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Split Intransitivity in Rotokas,
a Papuan Language of Bougainville

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Split Intransitivity in Rotokas, a Papuan Language of Bougainville

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op het gebied van de Letteren

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Abbreviations

The abbreviations and glossing conventions used here are consistent with the guidelines set out in Lehmann (1983).

1 '1st Person'	INCL 'Inclusive'
2 '2nd Person'	INDEF 'Indefinite'
3 '3rd Person'	INTEN 'Intensifier'
ABS 'Absolute'	IP 'Immediate Past'
ABL 'Ablative'	LOC 'Locative'
ADV 'Adverbial'	M 'Masculine'
ALL 'Allative'	MED 'Medial'
ALT 'Alternate'	INDEF 'Non-Absolute'
ANIM 'Animate'	NEG 'Negation'
ANTIC 'Anticipatory'	NF 'Near Future'
BEN 'Benefactive'	NP 'Near Present'
CL 'Classifier'	N 'Neuter'
CMPL 'Completive'	PL 'Plural'
COMP 'Complementizer'	POSS 'Possession'
CONT 'Continuous'	POST 'Postposition'
DELIM 'Delimiter'	PRES 'Present'
DEM 'Demonstrative'	PROX 'Proximal'
DEP 'Dependent (Verb)'	PRO 'Pronoun'
DERIV 'Derivational'	PPRO 'Personal Pronoun'
DF 'Distant Future'	RES 'Resumptive'
DL 'Dual'	PURP 'Purposive'
DP 'Distant Past'	RDP 'Reduplicated'
EPEN 'Epenthetical'	RP 'Remote Past'
EXCL 'Exclusive'	RP 'Resumptive Pronoun'
EXCLAM 'Exclamative'	REF 'Reflexive'
F 'Feminine'	REL 'Relativizer'
FP 'Free Pluralizer'	RP 'Remote Past'
HAB 'Habitual'	RPRO 'Resumptive Pronoun'
HUM 'Human'	RR 'Reflexive/Reciprocal'
INANIM 'Inanimate'	SG 'Singular'

SIM ‘Simultaneity’
SUB ‘Subjunctive’

Part I

A Grammatical Sketch of Rotokas

Chapter 1

Introduction

1.1 Aims and Focus

The aim of this thesis is two-fold. First, it provides a reasonably comprehensive grammar of Rotokas, a Papuan (Non-Austronesian) language of Bougainville, Papua New Guinea. Although some grammatical description of Rotokas does exist (see §2.2.1 for a complete inventory), it is scattered across numerous smaller publications and can be difficult to follow. Second, this thesis focuses on a particular area of Rotokas grammar that poses challenges for grammatical theory: the nature of verbal inflection—more specifically, the existence of two mutually exclusive inflectional classes for subject agreement and tense/mood marking. Various aspects of the morphosyntax of Rotokas will be investigated toward the eventual conclusion that Rotokas possesses a typologically interesting form of split intransitivity. The nature of split intransitivity in Rotokas has implications for theories concerning split intransitivity more specifically and for theories of transitivity, valency, and the semantics-syntax interface more generally.

1.2 Fieldwork and Data

This thesis is based on materials obtained during four fieldwork trips to Bougainville during the course of a three-year Ph.D fellowship at the Max Planck Institute in Nijmegen, The Netherlands. The dates during which these fieldwork trips took place are provided below in Table 1.1.

Trip	Start	End
First	7 April 2003	16 July 2003
Second	27 February 2004	3 May 2004
Third	21 June 2004	29 August 2004
Fourth	12 June 2005	06 October 2005

Table 1.1: Fieldwork Dates

A preliminary fieldwork trip was made in 2002 by Ger Reesink, who surveyed the status of the Papuan languages spoken on Bougainville, established a number of contacts, and made recommendations for potential fieldwork sites. During my first trip to Papua New Guinea, I followed up on these contacts and in Port Moresby met with the Minister of Parliament for the central district of Bougainville, the Honorable Samuel Akoitai, who is a native-speaker of Rotokas and whose father worked with missionary linguists for a number of years (most intensively during the sixties, but also during the seventies and eighties). He contacted various members of the Rotokas-speaking community in Bougainville and made arrangements for an extended stay in his home village of Togarao, a Rotokas-speaking village in the mountains of central Bougainville with a few hundred inhabitants.¹ It is located in the Wakunai District, approximately 25 kilometers inland from Wakunai Station (the main access point for the feeder road that leads up into the mountains).

The choice of Togarao as a field site was motivated by a number of considerations. One of these was continuity. Since prior descriptions of Rotokas were based on the variety spoken in Togarao, basing my own fieldwork there would make it possible to utilize existing materials and assess the degree of change that has occurred in the language. Another consideration was that fieldwork would be easier to conduct in a community where there has been prior exposure to language documentation work and where there are consultants ready, willing, and able to participate in this type of work. The only real drawback of Togarao was its relative inaccessibility. The feeder road that runs from the coast to Togarao was poorly maintained and riddled with potholes that would wash out during heavy rains.² In addition, there was no regularly available transport, which meant that when no vehicle was available, travel to and from the coast along the long and sometimes steep roads would have to be carried out on foot. However, the relative inaccessibility of the village has reduced the amount of language contact that has taken place, effectively reducing the amount of Tok Pisin and English spoken in the community and strengthening the position of Rotokas as the primary community language.

During my various stays in Togarao, I worked with native speakers of Rotokas in the local community to document and describe the grammatical structure of the language. My two main native speaker consultants were Timothy Taureviri and Sera Mon, shown in Figure 1.1.

¹The village is identified as Togarau on some maps, based on a misidentification of the final vowel of the word.

²During my final trip to Togarao, a road improvement project financed by the European Union was initiated which should significantly improve the quality of the feeder road.



Figure 1.1: Rotokas Native Speaker Consultants: Timothy Taureviri (left) and Sera Mon (right)

Timothy and Sera are both in their fifties and learned Rotokas as their first language. They both speak Rotokas on a daily basis as their primary language. In addition, both consultants are fluent speakers of Tok Pisin (Neo-Melanesian). Timothy Taureviri had previously worked with Irwin Firchow and Sera Mon is the daughter of Irwin Firchow's primary consultant, David Akoitai. Sera's husband is from the mainland of Papua New Guinea and Tok Pisin is their primary language of communication. Caleb Karuru—another native speaker of Rotokas who worked with Firchow—also worked with me as a native speaker consultant. He is shown with Irwin Firchow and David Akoitai in Figure 1.2.³

The example sentences in this dissertation come either from previously published materials, in which case they are cited, or from my own materials, which are listed in Table 1.2. The majority of previously published materials were published exclusively in Rotokas but were subsequently double-checked and given Tok Pisin translations by bilingual Rotokas consultants. Uncited example sentences come either from field notes or (more likely) from the author's lexical database (a large Shoebox/Toolbox dictionary described in Appendix A). Citations appear after the English gloss in square brackets.

1.3 Organization

This thesis is divided into two parts, reflecting the twin aims described in §1.1: 1) a grammatical sketch of Rotokas, and 2) a more detailed analysis of a particular topic of theoretical interest—namely, split intransitivity.

The first part of this thesis is a grammatical sketch of Rotokas consisting of six chapters. Chapter 1 introduces the aims and organization of the thesis and provides background informa-

³The photo was taken during the seventies and was provided by Irwin Firchow's widow, Jackie Firchow. Her generous contribution of the photo is hereby acknowledged.

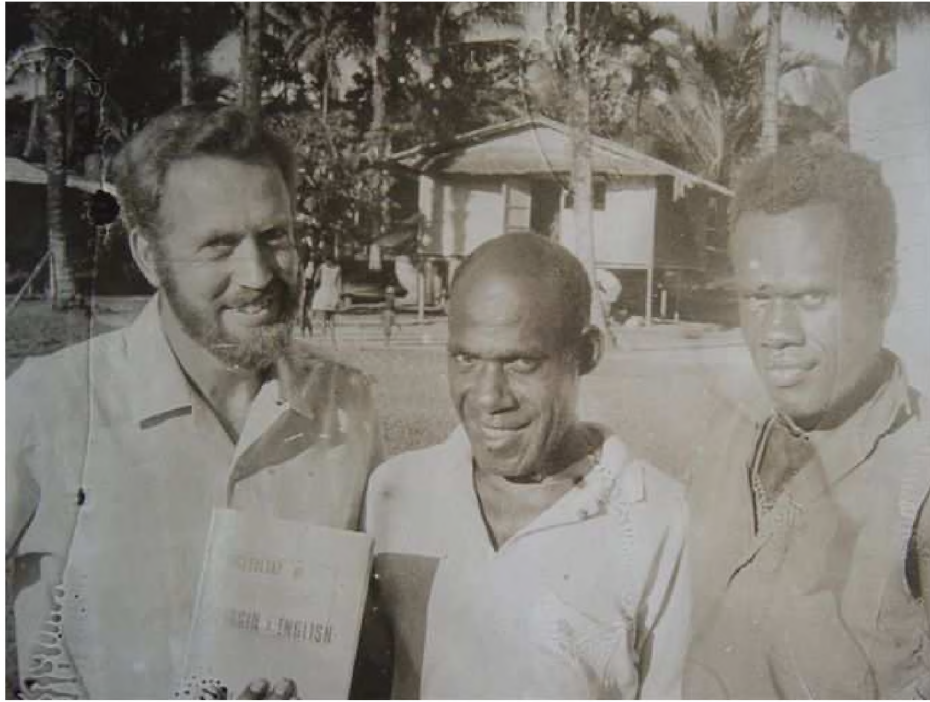


Figure 1.2: Irwin Firchow (left), David Akoitai (middle), and Caleb Karuru (right)

tion concerning the author's fieldwork trips to Bougainville between 2003 and 2005. Chapter 2 provides background information concerning the Rotokas language and its speakers. §2.1 covers the recent history of Bougainville as well as the deep history of the region while §2.2 provides important background information on Rotokas: prior documentation of the language, information about its speakers, an overview of dialectal variation and an inventory of languages spoken on Bougainville, and a summary of what is known about their genetic affiliation. Chapter 3 provides an overview of the phonology of Rotokas, which is typologically unusual for possessing a very small phoneme inventory. §3.1 describes the phoneme inventory of the language (the segmental inventory) while §3.2 describes what is known concerning the language's suprasegmental phonology. Chapter 4 looks at the word classes, or parts of speech, found in the language. It distinguishes between roots, stems, and words, and provides a breakdown of the word classes into a number of categories: nouns, noun classifiers, pronouns, verbs, adjectives, adverbs, postpositions, interrogative, conjoiners, and exclamatives. Chapter 5 overviews Rotokas morphology, which is fairly extensive, looking first at nominal morphology and then at verbal morphology. It also covers reduplication and morphophonemic rules. Chapter 6 is concerned with syntax, focussing first on the noun phrase and then on clausal syntax (both intra- and inter-clausal). A few aspects of intraclausal syntax are discussed in the first section: basic constituent order, departures from the basic (canonical) constituent order in content questions and when O is displaced, interrogatives, and negation. Interclausal suffix is covered in the final

How Cited	Description
title in quotes Robinson and Mon (2006)	Recordings of various conversations and folk tales (e.g., §C.2) Trilingual English/Tok Pisin/Rotokas primary school reader developed with Sera Mon
uncited	Shoebox dictionary with 6088 entries and 7152 example sentences
uncited RR:<CLIP>, <CONSULTANT>	Notes made during fieldwork sessions in Togarao Descriptions of the Reciprocals video clips, glossed in Tok Pisin (Evans et al., 2004)
CB:<CLIP>, <CONSULTANT>	Descriptions of the Cut and Break video clips, glossed in Tok Pisin (Bohnemeyer et al., 2001)
by publication	Previously published Rotokas materials translated into Tok Pisin

Table 1.2: Author’s Rotokas Materials

section, which looks at complementation, verb phrases, and larger clausal units (sentences with conjoiners).

