative *-an* it seems clear; the ablative's path and aspectual semantics are related by the topological relationship between their eventuality and viewpoint components.

Next, I will consider the allative *-apah*. As noted in §4.1, *-apah* is similar to *-an* in that it yields a progressive meaning when expressing its directional and temporal interpretations, unless paired with the regressive *-ah*. Figure 5.2 shows the directional diagram for *-apah* on the left, the corresponding path projection in the middle, and the neo-rechenbachian representation of the progressive aspect on the right. Looking at the path projection, we can see that it is exactly the same as the path projection
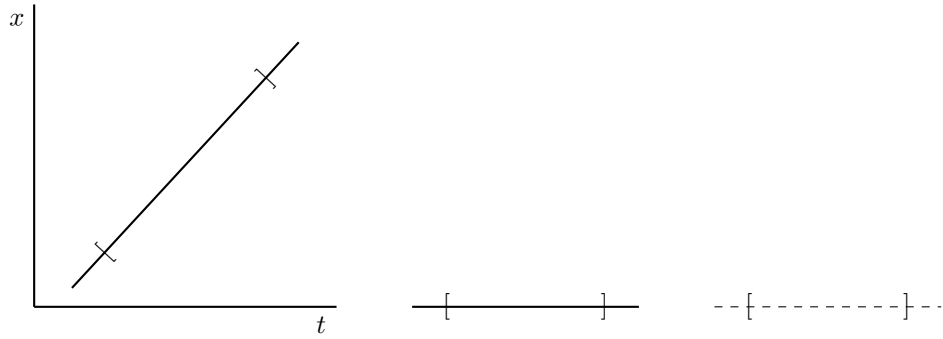
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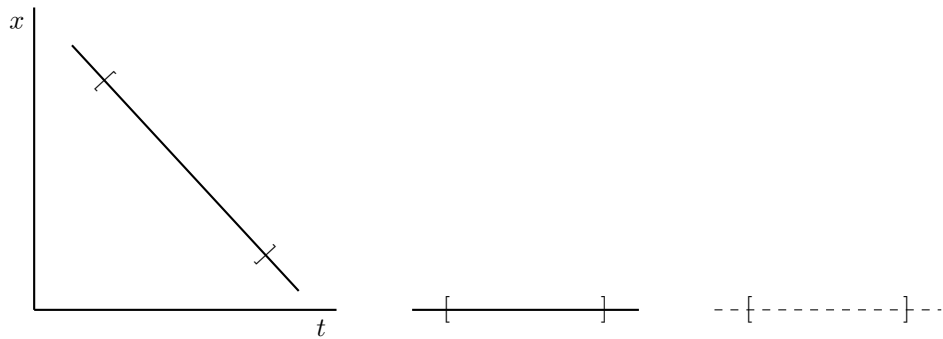Figure 5.1: Projection of the Ablative *-an*

Figure 5.2: Projection of the Allative *-apah*

of the ablative *-an*, where the viewpoint component of this model, the topic segment, contains only the interior portion of the eventuality component, the path segment. Again, this is exactly the same as topological relationship represented by the neo-Reichenbachian representation of the progressive, where the viewpoint component, the topic time, contains only the interior portion of the eventuality component, the situation time. Similar to what was observed with ablative, the allative's path and aspectual semantics are related by the topological relationship between their eventuality and viewpoint components.

Next, I will examine with the regressive *-ah*. As noted in §3.1, the regressive can be used as a perfective marker in situations where the presence of the usual perfective marker, *-ak*, has been co-opted as part of another construction such as the progressive. Figure 5.3 shows the directional diagram for *-ah* on the left, the corresponding path projection in the middle, and *one* type of neo-rechenbachian representation for the perfective on the right. Looking at the path projection, we can see that the viewpoint component of this model, the topic segment, contains the final endpoint of the eventuality component, the path segment, while excluding the initial endpoint. This is exactly the same as the topological relationship represented by the neo-Reichenbachian representation of the perfective, where the viewpoint component, the topic time, contains only the final endpoint of the eventuality component, the situation time, while excluding the initial endpoint[1]. Once again, looking at these two models for the regressive *-ah* it seems clear that the regressive's path and aspectual semantics are related by the topological relationship between their eventuality and viewpoint components.