The second part of this thesis is a detailed examination of verb classification and split intransitivity. Chapter 7 formulates the basic analytical problem posed by the two classes of verbal inflection found in Rotokas. §7.1 more firmly establishes the formal nature of the distinction and a clear set of diagnostics for its recognition while §7.2 states the basic problem and puts forward a tentative hypothesis concerning its solution which is refined in later chapters as the facts of the matter are established in more detail. Chapter 8 examines the nature of valency in Rotokas and establishes that there are two main valency types in Rotokas: monovalent verb roots (“intransitive”), which take a single argument, and bivalent verbs roots (“transitive”), which take two (or possibly three) core arguments. If a clause possesses two core arguments, it will show β agreement; however, the reverse does not hold true. If a verb shows β agreement, it will not necessarily take two core arguments. This asymmetry owes to the fact that monovalent verb roots are split according to their form of verbal inflection: most show α inflection but some show β . Chapter 9 overviews the devices for increasing or decreasing the default valency of verb roots. Valency-increasing derivations are discussed in §9.1 and valency-decreasing derivations are discussed in §9.2. Valency changing derivations provide little evidence for an underlying syntactic difference between α and β monovalent verb roots, since the various valency-changing derivations are not sensitive to the distinction; however, they do provide additional evidence in favor of a tight relationship between valency and verbal inflection, since a decrease in valency is associated with α inflection and an increase in valency with β inflection. Chapter 10 examines the nature of split intransitivity in Rotokas in more detail and discusses the implications of Rotokas for theories of linking (the syntax-semantics interface) specifically and grammatical theory more generally. Chapter 11 provides concluding remarks and lays out a few directions

for future research.

The thesis also includes 3 appendices. The first appendix provides a detailed listing of verb stems taken from an electronic database of the Rotokas lexicon developed by the author. The second appendix provides a formal implementation of the analysis of Rotokas morphology within the framework of finite state morphology using the PARC software toolkit. The third appendix provides two sample texts with interlinear glossing and translations into English and Tok Pisin. The sample texts provide two different versions of a traditional folk tale, one documented by Irwin Fircow and the other by the author during his fieldwork.

Chapter 2

Language Background

In this chapter, background information about Rotokas is provided in order to place the language in a wider sociocultural perspective. Bougainville is situated within the context of Island Melanesia in §2.1 and background information about Rotokas and its speakers is provided in §2.2.

2.1 Bougainville and Island Melanesia

Rotokas is spoken in the central region of the island of Bougainville, which belongs to a region that is generally known as Island Melanesia, which lies to the east of mainland Papua New Guinea and encompasses the larger islands of New Britain, New Ireland, and the Solomon Island Chains, as well as various smaller islands and atolls that are too numerous to list, as shown in Figure 2.1.

Figure 2.1 also shows the distribution of the two major groupings of languages spoken in the region: Austronesian and non-Austronesian (Papuan). Austronesian languages appear in pink while Papuan languages appear in blue. Casual inspection of the distribution of Austronesian and Papuan languages shows that Bougainville is somewhat unique in the region to the extent that it possesses a relatively higher proportion of Papuan languages (see §2.2.4 for details).

2.1.1 History of the Region

Australia-New Guinea has a history of settlement that is known from archaeological evidence to date back as far as 40,000 BP (White and O'Connell, 1982). Archaeological evidence from the island of Buka (a smaller island immediately north of Bougainville) provides evidence of inhabitation dating as far back as 29,000 years ago (Wickler and Spriggs, 1988).

Bougainville is named after the French explorer Louis Antoine de Bougainville (de Bougainville, 1772), the first European to spot the island, when he sailed past it in 1768 during his

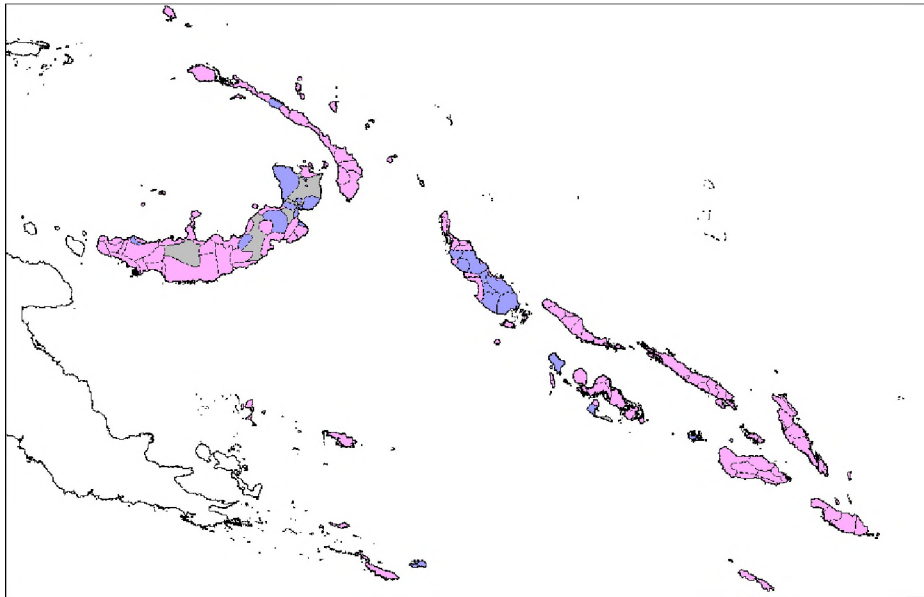


Figure 2.1: Languages of Island Melanesia

circumnavigation of the globe following the Seven Years' War. Contact between Bougainvillians and the West did not begin in earnest for almost one-hundred years, when the German New Guinea Company established control over Bougainville and Buka, Choiseul, the Shortlands and Treasury Islands in 1885 (Sack, 2005). Their control over this area did not extend to the islands farther south in the Solomon Island chain, which came under a British protectorate in 1893 (with the eastern islands being added in 1899). In 1900, Germany transferred all of its claims in the Solomons other than Bougainville and Buka to Great Britain while Britain, in return, withdrew from Western Samoa. During the first world war, Australia occupied the island in 1914 and administered it as a League of Nations mandatory power from 1918 until World War II. It was invaded by the Japanese in 1942 and between 1942 and 1945 was the site of an intense military campaign in the lead-up to the assault on the Japanese bastion of Rabaul (Gailey, 1991; Nelson, 2005).

After WWII, Australia resumed control over the island as a United Nations mandatory power until Papua New Guinea achieved independence in 1975 (Waiko, 1993). When PNG achieved independence, Bougainville's copper resources provided an early source of government revenue. Bougainville Copper Limited set up and ran the Panguna mine, which at the time was the world's largest open-cut copper mine. The mine proved to be politically contentious due to disputes over land tenure and allegations of environmental damage (Vernon, 2005).

After negotiations between landowners and the owners of the mine broke down, Francis Ona formed the Bougainville Revolutionary Army, which began to sabotage mining operations. The campaign was successful to the extent that in May 1989 the mine was shut down after the power cables which supplied its electricity were blown up by a group of indigenous landowners led

by Francis Ona. On June 26, 1989, the Papua New Guinean government declared a state of emergency, and in September, the Papua New Guinea Defense Force (PNGDF) was sent into Bougainville in order to quell resistance to the mine. Their heavy-handed response enraged Bougainvilleans and set in motion a chain of events that led to a decade-long military conflict, generally referred to as The Bougainville Crisis—or simply The Crisis—in which somewhere between 10,000 and 15,000 people lost their lives, either directly through fighting or indirectly through other causes (e.g., lack of medical attention).

A full history of The Crisis goes beyond the scope of this short and high-level overview of the history of Bougainville (see Dorney (1998); Regan and Griffin (2005) for more information). The main protagonists in this conflict were the Bougainville Revolutionary Army (BRA), the PNGDF, and The Resistance, a paramilitary group that defined itself in opposition to the BRA and aligned itself with the national government of PNG. Many Rotokas joined The Resistance after a foiled kidnapping attempt on the Akoitai family was carried out in Togarao by self-proclaimed BRA members, resulting in the death of one local and a number of BRA members. Despite their sympathy for the BRA cause, many members of the community feared reprisal as a result of this incident and felt that the PNGDF provided the best chance of protection from attack.

After years of hardship and bloodshed, The Crisis officially ended in 1997, thanks in large part to negotiations brokered by New Zealand. A Peace Agreement finalised in 2000 provided for the establishment of an Autonomous Bougainville Government, and a referendum in the future on whether the island should become politically independent. In 2005, elections for the first Autonomous Government were held and Joseph Kabui was elected President on June 15. During the same year, the rebel leader Francis Ona, whose sabotage of the mine set in motion the events leading to The Crisis, died after a short illness, leaving in question the leadership of the BRA and its remaining hardcore members who had refused to join the peace process. These individuals remain heavily armed and in control of the area surrounding the Panguna mine.

The effects of The Crisis on modern Bougainville can hardly be overstated. It has led to widespread social and economic change, the effects of which will continue to be felt in the coming years. These include a breakdown in law and order, which is only now beginning to be properly dealt with. In addition, it has led to a great deal of population displacement, which has disrupted the transfer of traditional customs and undermined respect for village elders. It has also led to significant decline in the educational system of the island, which was at one point one of the best in Papua New Guinea (Litteral, 2001). This has led to a somewhat unusual situation where the older generation is both more steeped in the traditional culture and better educated than the younger generation.

2.2 The Rotokas Language

This section provides background information on Rotokas in order to situate it within the wider linguistic scene of Bougainville and Island Melanesia. The prior literature on Rotokas is briefly

described in §2.2.1; dialectal variation in the language is overviewed in §2.2.3; and the relationship of Rotokas to the other languages spoken in Bougainville is discussed in §2.2.4.

2.2.1 Prior Literature

All of the prior literature on Rotokas is the work of a missionary couple from the Summer Institute of Linguistics, Irwin Firchow and Jacqueline Firchow, who translated the Bible into Rotokas and also did some anthropological and linguistic work over the course of three decades (from the early sixties to the late eighties). A number of publications came out of their work; they are listed in Table 2.1 along with a brief description of their content.

Reference	Description
Firchow and Firchow (1969)	Description of the segmental phonology of Rotokas
Firchow (1971)	Description of Rotokas nominals
Firchow (1973)	Vocabulary of Rotokas (vowel length omitted from orthography)
Firchow (1977)	Analysis of Rotokas nominals
Firchow (1974a)	Collection of Rotokas songs
Firchow and Akoitai (1974)	Collection of Rotokas stories (folk tales)
Firchow (1974b)	Descriptions of Rotokas customs in Rotokas
The New Testament (1982)	Translation of the New Testament into Rotokas
Firchow (1984)	Electronic Shoebox dictionary on CD
Firchow (1987)	Grammar sketch
The Old Testament (1993)	Translation of the Old Testament into Rotokas

Table 2.1: Prior Literature on and in Rotokas

The primary motivation for their descriptive work was the translation of the Bible into Rotokas and the linguistic descriptions produced by Irwin Firchow reflect a limited background in academic linguistics. For example, postnominal modifiers are described as “prepositions” in Firchow (1987:85). They are, however, largely accurate empirically and therefore provide a very useful starting point for more in-depth analysis.

To my knowledge, there has been no documentation of Rotokas carried out since the Firchows ceased working on the language. During the twenty to thirty year gap between the publication of the above-listed materials and the start of my own research, the language has undergone some change as a result of various factors. One of the main factors is multilingualism in Tok Pisin/English as a result of increasing language contact. This is reflected by the growing number of loan words and the loss of a great deal of vocabulary associated with the traditional culture. This vocabulary is typically described by Rotokas speakers as *toktok bilong bipo* “words from before” and is retained only by elderly speakers of the language, who have first-hand knowledge of the traditional practices in which that terminology was embedded. For example, few younger speakers of Rotokas are familiar with the word *keroroi* “lean to”, which

describes a traditional type of temporarily shelter used in the past during stays in the jungle (for example, while hunting possum), or with the word *toara* “market”, a loan word from Teop, which described a traditional practice of having bartering markets (presumably with the Teop, given the borrowing of the term from their language). The loss of some traditional vocabulary cannot be solely attributed to the loss of traditional practices, suggesting that other processes are at work (for example, language contact with the Keriaka or between dialects of Rotokas). In some cases, there is no readily forthcoming reason for a word’s obsolescence. For example, the word *kare* has replaced *ragui* as a pluralizer for animate entities (animals, fish, etc.) (Firchow, 1987:40) and the word *isike* has replaced *kusike* as the generic term for rats.

Three books with monolingual Rotokas texts (collected from various native-speakers—primarily David Akoitai—and edited by Irwin Firchow) were published and these provide a snapshot of the variety of Rotokas then spoken. Firchow and Akoitai (1974) provides a number of folk tales and personal narratives while Firchow (1974b) provides descriptions of traditional customs. During my various trips to Bougainville, native speakers of Rotokas translated these monolingual Rotokas texts into Tok Pisin and they were systematically interlinear glossed for analysis in Toolbox, a computer program developed by the Summer Institute of Linguistics for the development of language resources (e.g., lexicons) and their deployment in linguistic analysis.¹ The impression of those speakers who translated these materials was that there was some vocabulary in the texts that was no longer used but that they were overall very similar in form and structure.

2.2.2 The Speakers of Rotokas

Rotokas speakers are primarily subsistence agriculturalists. Their primary crops are sweet potatoes, yams, taro, and English potatoes. These are supplemented by local fruits and vegetables (such as coconuts, various varieties of banana, and a local green known as *kumul*) as well as some store-bought goods (such as tinned fish, rice, and noodles), paid for by money obtained through various cash crops, such as cocoa and vanilla. The formal economy of Bougainville was fairly small during the period when the fieldwork described in this thesis was carried out, having shrunk considerably as a result of The Crisis and the closing of the Panguna Mine. Opportunities for employment were limited and therefore government positions, such as that of a school teacher or local government functionary were highly sought after.

In village of Togarao, where I spent the majority of my time during my field research, Rotokas is the primary language of communication. It is the first language used by children and it is the preferred language in day-to-day life. It is used in daily conversation, village meetings, church, and numerous other contexts. However, the situation is somewhat different in Wakunai Station, a village through which the highway of East Bougainville runs. At Wakunai Station, the same dialect of Rotokas is spoken as the lingua franca but there are many more members

¹Toolbox is the latest incarnation of Shoebox, and differs from the latter in only a few respects, such as its support for Unicode data storage and its ability to export data as XML (Robinson et al., 2007).

of the community who do not speak Rotokas as well as travellers who pass through the area, and Tok Pisin is the primarily language of communication with these individuals. Tok Pisin is therefore more frequently used in and around Wakunai Station than in Togarao. The remoteness of villages such as Togarao therefore ensures less language contact and therefore less influence from Tok Pisin, but there is considerable transit between Wakunai Station and the more remote inland villages, particularly among young men (who frequently spend time with relatives on the coast in search of work and/or entertainment).

Although Rotokas remains the primary language of village life, and the first language learned by children, bilingualism in Tok Pisin is the norm among adult Rotokas speakers. It is the lingua franca of Bougainville and is used on the local radio stations (for example, Radio Bougainville), in the school system, at school meetings, and at political events. Tok Pisin is also used as a lingua franca among the minority of villagers who, due to unusual circumstances, do not speak Rotokas. There are a few individuals who have a passive command of Rotokas and are able to understand the language but not to speak it. For example, the daughter of a local politician who was raised in an urban environment does not speak Rotokas but is able understand it. When conversing with family members who speak Rotokas, she will speak Tok Pisin and others will speak to her in Rotokas or in Tok Pisin, depending upon their awareness of her passive competence of Rotokas and their own level of comfort in Tok Pisin.

There is some familiarity with English in the community, as well. English is the official language of instruction after grade three in the Papua New Guinea education system, and therefore anyone who has received formal education will have some familiarity with it, as well, although competence in the language varies dramatically and depends largely on levels of educational attainment, which is now fairly low in general due to the fact that the educational system of Bougainville deteriorated considerably during The Crisis, as did most of the infrastructure on the island. As a result of the deterioration of the feeder road connecting Togarao to the coastal highway, Togarao has been less accessible than in the past and this has had an effect on the economy and the school system. At present, most students manage to complete their studies through grade eight but only a small percentage of students continue on to high school.

2.2.3 Dialectal Variation

The first—and only—systematic survey of the languages and dialects of Bougainville was carried out by the Summer Institute of Linguistics during the early sixties and is reported in Allen and Hurd (1963). On the basis of lexicostatical comparison, it is claimed that there are four dialects of Rotokas, named after the geographical regions where they are spoken: Central, Aita, Pipipaia, and Atsilima. The names of the villages where these dialects are spoken and their approximate population size at the time of publication (the sixties) are provided in Table 2.2.²

²Some of the villages in Table 2.2 are not exclusively Rotokas-speaking. For example, Allen and Hurd (1963) observes that Teop is spoken in Tiaraka (Tearaka). According to Ruth Spriggs (a native-speaker of Teop collaborating with Ulrike Mosel on its documentation and preservation), there is considerable language contact between

These figures must be interpreted with caution, given that they are fairly out-of-date. Migration and population growth will have changed the size and composition of these villages, and therefore the total size of the Rotokas-speaking community.³

The geographical distribution of the dialects recognized in Allen and Hurd (1963) is provided in Figure 2.2, where colored dots representing the four dialects have been superimposed on village locations according to the following color scheme: Aita (yellow), Atsilima (green), Central (blue), and Pipipaia (red).

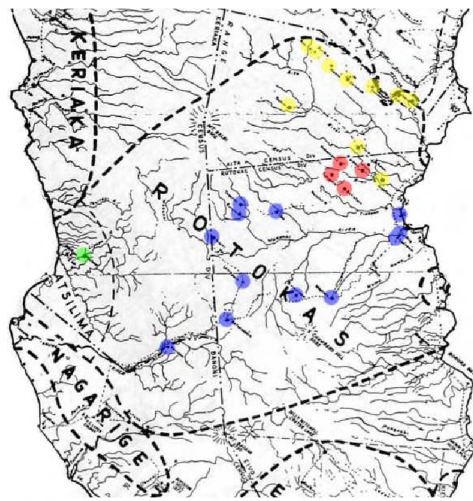


Figure 2.2: Dialects of Rotokas [based on Allen and Hurd (1963)]

The only dialect of Rotokas described in any detail is Central Rotokas. This dialect is labelled “Rotokas Proper” in Allen and Hurd (1963), but this term is eschewed here since it unnecessarily privileges one dialect over the others. Aita Rotokas is mentioned in Firchow and Firchow (1969) and its consonant inventory described in passing. Robinson (2006) compares its segmental phoneme inventory to that of Central Rotokas and, on the basis of a comparison of cognate vocabulary in the two dialects, argues that the phoneme inventory of Aita Rotokas is conservative and that the smaller inventory of Central Rotokas arose by collapsing the voiced/nasality contrast in Aita Rotokas.

Details of the dialects and the criteria by which they are defined are otherwise lacking. No information is available concerning the Pipipaia dialect. Although Central Rotokas is relatively better described, information concerning its distribution is questionable. Native speakers of Rotokas describe another variety of Rotokas which they describe as Red River, suggesting that additional dialects may need to be recognized.

Rotokas and Teop in the villages of Tiaraka and Teohiupu.

³Wurm and Hattori (1981) provide a higher figure for the total population of Rotokas speakers—viz., 4,320. The discrepancy between this figure and the figure provided by Allen and Hurd (1963) presumably owes to population growth, since by 2000 the population of Bougainville had doubled (141,161 according to PNG’s 2000 Census).

The most intriguing dialect of Rotokas identified in Allen and Hurd (1963) is Atsilima, which had 112 speakers in the village of Atsilima when it was surveyed, but its current status is unknown. Atsilima is possibly a dialect of Rotokas, but one that differs so much from it that Allen and Hurd (1963) describe it as a “sub-language” of Rotokas: “more distant than a dialect and yet not far enough removed to be a separate language” (Allen and Hurd, 1963:2).⁴ It is spoken in a language contact zone between Rotokas and Kereaka and is described by Rotokas-speakers as a “mix” of the two languages.