Last, I will examine the final directional that takes on temporal meaning that traditionally falls into the category of aspect, the departive *-apanu*. As noted in §4.3, the departive can be used

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[1]This then begs the question of whether or not *-ah* functions as only an endpoint perfective, or as both a general and an endpoint perfective. Future work should look into this.
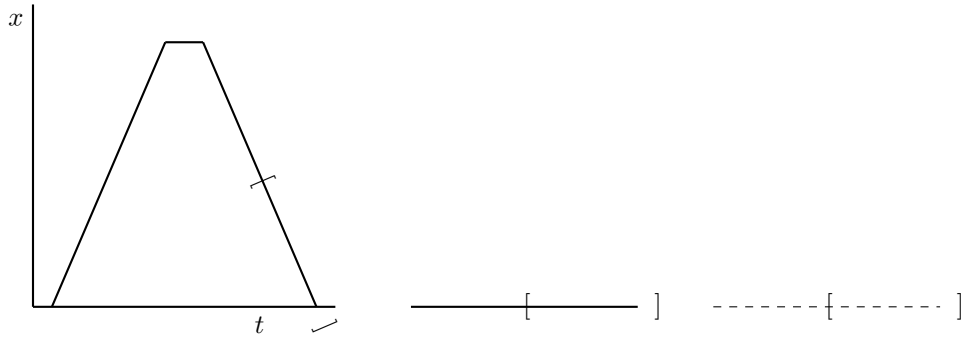
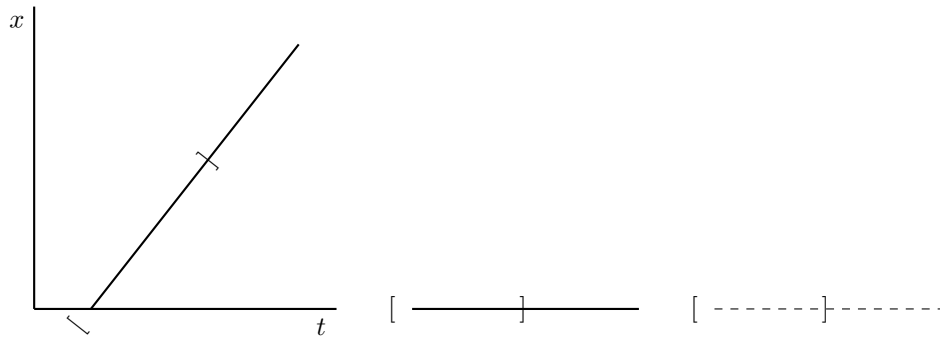Figure 5.3: Projection of the Regressive *-ah*

Figure 5.4: Projection of the Departive *-apanu*

to mark inceptive aspect on eventualities. If the departive is to pattern like the previous three directionals we have examined, we expect the topological relationship between the eventuality and viewpoint components to be the same in the path projection and the neo-rechenbachian representation of inceptive aspect. Traditional descriptions of the inceptive aspect place only the initial endpoint and some duration of of the situation time within the topic time, while explicitly excluding the final endpoint. Figure 5.4 shows the directional diagram for the departive on the left, the corresponding path projection in the middle, and the neo-Reichenbachian representation of the inceptive on the right. Looking at the path projection, we can see that the viewpoint component of this model, the topic segment, contains the initial endpoint of the eventuality component, the path segment, while excluding the final endpoint. This is exactly the same as topological relationship represented by the neo-Reichenbachian representation of the inceptive, where the viewpoint component, the topic time, contains only the initial endpoint of the eventuality component, the situation time, while excluding the final endpoint. As expected, the departive's path and aspectual semantics share a topological relationship between their eventuality and viewpoint components.

      As demonstrated in the discussion of above, the relationship between the path and aspectual semantics of Matsigenka directionals lies in their similar expressions of the relationship between the duration of an eventuality and a viewpoint imposed upon it. More specifically, a given directional can be thought of on the most basic level as denoting a particular topological relationship between an eventuality and a temporal window. These relationships can then be further nuanced depending on context and type of eventuality involved. In addition to this, this analysis has the potential to be expanded. The remaining directionals not discussed here can take on temporal meanings which are not considered to be aspect under traditional neo-Reichenbachian analyses, and an attractive theoretical framework should be able to relate these meanings as well. Likewise, many directionals can

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also take on associated motion meanings, and a comprehensive model should additionally be able to relate these meanings to their directional and aspectual counterparts.

Chapter 6

Conclusion and Future Study

This thesis began by noticing a high degree of interaction between the seemingly unrelated grammatical categories of directionals and aspect in Matsigenka. In the subsequent chapters, I have attempted to give a comprehensive overview of these two categories and show where the relationship between them lies. In Chapter 2, I outlined the theories assumed for interpreting aspect and directionals separate from one another. I situated my discussion of aspect within Klein's (1994) neo-Reichenbachian theory of aspect and Smith's (1997) two component theory, and situated my discussion of directionals within a framework modified from one proposed by Michael (2016). In chapter 3, I gave a descriptive account of the basic aspectual contrasts present in Matsigenka, and analyzed them in terms of the previously mentioned aspectual frameworks. In chapter 4, I gave a descriptive account of each directional's path, associated motion, and temporal meanings, and analyzed their directional interpretations in terms of the previously mentioned directional framework. Then, in Chapter 5 I utilized these two frameworks to show that Matsigenka directionals' path and aspectual semantics are related through the topological relationships they reference between a viewpoint and an eventuality.