2.2.4 The Languages of Bougainville

Bougainville covers an area of 10,954 km², measuring 120 km in length and between 65 and 95 km in width. Despite its relatively small size, Bougainville possesses an impressive amount of linguistic diversity—a total of approximately 25 languages (Allen and Hurd, 1963; Tryon, 2005). The languages and the approximate geographic area where they are spoken is provided in Figure 2.3.⁵

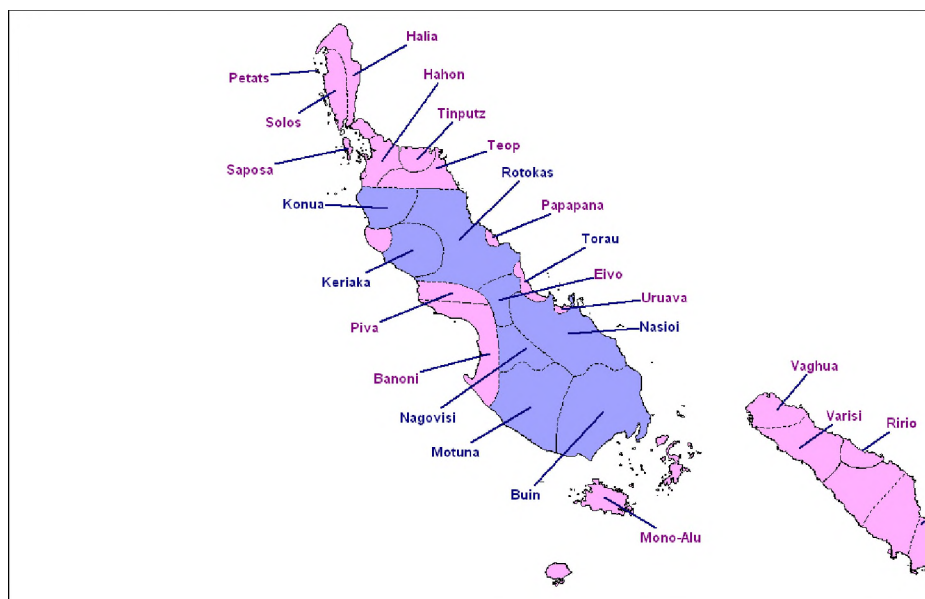


Figure 2.3: Languages of Bougainville

⁴Allen and Hurd (1963) define “sublanguage” operationally in terms of the percentage of shared vocabulary between speech varieties in the available word lists: “Speech groups which are 93% to 100% related belong to the same dialect, speech groups which are 76% to 92% related are different dialects of the same language, and speech groups which are 65% to 75% related are sub-languages of the same language.” (Allen and Hurd, 1963:5)

⁵The best way of visualizing the geographical distribution of languages on Bougainville would be to plot each language variety on a village by village basis. The linguistic boundaries in Figure 2.3 should therefore be viewed largely as a convenient fiction that provides only a very rough impression of where the various languages are spoken.

A full listing of the languages of Bougainville—including the Austronesian languages—is provided in Table 2.3.

Rotokas is one of eight Papuan languages spoken in Bougainville. The Papuan languages—which make up roughly a third of the languages in Bougainville—are listed below in Table 2.4.

Documentation of the Papuan languages of Bougainville is quite limited. Only Motuna and Rotokas have modern descriptive grammars available; Buin has a dictionary with a grammar sketch; Nasioi and Nagovisi have even more limited materials; Kunua has only one published description (essentially little more than a vocabulary with some grammatical notes); Eivo and Keriaka are completely undocumented.

There is some Austronesian-Papuan language contact at the edges of the Rotokas-speaking areas with Keriaka, another non-Austronesian language in the Rotokas family, and Teop, an Austronesian language belonging to North Bougainville network of the North-West Solomonic chain (Mosel, 1991; Mosel and Spriggs, 1999a,b; Mosel and Reinig, 2000; Tryon, 2005; Schwartz and Mosel, 2006). The degree of language contact between the Rotokas and surrounding language groups is difficult to gauge, given the absence of solid ethnographic description (Griffin, 2005). However, recent work by the author in collaboration with Ulrike Mosel has revealed a reasonable amount of lexical borrowing between Rotokas and Teop, covering a variety of semantic domains, which provides grounds for believing that contact between the two groups went far beyond casual contact and involved not only trade but also intermarriage.

The relationship of the Papuan languages to one another is a matter of controversy, as will be seen in the following section, which takes up the question of the genetic affiliation of the languages of Bougainville.

2.2.5 Genetic Affiliation

Rotokas is usually described as belonging to the East Papuan phylum, a somewhat controversial grouping of non-Austronesian languages first proposed by Wurm (1975a). Before discussing this grouping in greater detail, it is worthwhile to step back and examine the prior descriptive work upon which it is based.

On the basis of an examination of shared vocabulary (lexicostatistics), Allen and Hurd (1963:20) claim that Rotokas belongs to the Kunua-Keriaka-Rotokas-Eivo stock and to the Rotokas-Eivo family. (They define a stock as languages sharing 12% to 28% cognate vocabulary and a family as languages sharing 28% to 81% cognate vocabulary.) A pairwise comparison of all of the languages within the survey is provided in Table 2.5.

In Table 2.5 a horizontal line divides the two language groups: Austronesian towards the top from non-Austronesian languages towards the bottom, with a vertical line dividing the within-group and between-group comparisons. As one would expect, rates of shared vocabulary are much higher within language groups than between them. In addition, the rates are higher within Austronesian than within Papuan, which is consistent with the view that the Papuan lan-

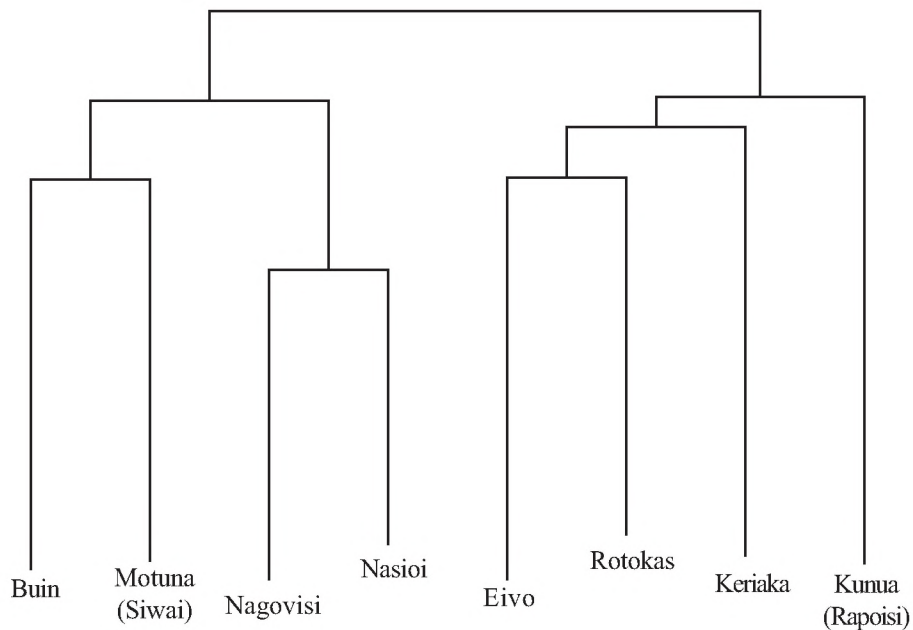


Figure 2.4: Shared Vocabulary Percentages of Allen and Hurd (1963) as Neighbor Joining Tree

guages have undergone greater diversification due to an earlier settlement date. For example, the Austronesian languages Teop and Tinputz share 67% cognate vocabulary whereas the Non-Austronesian languages Rotokas and Kunua share 30% cognate vocabulary. Teop and Rotokas were found to share only 6% cognate vocabulary (close to chance according to Dunn and Terrill (submitted)).

The figures provided by Allen and Hurd (1963) can be transformed into distances matrices to build a distance tree using the neighbor-joining tree method, an algorithm which seeks the optimal tree that preserves the relative distance between each of the terminal nodes (Saitou and Nei, 1987). The result is provided in Figure 2.4.

Although there are problems with establishing genetic relationships solely on the basis of shared vocabulary (Laycock, 1970; McElhanon, 1987), the work of Allen and Hurd at least gives a rough impression of Rotokas' relationship to some of the other language of Bougainville and will have to suffice until more complete descriptions of the various languages are available. Despite the sketchy materials available on the languages of Bougainville, a few authors have put forward tentative genetic groupings for Rotokas.

Based on prior work by Allen and Hurd (1963) and Greenberg (1971), Wurm (1972) provides the first explicit postulation of an East Papuan phylum:

The East Papuan phylum which comprises what has until quite recently (Wurm 1971) been regarded as the Bougainville Phylum, the Reef Islands-Santa Cruz phylum-level Family, and a number of isolates in the New Britain, New Ireland, Solomon Islands and Louisiade Archipelago areas, has been set up by the present

writer (Wurm 1972a) on the basis of his own preliminary assessment of the available information and materials, and taking into account Greenberg's (1971) findings as well . . .

The Bougainville branch of Wurm (1972)'s proposed East Papuan phylum is provided as a tree diagram in Figure 2.5.

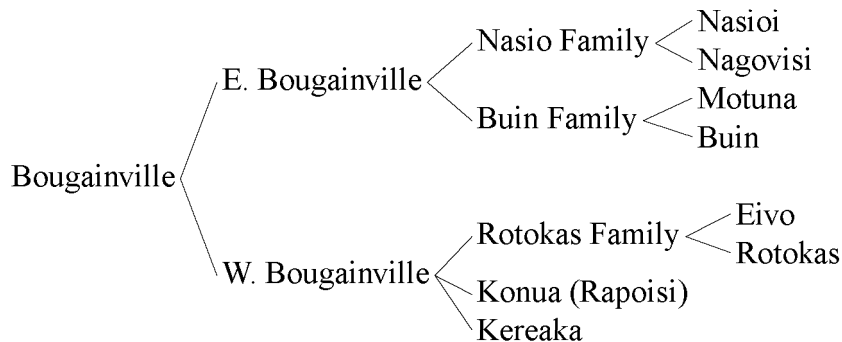


Figure 2.5: Bougainville Branch of the East Papuan Phylum (Wurm, 1972, 1975a)

Ross (2001) questions the validity of Wurm (1975a)'s East Papuan phylum, noting that it is based on phonological similarity in word lists (rather than on regular sound correspondences) and uses typological similarities to bolster proposed groupings. This is problematic because such evidence could equally well reflect the results of language contact rather than inheritance. For this reason, Ross (2001) looks at pronouns on the assumption that they are less susceptible to wholesale borrowing than other parts of speech (for a critical assessment of this assumption, see Thomason and Everett (2001)). On the basis of the pronominal evidence, Ross (2001) concludes that there is no good evidence that the West and East Bougainville groupings of Wurm (1972) are related:

“Surprisingly, perhaps, the two groups recognised by Wurm on Bougainville seems to be unrelated to each other. Matthew Spriggs (pers. comm.) points out that there has been a good deal of recent population movement on Bougainville, and that, although the two groups appear contiguous on the map, they were probably separated in traditional times by a large area of volcanic activity” (Ross, 2001:311).

Typological similarity has frequently been invoked in discussions of the East Papuan phylum, but, as observed in Dunn et al. (2002), the languages in the proposed grouping are quite heterogenous in terms of their typological features. The majority of them do, however, possess the following features:

constituent order the majority exhibit verb-final constituent order (typically Papuan), with the notable exception of Kuot; most also exhibit possessor-possessed order in possessive noun phrases.

pronominal systems an inclusive/exclusive distinction in the first person non-singular and a dual number category are both widespread

verbal morphology largely segmentable; nominative/accusative; argument marking through affixation (with a preference for suffixation)

Given the equivocal status of the evidence in favor of the East Papuan phylum, and the absence of systematic sound correspondences that would lend themselves to traditional methods of reconstruction, Dunn et al. (2005) pursue a novel approach to the problem by using methodologies taken from computational cladistics (Kitching et al., 1998). They constructed a database of grammatical features for 15 Papuan and 16 Austronesian languages and, using cladistic algorithms (maximum parsimony and NeighborNet), analyzed the potential phylogenetic relationship between these languages. When applied to the Austronesian languages, the results of the technique provided a very close match to the classifications reconstructed using the traditional comparative method. This provided the basis for extrapolating the technique to the Papuan languages, where it was found that the classifications produced by cladistic algorithms strongly reflected geography. This is interpreted as evidence of large-scale genealogical clustering of the Island Melanesian languages that predates the Austronesian expansion. They interpret their results as evidence in favor of the idea that the two language groups now located on the Solomons and Bougainville separated from a common ancestor.

Dialect	Villages	Population (1960s)
Central		Total: 1640
	Beteriopaia	131
	Ibu	104
	Keriana	92
	Leikaia	68
	Lesiopaia	95
	Mapioro	132
	Okowapaia	128
	Ruruvu	129
	Sirioripaia	194
	Sisivi	190
	Teakon	75
	Tiaraka	86
	Togarao	216
Aita		Total: 1003
	Koribori	62
	Kusi	89
	Nupatoro	164
	Osiwaipa	146
	Pokoia	217
	Siribia	93
	Tokai	112
	Tsubiai	120
Pipipaia		Total: 765
	Bulistoro	149
	Kakaropaia	190
	Pipipaia	264
	Tutupaia	162
Atsilima		Total: 112
	Atsilima	112
		3520

Table 2.2: Where Rotokas Dialects Are Spoken (Allen and Hurd, 1963)

Affiliation	Name	Ethnologue Code	Speakers
Papuan	Konua (Kunua) / Rapoisi	kyx	3,500
	Rotokas	roo	4,320
	Keriaka	kjx	1,000
	Eivo	eiv	1,200
	Nasioi (Kieta)	nas	10,000
	Nagovisi	nco	5,000
	Siwai (Motuna)	siw	6,600
	Buin (Telei)	buo	30,500
Total			62,120
Austronesian	Halia	hla	20,000
	Haku	hao	5,000
	Solos	sol	3,200
	Petats	pex	2,000
	Saposa	sps	1,400
	Hahon	hah	1,300
	Piva	tgi	550
	Banoni	bcm	1,000
	Tinputz	tpz	3,900
	Teop	tio	5,000
	Papapana	paa	150
	Torau (Rorovana)	ttu	605
	Uruava	urv	EXTINCT
	Nehan (Nissan)	nsn	7,000
	Takuu	nho	250
	Nukumanu	nuq	200
	Nuguria	nur	200
Total			51,755

Table 2.3: The Languages of Bougainville

Name	Code	Pop.	Notes
Konua (Rapoisi)	kyx	3,500	Müller (1954)
Rotokas	roo	4,320	Firchow and Firchow (1969); Firchow (1987)
Keriaka	kjx	1,000	UNDESCRIBED
Eivo	eiv	1,200	UNDESCRIBED
Nasioi (Kieta)	nas	10,000	Hurd and Hurd (1970a,b); Hurd (1977)
Nagovisi	nco	5,000	Hostetler and Hostetler (1975)
Motuna (Siwei)	siw	6,600	Onishi (1994, 2002)
Buin (Telei)	buo	30,500	Laycock (2003)

Table 2.4: Papuan Languages of Bougainville (Allen and Hurd, 1963; Tryon, 2005)

													Austronesian	
Teop														
53 Hahon														
67 71 Tinputz														
21 16 17 Halia														
17 15 16 34 Solos														
27 19 15 56 65 Petats														
40 36 28 34 30 40 Saposá														
32 24 23 25 28 20 20 Banoni														
24 24 20 19 20 15 23 70 Nagarige														
19 16 15 19 20 16 16 20 17 Torau														
37 27 21 25 18 20 35 14 22 29 Papana														
19 19 17 27 19 28 20 20 17 14 20 Nissan														
21 13 17 23 19 18 19 13 18 14 16 19 Nahoa														
11	11	8	5	6	4	2	5	5	10	7	2	4	Kunua	Papuan
8	6	4	6	3	3	2	9	5	8	4	2	3	22 Keriaka	
6	3	5	7	1	3	3	7	7	4	5	3	2	22 30 Rotokas	
8	7	6	8	6	5	5	7	7	11	3	5	5	17 23 35 Eivo	
3	4	7	2	6	3	3	9	2	11	7	3	7	8 5 7 9 Nasioi	
3	5	4	3	4	4	1	11	7	4	4	1	4	4 4 8 6 50 Nagovisi	
3	3	4	2	3	4	0	6	2	7	1	0	4	4 4 6 11 27 17 Siwai	
6	4	5	1	2	3	2	8	4	8	4	1	4	6 7 7 4 20 19 34 Buin	

Table 2.5: Cognate Percentage in the Languages of Bougainville (Allen and Hurd, 1963:21)

Chapter 3

Phonology

Published materials on the phonology of Rotokas are few in number. The primary references are Firchow and Firchow (1969), which describes its segmental phonology, and Firchow (1973), which covers some of the same ground and provides a few remarks concerning its supragemental phonology.

3.1 Segmental Phonology (Phoneme Inventory)

The phoneme inventory of Rotokas is one of the world's smallest, as pointed out by Firchow and Firchow (1969): "The Rotokas languages ranks among those analyzed languages of the world with the least number of **segmental phonemes** [emphasis mine] (hereafter referred to simply as phonemes)." It should be stressed that, although Rotokas possesses the smallest known inventory of "segmental phonemes", the language has a vowel length distinction which effectively doubles its inventory of vowel phonemes (Maddieson, 1984).

3.1.1 Vowels

Rotokas possesses a simple five-vowel system with a two-way length distinction—i.e., every vowel has a short and long variant. Firchow and Firchow (1969) describes the vowels as follows:

/a/ low central, open and unrounded

/e/ mid front, varies between mid close and mid open unrounded

/i/ high front, varies between the high close and high open and is unrounded

/o/ mid back, mid close back rounded

/u/ high close back rounded

Unlike its consonant inventory, the vowel inventory of Rotokas is fairly typical from a typological perspective. As Maddieson (1984:126) notes, an inventory of five vowels is the most

common sort (and represents 21.5% of the languages in the UPSID database). Furthermore, the vowels in the inventory of Rotokas are the five most cross-linguistically common vowel qualities, as shown in Table 3.1.

Vowel	Num. of Languages	Percentage
/i/	290	91.5%
/a/	279	88.0%
/u/	266	83.9%
/o/	139	43.8%
/e/	118	37.2%

Source: Maddieson (1984:125)

Table 3.1: Five Most Common Vowels in UPSID

Vowel length is distinctive (Firchow and Firchow, 1969) and all five vowels have both a short and long counterpart. Minimal pairs for vowel length are provided for all five vowel qualities in Table 3.2, where long vowels are indicated by the IPA symbol ‘:’.

Contrast	Minimal Pair
/a/ vs. /a:/	<i>varuto</i> “flesh, meat” <i>va:ruto</i> “deaf-mute”
/e/ vs. /e:/	<i>ker</i> a “species of bird (similar to albatross)” <i>ke:ra</i> “to call for, to beckon”
/i/ vs. /i:/	<i>pigi</i> “to squeeze” <i>pi:gi</i> “fig”
/o/ vs. /o:/	<i>ovato</i> “legendary wild man” <i>o:vato</i> “type of ground”
/u/ vs. /u:/	<i>tupes</i> i “second” <i>tu:pesi</i> “hoe”

Table 3.2: Minimal Pairs for Vowel Length

3.1.2 Consonants

Rotokas has only 6 consonants, the result of crossing three points of articulation (bilabial, alveolar, velar) with a voicing distinction (voiced vs. voiceless). These phonemes are listed according to their most characteristic allophonic realization in Table 3.3 (see §3.1.3 on the practical orthography used for Rotokas consonants).

The IPA symbols in Table 3.3 are somewhat arbitrary, given that there is considerable allophonic variation of the consonant phonemes, as described in Table 3.4. This suggests that manner is only partially specified (or possibly unspecified).

Voicing	Bilabial	Alveolar	Velar
Voiceless	p	t	k
Voiced	β	r	g

Table 3.3: Rotokas Consonants

Voicing	Manner	Point of Articulation		
		Bilabial	Alveolar	Velar
Voiceless	Stop	p	t	k
	Affricate		ts	
	Fricative		s	
Voiced	Stop	b	d	g
	Flap		r	
	Liquid		l	
	Fricative	β		ɣ
	Nasal	m		ŋ

Table 3.4: Allophonic Variants of Rotokas Consonants

Some aspects of the consonant inventory of Rotokas are fairly typical cross-linguistically. For instance, Maddieson (1984:39) observes that the most common situation among languages is the possession of two stop series (i.e., two set of stops that share the same “manner”) and three places of articulation, and that, if a language has a two stop series, it has a voice onset time contrast between them: over half (51.1%) of the languages in UPSID possess 2 stop series (51.1%) and 3 places of articulation (53.9%) and among languages with two stop series, 88.9% have a voice onset time contrast between them. However, other aspects of the inventory are atypical, such as the lack of a “primary nasal consonant” (Ferguson, 1966).

The two-way voicing distinction found in Central Rotokas appears to be the result of a collapsing of a three-way contrast between voiced, voiceless, and nasal stops, which is still found in Aita Rotokas (Robinson, 2006). During fieldwork in Bougainville, the author worked with speakers of Aita Rotokas from the village of Kusi. Previous description of Aita (Firchow and Firchow, 1969) suggested that the voiced stops of Central Rotokas correspond to nasal stops in Aita. However, the author found that the phoneme inventory of Aita Rotokas includes both voiced and nasal stops. A comparison of cognate items in the two dialects reveals that the nasal stops of Aita Rotokas systematically correspond to voiced stops in Central Rotokas, regardless of their position within the word. However, voiced stops in Central Rotokas do not always correspond to nasal stops in Aita Rotokas. Given the sound correspondences between the two dialects, the reconstruction of Proto-Rotokas appears to require the postulation of a sound change whereby nasality was lost in Central Rotokas (rather than acquired by Aita Rotokas). In other words, Aita Rotokas is conservative with respect to nasality, whereas Central Rotokas is

innovative.