This relationship was drawn out by projecting components of the directional framework onto a single axis and comparing the resulting figure with corresponding neo-Reichenbachian aspectual diagrams. Directional projections and aspectual representations bear striking resemblance to one another, and show that the relationship between a given directional's aspectual and directional semantics lies in the similar topological relationships between the duration of an eventuality and and a temporal viewpoint. This comparison is able to adequately explain the aspectual usage of the four Matsigenka directional morphemes that mark for canonical aspectual relationships. Moreover, though it has not been investigated yet, it seems likely that further investigation of the similarities between these two frameworks will able to explain the temporal usages for other directionals as well.

In addition to investigating further applications of the projection model, questions about the interaction between aspect and directionals in Matsigenka still remain. Future investigation of Matsigenka should look at the means of marking different aspectual relations on eventualities used with directionals other than the allative and ablative, and under what environments the regressive replaces -*ak* to function as a perfective. Additionally, the overview of aspectual morphology given in Chapter 3 deals with aspect in a limited modal domain. It is likely that reality status, an obligatory modal contrast in Matsigenka, and aspect interact on levels not explored here.

From a broader linguistic standpoint, the investigation between directionals and aspect should be looked at in other languages. The theory developed in this thesis for interpreting the path semantics of directionals was made with Matsigenka directionals in mind, and its robustness should be tested against directional morphology in other languages. likewise, languages with both directional and aspectual categories should be looked at to see if, and to what extent, these grammatical categories interact. If the goal of a unified theory of the grammars of aspect and directionality is to be met, it is imperative for a broader array of languages to be surveyed.

Bibliography

AIKHENVALD, ALEXANDRA Y. 2012. *Languages of the Amazon*. Oxford University Press.

BRUIJN, EVELINE and GAIL WHITEMAN. 2010. That which doesn't break us: Identity work by local indigenous 'stakeholders'. *Journal of Business Ethics* 96(3):479–495.

COVER, REBECCA. 2010. *Aspect, Modality, and Tense in Badiaranke*. Ph.D. thesis, The University of California Berkeley.

DAVIS, PATRICIA M. 2004. *Reading is for knowing: Literacy acquisition, retention, and usage among the Machiguenga*. SIL International.

HENRICH, JOSEPH. 1997. Market incorporation, agricultural change, and sustainability among the machiguenga indians of the peruvian amazon. *Human Ecology* 25(2):319–351.

JOHNSON, ALLEN. 2003. *Families of the Forest: the Matsigenka Indians of the Peruvian Amazon*. Univ of California Press.

KLEIN, WOLFGANG. 1994. *Time in Language*. Psychology Press.

LEWIS, M. PAUL; GARY F. SIMONS; and CHARLES D. FENNIG (EDITORS). 2016. Ethnologue: Languages of the world. URL https://www.ethnologue.com/language/mcb.

MICHAEL, LEV. 2008. *Nanti Evidential Practice: Language, Knowledge, and Social Action in an Amazonian Society*. Ph.D. thesis, The University of Texas at Austin.

MICHAEL, LEV. 2014. The nanti reality status system: Implications for the typological validity of the realis/irrealis contrast. *Linguistic Typology* 18(2):251–288.

MICHAEL, LEV. 2016. Aspect in a theory of directionals. *Syntax of the World's Languages*, VII.

MICHAEL, LEV; TAMMY STARK; EMILY CLEM; and WILL CHANG (COMPILERS). 2015. Phonological inventory database.

MICHAELIS, SUSANNE MARIA; PHILIPPE MAURER; MARTIN HASPELMATH; and MAGNUS HUBER. 2013. *The survey of pidgin and creole languages*, vol. 1. Oxford University Press.

MIHAS, ELENA. 2010. *Essentials of Ashéninka Perené Grammar*. Ph.D. thesis, The University of Wisconsin-Milwaukee.

MOSELEY, CHRISTOPHER (EDITOR). 2010. Atlas of the world's languages in danger. URL http://www.unesco.org/languages-atlas/en/atlasmap/language-id-731.html.

O'HAGAN, ZACHARY. 2014. The syntax of matsigenka object-marking. MA Qualifying Paper.

PAYNE, JUDITH. 1982. Directionals as time referentials in ashéninca. *Anthropological linguistics* 24(3):325–337.

Rosengren, Dan. 1987. *In the Eyes of the Beholder: Leadership and the Social Construction of Power and Dominance among the Matsigenka of the Peruvian Amazon.* Göteborgs Etnografiska Museum.

Smith, Carlotta. 1997. *The Parameter of Aspect. 2nd.* Kluwer Academic Publishers.

Snell, Betty. 1978. Machiguenga: Fonología y vocabulario breve.

Snell, Betty. 2011. *Diccionario Matsigenka-Castellano.* SIL International.

Vargas Pereira, Haroldo; José Vargas Pereira (authors); Lev Michael; Christine Beier; and Zachary O'Hagan (Compilers). 2013. Matsigenka text corpus (interlinearized latex output of flex database). PDF, URL : `http://www.cabeceras.org/ldm_publications/mcb_text_collection_30jun2013_v1.pdf`.