The following minimal pairs demonstrate the voicing distinctions for each point of articulation Firchow and Firchow (1969:273):

Table 3.5: Minimal Pairs for Voicing

Contrast	Minimal Pair
/p/ vs. /v/	<i>pore</i> “to turn” <i>vore</i> “to return”
/t/ vs. /r/	<i>tupa</i> “to lock” <i>rupa</i> “dark”
/k/ vs. /g/	<i>kapu</i> “tight” <i>gapu</i> “naked”

The most systematic allophonic variation is between [t] and [s]. The former occurs between all vowels except /i/ while the latter occurs only before /i/.

3.1.3 A Practical Orthography

A practical orthography for Rotokas was established by Irwin Firchow in collaboration with the Rotokas-speaking community. This orthography is used in a variety of pre-existing language materials already familiar to many native-speakers (The Old Testament, 1993; The New Testament, 1982; Firchow and Akoitai, 1974; Firchow, 1974a,b). One aspect of the practical orthography that is typically overlooked by native-speakers is the distinction between short and long vowels, which is made by doubling a vowel letter.

All examples provided here will be written using this practical orthography.

3.2 Suprasegmental Phonology

In this section the suprasegmental phonology of Rotokas is overviewed. The syllable structure is described in §3.2.1 and word stress is described in §3.2.2. Since reduplication provides additional evidence in favor of the analysis of Rotokas stress assignment as a quantity-sensitive system, it is also discussed, in §3.2.3.

3.2.1 Syllable Structure

There is considerable cross-linguistic variation in permissible syllable types (Blevins, 1995:217). The syllable structure of Rotokas is fairly simple, consisting of an optional consonant onset and a vowel nucleus (with consonant codas prohibited): (C)V. Rotokas therefore falls on the fairly restrictive end of the continuum, permitting only two of the 9 syllable types listed in Table 3.7.

Practical Orthography	IPA
<i>a</i>	a
<i>aa</i>	a:
<i>e</i>	e
<i>ee</i>	e:
<i>g</i>	g
<i>i</i>	i
<i>ii</i>	i:
<i>k</i>	k
<i>o</i>	o
<i>oo</i>	o:
<i>p</i>	p
<i>r</i>	r
<i>s</i>	s
<i>t</i>	t
<i>u</i>	u
<i>uu</i>	u:
<i>v</i>	β

Table 3.6: Practical Orthography for Rotokas

Syllable Type	V	CV	CVC	VC	CCV	CCVC	CVCC	VCC	CCVCC
Permitted?	Y	Y	N	N	N	N	N	N	N

Table 3.7: Rotokas Syllable Types

The two syllable types combine more or less freely to form words of varying length, as illustrated in (1), where a period (full stop) indicates a syllable boundary.

- (1) a. *upe* “ceremonial hat” [*u.pe*]
 b. *aatu* “flying fox” [*aa.tu*]
 c. *varu* “meat” [*va.ru*]
 d. *veeta* “bamboo” [*vee.ta*]
 e. *ketoo* “seedling” [*ke.too*]
 f. *keetaa* “jaw” [*kee.taa*]

A breakdown of the Rotokas lexicon according to word length (measured in terms of the number of segmental phonemes) is provided in Figure 3.1.

Figure 3.1 treats long vowels as a single segmental phoneme. Firchow (1987) analyzes long vowels as a sequence of two short vowels, effectively treating vowel length as an issue

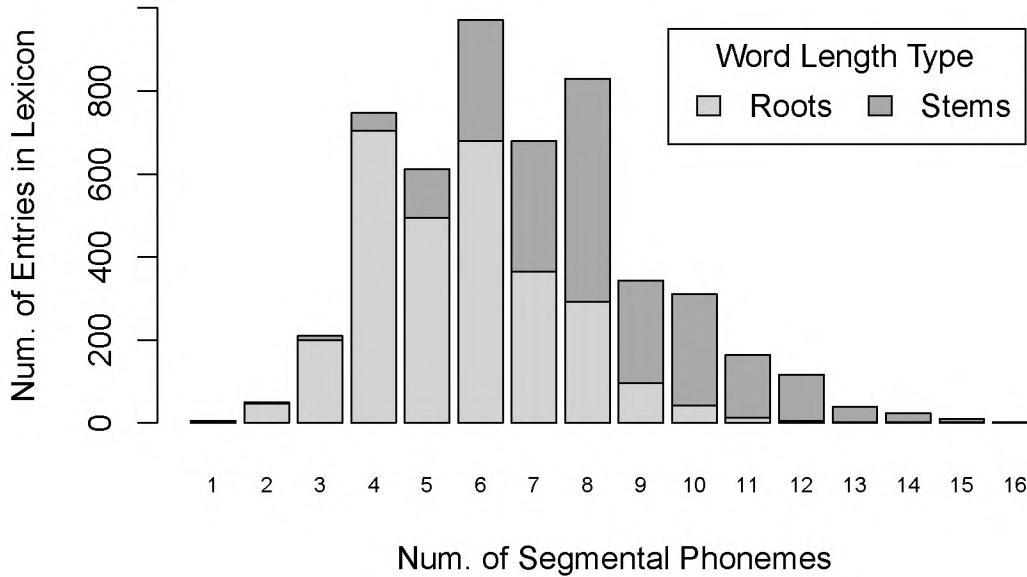


Figure 3.1: Word length in Rotokas Lexicon

of syllable types rather than phoneme types. This analysis requires the postulation of complex vowel nuclei. In other words, according to such an analysis, the syllable structure of Rotokas would be slightly more complicated, as in (2).

$$(2) (C)V_i(V_{i/j})$$

The treatment of vowel sequences remains an issue for more in-depth investigation. Quite long vowel sequences can result from morphological processes, such as reduplication, as in (3), where a six vowel sequence results from the reduplication of the verb stem *aio* “eat”, or cliticization, as in (4).

- (3) *Ratu, aio-a oa aioaio-pa-ri-vere raivaro*
 Ratu food-SG.N RPRO.3.SG.N eat.RDP-CONT-2SG_β-NF road
 Ratu, as for food, eat it on the road.

- (4) *opi-vira ikau-ri vo-vaiao=ia*
 shortcut-ADV run-2SG_β SPEC-road=LOC
 Take a shortcut running along this road.

3.2.2 Word Stress

Firchow (1973) devotes little attention to suprasegmental phonology, but he does provide some observations concerning the assignment of stress. He notes that stress is largely predictable on the basis of word length, measured in syllables.¹

In words consisting of 2-3 syllables, the first syllable is stressed, as in (5); in words consisting of 4 syllables, the first and third syllables are stressed, as in (6).

- (5) a. *ké.pa* “house”
b. *í.to* “banana”
c. *ú.ta.ve* “baylor shell”

- (6) a. *é.to.ka.si* “fire”
b. *á.ta.ri.to* “fish”

Firchow (1973) also claims that in words consisting of 5 or more syllables, such as those in (7), the third-from-the-last syllable is stressed most strongly. This observation is questionable and is further complicated in the case of (7b) by the fact that the third-from-the-last syllable consists of a vowel sequence (*ai*).

- (7) a. *ga.ru.tú.vi.ra* “slowly”
b. *po.po.te.pái.ra.ra* “white-men”

Firchow also notes that there are exceptions to these rules, primarily relating to long vowels, although he does not clarify the nature of these exceptions. One such class of exceptions are bisyllabic words in which the first syllable consists of a single short vowel and the second syllable consists of a single long vowel, such as those listed in Table 3.8. In these words, primary stress falls on the second syllable rather than the first.

This is a systematic class of exceptions, and can be explained if we assume that stress assignment in Rotokas is quantity-sensitive (Hayes, 1995). According to such an analysis, word stress in Rotokas is a fixed system in the sense that the location of stress is predictable by general rules. Furthermore, it appears to be governed purely by phonological factors (distance from word edges, syllable weight, etc.) and not by morphological factors such as the distinction between roots and suffixes.

Given a few reasonably well motivated assumptions, stress assignment in Rotokas can be calculated in a fairly straightforward fashion. The first step in calculating stress assignment in Rotokas is to parse a candidate word into feet, following the assumptions described in (8).

¹Note that Firchow (1973) does not provide syllable boundaries. These are based on the description of syllable structure in Firchow and Firchow (1969).

Words	Gloss
<i>kapó:</i>	“poor, destitute”
<i>kapú:</i>	“dumb, (not) speaking”
<i>ketó:</i>	“plant which came up from seed”
<i>koké:</i>	“peek through a blind or crack”
<i>kokó:</i>	“to carry, a plate”
<i>kopí:</i>	“die, very ill”
<i>koró:</i>	“to have hampered speech”
<i>kupí:</i>	“pupa of beetle”
<i>kuró:</i>	“penis”
<i>kusí:</i>	“cool off”
<i>repó:</i>	“hiccup”
<i>roró:</i>	“to suckle, to drink”
<i>rugó:</i>	“think, reason, hope”
<i>tavó:</i>	“wall up with sago palm leaves”
<i>tokí:</i>	“tight, binding”
<i>torí:</i>	“bamboo”
<i>turá:</i>	“sew up sago leaves”
<i>visí:</i>	“you (pl.)”
<i>voró:</i>	“hunt with dogs”

Table 3.8: Bisyllabic Words Stressed on the Second Syllable

- (8)
- foot construction proceeds from left to right
 - foot construction is quantity-sensitive
 - the foot is trochaic
 - primary stress falls on the leftmost foot

Given the assumption of trochaic feet, a proper foot can therefore take one of the forms provided in Table 3.9, where ‘H’ stands for heavy syllables, ‘L’ for light syllables, and stressed syllables appear in boldface.

Given the previous assumptions, word stress is predictable as follows: primary stress falls on the first syllable of the first foot and secondary stress falls on the first syllable of all subsequent feet. Degenerate feet (i.e., syllables that cannot be parsed into a well-formed trochaic foot) are unstressed.

These principles explain the patterns of word stress observed for the various words mentioned by Firchow (1973), as shown in Table 3.10: *utave* “baylor shell” in (5) parses into one trochaic foot consisting of two light syllables; *atarito* “fish” parses into two feet, but since the third syllable cannot by itself form a proper trochaic foot (cf. Table 3.9)), the second foot is degenerate and therefore cannot receive secondary stress.

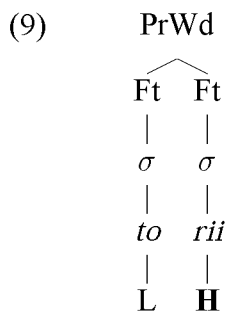
Light Syllable	Heavy Syllable
Ft / \ σ σ L L	Ft σ H

Table 3.9: Trochaic Feet

LL	LLL
PrWd Ft / \ σ σ ke pa L L	PrWd / \ Ft Ft / \ σ σ σ u ta ve L L L

Table 3.10: Metrical Structure for Bisyllabic and Trisyllabic Words

As noted in Firchow and Firchow (1969), vowel length interacts with stress assignment. This can be seen most clearly in the case of CVCV: roots, which receive stress on the second syllable rather than the first. According to the assumptions previously given in (8), this follows from the fact that such words will necessarily begin with a degenerate foot, as shown by (9).



Vowel length in the first two syllables is decisive in stress assignment. Only words beginning with a light syllable followed by a heavy syllable will have primary stress on the second syllable. All other types of words will have primary stress on the first syllable. This is demonstrated in Table 3.11 for words beginning with HL or HH.

There are two additional considerations that lend support to this account of word stress in Rotokas. The first is that stems and word consist minimally of a trochaic foot. In other words,

LL	LH	HL	HH
PrWd	PrWd	PrWd	PrWd
			┌
Ft	Ft	Ft	Ft Ft
└	└	└	
σ σ	σ σ	σ σ	σ σ
ke pa	to rii	pī ro	kee taa
L L	L H	H L	H H

Table 3.11: Metrical Structure of HL and HH Words

there are no content words consisting of only a single syllable and only a few function words consisting of a single syllable.

The exceptions to the trochaic foot minimality requirement are all function words: the complementizer *ra*, the third person singular masculine pronoun *va*, and the deictic particle *vo* “here”. Even these minor exceptions can potentially be explained away by analyzing them as clitics rather than full words. It would then be possible to say that all morphology consisting of less than a trochaic foot attaches to a minimal word.

The second consideration that supports the postulation of a quantity-sensitive system of metrical phonology in Rotokas is reduplication, which is analyzed in the following section.

3.2.3 Reduplication

Reduplication provides additional evidence in favor of the postulation of quantity-sensitive metrical feet in Rotokas. It is a fairly productive process in the language, particularly for verbal stems, where it has an iterative meaning, and to a lesser extent for nominal stems, where it has a distributive meaning.

In the simplest case, reduplication consists of the repetition of an entire stem—that is, full reduplication. Full reduplication is found with bisyllabic stems in which both syllables are light and monosyllabic stems in which the single syllable is heavy. The reduplication of the stems *eri* “dig”, *roo* “saw”, and *gasi* “break” is illustrated in (10) through (12).

- (10) *Rake evao-a erieri-pa-re evao eri-pa-a=ia*
 Rake tree-SG.N dig.RDP-CONT-3SG.M_β tree dig-DERIV-SG.N=LOC
 Rake is digging that tree with a shovel.

- (11) *ragai kookai rooro-pa-a-voi ra rera ori-sia*
 PPRO.1.SG rooster saw.RDP-CONT-1SG_β-PRES_β COMP PPRO.3.SG.M cook-DEP.SEQ
 I sawed the rooster in order to cook it.

- (12) *Perairi rauru-va gasigasi-re-vo uvare oira=ia*
 Perairi spear-SG.F break.RDP-3SG.M_β-IP_β because PPRO.3.SG.F=LOC
ora-toga-ro-e
 RR-spear-3SG.M_α-IP_α
 Perairi broke the spear because he speared himself with it.

Longer stems do not reduplicate in full but instead show partial reduplication. For example, the stems *parikou* “crossed” and *ragete* “be weak” do not reduplicate in full; only the first two syllables are reduplicated, as illustrated in (13) and (14).

- (13) *Savere takei pariparikou-vira pura-re-voi rera*
 Savere wall cross.RDP-ADV make-3SG.M_β-PRES_β PPRO.3.SG.M
vo-kepa-aro=ia
 SPEC-house-POSS=LOC
 Savere is making thatched walls on his house.
- (14) *kakae-to rageragete-pie-pa-i-voi riako-va rera*
 child-SG.M weak.RDP-CAUS-DERIV-3PL_β-PRES_β woman-SG.F PPRO.3.SG.M
pitu-pa-oro
 hold-CONT-DEP.SIM
 The women are weakening the child by holding him so much.

At this stage, the generalization appears to be that reduplication consists of copying the first two syllables of the reduplicated stems; however, the behavior of stems with a long vowel in their first and/or second syllable does not conform to such a simple generalization. When the first syllable of a reduplicated stem is long, the reduplicant consists of only the first syllable, as illustrated for the verb stem *tuusi* “shake” in (15) and the verb stem *rookaa* “distribute” in (16).

- (15) *Tori riro-vira tuutuusi-pa-ro-i uriri-pa-oro*
 Tori big-ADV shake.RDP-CONT-3SG.M_α-PRES_α be.afraid-CONT-DEP.SIM
 Tori is shaking greatly with fear.
- (16) *Raviata oira-ra=pa aio-ara roorookaa-pa-re*
 Raviata man-PL.N=BEN food-PL.N distribute.RDP-CONT-3SG.M_β
 Raviata distributed food to everyone.

When the first syllable of a stem is short and the second syllable long, the long vowel of the second syllable is shortened, as illustrated for the verb stem *rugoo* “think” in (17).

- (17) *Riopeiri, aaro-vira rugorugoo-pa-u*
 Riopeiri excessive-ADV think.RDP-CONT-2SG_α
 Riopeiri, you think too much.

Before attempting to produce a generalization that will cover all of the various attested cases, it pays to revisit the metrical structure of words described in §3.2.2. According to the rules given in (8), the metrical structure of the three stem patterns illustrated in (15) through (17) is provided in Table 3.12.

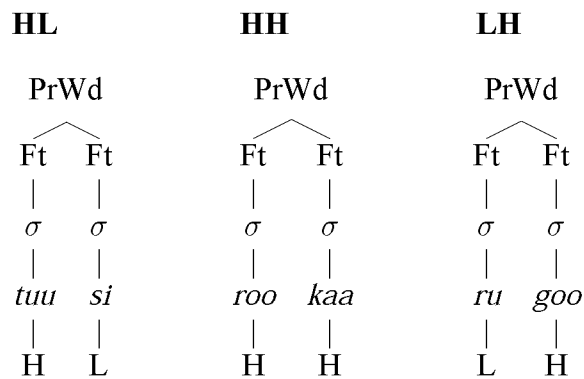


Table 3.12: Metrical Structure of HL, HH, and LH Stems

If reduplication is described in terms of the units of metrical phonology, a simple and elegant generalization of reduplication can be maintained, which is simply that reduplication copies the first foot (rather than the first two syllables). Since in Rotokas a foot consists of either a heavy syllable or two light syllables (cf. §3.2.2), the reduplication of stems with a heavy syllable falls out naturally, as can be seen in Table 3.13.

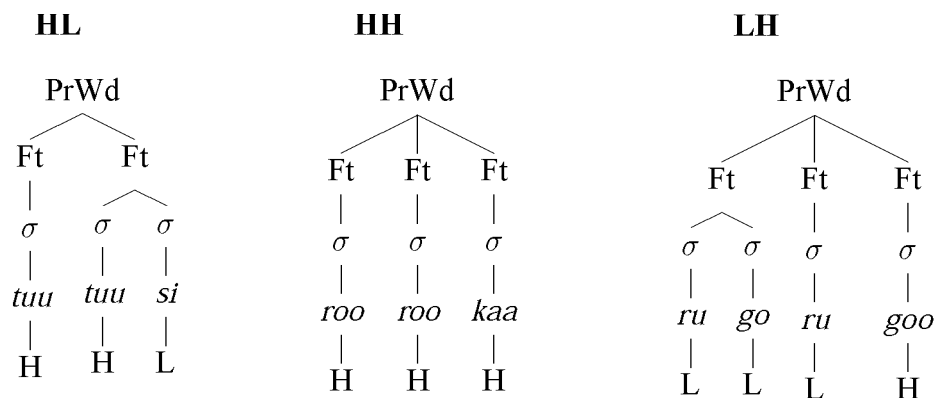


Table 3.13: Metrical Structure of Reduplicated HL, HH, and LH Stems

Chapter 4

Word Classes

This chapter provides an overview of the word classes of Rotokas. Although a meaningful distinction can be drawn between word classes and parts of speech (for example, a given part of speech may consist of multiple word classes), the term word class is used here in a fairly loose sense, more or less as a synonym for part of speech. Part of speech systems have received a great deal of attention among typologists and the discussion here is informed by this literature (Schachter, 1985; Sasse, 1993; Anward et al., 1997; Vogel and Comrie, 2000; Evans, 2000; Evans and Osada, 2005).

4.1 Root, Stem, and Word Classes

Before discussing the various word classes found in Rotokas, it is useful to distinguish between root, stem, and word classes. The distinction between these three units is as follows (Payne, 1997):

Root A root is an unanalyzable form that expresses the basic lexical content of the word.

Stem A stem consists minimally of a root, but may be analyzable into a root plus derivational morphemes

Word A word is a minimal stand-alone unit, which consists of a stem and possibly inflectional morphemes.

Consider (18). It is a minimal sentence in the sense that none of its elements can be freely omitted (direct objects of transitive verbs cannot be freely elided in Rotokas, and are realized either as a pronoun or a noun phrase) and it consists of only two words: the noun *koie* and the verb *kopiipieeva*.

- (18) *koie kopii-pie-e-va*
pig die-CAUS-3SG.F_β-RP_β
She killed the pig.

In (18), the word *kopiipieeva* “She killed” is morphologically complex. It is based on the verb stem *kopiipie* “kill”, which is ultimately derived from the verb root *kopii* “die”; however, the word *koie* “pig” is morphologically simple, consisting of only a single morpheme. It is therefore a root, a stem, and a word simultaneously. The analysis of the two words into root, stem, and word is provided in Figure 4.1.

Morphologically Simple	Morphologically Complex
Word ┌─── Stem ┌─── Root ┌─── <i>koie</i>	Word ┌─────────── Stem ┌─── Root ┌─── <i>kopii</i> – <i>pie</i> – <i>e</i> – <i>va</i>

Figure 4.1: Breakdown of Words from (18)

A full account of word classes in Rotokas should provide an analysis of the relationship between root and stems on the one hand and stems and words on the other. It would provide an explicit account of why some roots are capable of functioning as a noun or as a verb whereas others can only function as one or the other, but not as both. For example, the root *atari* “fish” is capable of functioning as a verb, as in (19), or a noun, as in (20).

- (19) *Jisu Pita tavi-re-va oa iava riro-vira atari-ro-epa*
 Jesus Peter tell-3SG.M_β-RP_β hence big-ADV fish-3SG.M_α-RP_α
 Jesus told Peter so that he would go catch many fish.

- (20) *opuruva ivara iava vuvureo-to atari-to site-pa-io-vo osa*
 canoe above POST flying-SG.M fish-SG.M watch-CONT-1PL.EXCL-IP_β as
papa-pa-re-vo toru kou-ro ivara=ia
 fly-3SG.M_β-IP_β wave CLASS-PL.CL above=LOC
 From inside of the canoe, we look at the fish as he flies on top of the waves.

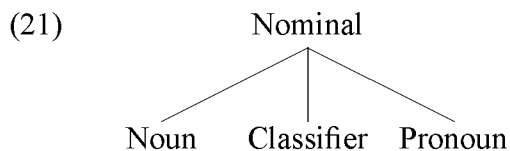
Given roots such as *atari* “fish”, it is necessary to accept that some roots are underspecified with respect to their stem class membership. However, it is not the case that all roots are unspecified for word class membership—i.e., there is a distinction between nouns and verbs within the lexicon itself—since there are a number of stems (e.g., *kakae* “child”) that can be used nominally but not verbally. The primary concern of this chapter will therefore be the relationship between stem and word classes.

The issue of root versus stem will arise later in the case of “labile verbs”—that is, ambivalent verb roots that show two patterns of valency, either taking a single core argument and showing α agreement or taking two core arguments and showing β agreement. For example, the verb root *kavau* has two meanings, “to be born” or “to give birth”. The meaning “to be born” shows α agreement while the meaning “to give birth” shows β agreement. The question is whether

there is a single underspecified root from which the two meanings (and their associated sub-categorization and agreement) derive. For a more theoretically oriented discussion of this issue and its syntactic representation, see Chapter 11.

4.2 An Inventory of Rotokas Word Classes

In the following sections, the various word classes of Rotokas are enumerated and described in turn. Some of these word classes can be grouped together to form major word classes. For example, nouns, classifiers, and pronouns could be grouped together into a broader category of nominals, as in (21).



This suggests that word classes can be organized hierarchically into inheritance classes, such that the behavior of a parent class (e.g., Nominal) is inherited by a child class (e.g., Pronoun). There is considerable debate concerning the feasibility of this exercise, since it has been claimed that any attempt to ground the exercise in purely distributional criteria will produce almost as many subclasses as items considered in the analysis (Croft, 2006). I will not attempt to construct such an inheritance hierarchy for all of the word classes discussed here, since it raises a number of theoretical questions (e.g., Is multiple inheritance permissible?) that go beyond the scope of the more modest descriptive goals of this section (but see Davis (2001) for a theoretical approach based on HPSG).

4.2.1 Nouns

The defining feature of nouns is their ability to inflect for number and gender. Nouns are an open class in Rotokas, since numerous words from Tok Pisin have been borrowed into Rotokas (with varying degrees of phonological transformation as the larger phonological inventory of Tok Pisin is shoe-horned into the smaller inventory of Rotokas). A handful of Tok Pisin loan nouns are listed in Table 4.1.

The use of these borrowed nouns is illustrated in (22) and (24). Note that the borrowed noun *tisa* “teacher” occurs with ‘native’ (i.e., non-borrowed) inflectional morphology: the singular masculine suffix *-toa* and the indefinite suffix *-vai* (see §5.1).

- (22) *vovokio=ia siveri pura-pa-i-voi reo sipo-pa kepa=ia*
 today=LOC cement make-CONT-3PL_β-PRES_β talk send-DERIV house=LOC
 Today they’re laying cement for the telephone building.

Noun	Gloss	Tok Pisin Source
<i>peepa</i>	‘paper’	<i>pepa</i>
<i>pike</i>	‘gum’	<i>pike</i>
<i>reeta</i>	‘ladder’	<i>reta</i>
<i>reviti</i>	‘rabbit’	<i>reviti</i>
<i>rigi</i>	‘ring’	<i>ring</i>
<i>sikuru</i>	‘school’	<i>skul</i>
<i>sipuru</i>	‘spoon’	<i>sipuru</i>
<i>siveri</i>	‘cement’	<i>simen</i>
<i>tevoru</i>	‘table’	<i>tebol</i>
<i>tisa</i>	‘teacher’	<i>tisa</i>
<i>valusi</i>	‘plane’	<i>balus</i>

Table 4.1: Rotokas Nouns Borrowed from Tok Pisin

- (23) *ragai sipuru=ia aio toke-pa-ra-i kakae vure=pa*
 PPRO.1.SG spoon=LOC food serve-CONT-1SG_α-PRES_α child ANIM.PL=BEN
 I serve food to the children with a spoon.

- (24) *oisio ruipa-pa-i-e ra tisa-toa-vai ou-pe ra*
 COMP want-CONT-1PL.EXCL-IP_α and teacher-SG.M-INDEF get-1PL.EXCL+SUB and
voeao sikuru-pie-pa-re-ve
 PRO.3.PL.M school-CAUS-CONT-3SG.M_β-SUB
 We want to get a teacher to school them [the children].

4.2.1.1 Gender and Noun Subclasses

On the basis of the form of number inflection, Rotokas nominals can be broken down into a number of distinct classes, which are listed below in Table 4.2.¹

Classes 1 and 2 make a semantically motivated distinction between the masculine and feminine based on natural gender (i.e., biological sex). Class 1 nouns may be masculine and/or feminine, and the distinction between the two genders is preserved for all number categories (singular, dual, and plural), with the exception of the irregular nouns in 1c. The subclasses of Class 1 differ from each other in their form of masculine plural marking: Class 1a uses *-irara*; Class 1b uses the pluralizer *-vure*, which is a free form and not a bound morpheme (see §4.2.2 for discussion); and Class 1c uses the pluralizer *-ra*. Class 2 nouns may also be either masculine or feminine in the singular and dual, but the distinction is neutralized for the plural—i.e., there

¹Firchow (1987:40–41) divides Rotokas noun roots into five classes; however, there are a number of gender/number-marking suffixes that he does not deal with—specifically, the animate (non-human) plural *-kare* and the irregular animate plural *-vure*.

Class	Class	Singular	Dual	Plural
1a	Masculine	-to(a)	-toarei	-irara
	Feminine	-va	-rirei	riako
1b	Masculine	-to(a)	-toarei	vure
	Feminine	-va	-rirei	riako
1c	Masculine	-to(a)	-toarei	-ra
	Feminine	-va	-rirei	
2	Masculine	-to(a)	-toarei	kare*
	Feminine	-va	-rirei	
3	Masculine	-to(a)	-toarei	-ara
4	Feminine	-va	-rirei	
5	Neuter	-a	-(a)rei	

* the archaic form of *kare* is *ragui*

Table 4.2: Noun Classes and Number Inflection

is only one form, the pluralizer *kare*. Classes 3 through 5 have a fixed gender. They are formally distinguishable from Classes 1 and 2 on the basis of their form of plural marking, which is the suffix *-ara*.

The assignment of nouns to the various noun classes is largely predictable from semantics. The nouns in Class 1 are human; the nouns in Class 2 are (non-human) animates; and the nouns in Class 3, 4, and 5 are almost exclusively inanimate. The role of semantics in noun class assignment can be seen in the behavior of the noun stem *koi* ‘‘pig’’. When it refers to living pigs, it occurs in the plural with the pluralizer *kare*, as illustrated in (25); however, when it refers to pork, it occurs with the plural suffix *-ara*, as illustrated in (26).

- (25) *koie kare siku-pa-a-veira rikui=ia*
 pig FP wallow-CONT-3PL_α-HAB hole=LOC
 The pigs wallow in mudholes.

- (26) *uva evara rutu oisioa siovara=ia tou-pa-oro riro-vira*
 and DEM.MED.PL.N very always on=LOC be-CONT-DEP.SIM big-ADV
sipei-pa-pe koie-ara
 sweet-CONT-SUB pig-PL.N
 Always being inside of them, the pig meat is very sweet. [Firchow (1974b:81)]

Nominal inflection for number/gender is optional in some circumstances. For example, consider the feminine noun *aveke* ‘‘stone’’. It occurs with the suffix *-va* in (27) but occurs bare in (28).

(27) *riako-va* ***aveke-va*** *peka-e-vo* *uva rakoru keke-e-vo* *uva*
 woman-SG.F stone-SG.F turn_over-3SG.F_β-IP_β and snake look_at-3SG.F_β-IP_β and
kea-o-e *oisio uo-va*
 mistake_for-3SG.F_α-IP_α as eel-SG.F
 The woman turned over the stone and saw a snake but mistook it for an eel.

(28) *kaveakapie-vira* ***aveke*** *tovo-i-vo* *uva kove-o-e*
 insecure-ADV stone place-3PL_β-IP_β and fall-3SG.F_α-IP_α
 They placed the stone insecurely and it fell down.

Zero marking is more common for some types of nouns (non-specific and/or inanimate) than others (human) and some grammatical roles (object) than others (subject). In the case of noun incorporation, zero marking is obligatory (see §9.2.2). In the following sections, each noun class is reviewed in greater detail.

4.2.1.1.1 Class 1 The first class consists of nouns that refer to human beings, as can be seen from the sample list provided in Table 4.3. It includes various kinship terms, inherently human nouns, agentive nouns derived from other parts of speech (typically verbs), and various quasi-human nouns.²

Class	Noun	Gloss	Notes
Kinship Terms	<i>aite</i>	father	
	<i>aako</i>	mother	
	<i>ovii</i>	offspring	
Human	<i>avuka</i>	old person	
	<i>kakae</i>	child	irregular plural: <i>vure</i>
Derived Agentive	<i>ira-pa</i>	leader	derived from verb <i>ira</i> “precede, go ahead”
	<i>keri-pa</i>	enemy	derived from verb <i>keri</i> “make enemies with”
Other	<i>tugara</i>	spirit	
	<i>ova</i>	mythical dwarf	

Table 4.3: Class 1 Nouns

The pattern of inflection for Class 1 nouns can be illustrated with the various forms of the noun stem *ovii* “offspring”, which occurs in the masculine singular in (29), the feminine singular in (30), the masculine dual in (31), the feminine dual in (32), the masculine plural in (33), and the feminine plural in (34).

²The nouns in this class would be labelled “rational” according to the terminology used for Dravidian languages, where a distinction is made between “rational” (humans, deities) and “irrational” (animals and everything else) nouns.

- (29) *aite ovii-to agesi-pie-re-vere*
 father offspring-SG.M laugh-CAUS-3SG.M_β-NF
 The father will make his son laugh.
- (30) *Vivisori voki vuuta-ia takato-pa-ro-e ovii-va=re*
 Vivisori night time=LOC speak_angrily-CONT-3SG.M_α-IP_α offspring-SG.F=ALL
 Vivisori spoke angrily to his daughter at night.
- (31) *Jacob Josepu ovii-toarei-aro virako-re-va waiterei=ia variri-oro*
 Jacob Josepu offspring-DL.M-POSS bless-3SG.M_β-IP_β PRO.2.DL.M=LOC pray-DEP.SIM
 Jacob blessed Joseph's two boys praying for them.
- (32) *Uva ovii-rirei oaesi aru-pa-si-va*
 and offspring-DL.F PRO.POSS.3.DL.M order-CONT-3DL.M-IP_β
 The two of them ordered their two daughters. [§C.1]
- (33) *Tori ovii-irara rutu=va ava-ro-e eisi=re Wakunai*
 Tori offspring-HUM.PL very=COM go-3SG.M_α-IP_α LOC=ALL Wakunai
 Tori went with all his children to Wakunai.
- (34) *Raratuiri ira oisoa ovii riako-aro*
 Raratuiri RPRO.3.SG.M always offspring FP-POSS
tarai-pie-pa-re-ve
 understand-CAUS-CONT-3SG.M_β-SUB
 Raratuiri would always teach his daughters.

Whereas *ovii* “offspring” is an example of a Class 1 noun stem that can occur in either the masculine or feminine gender, some Class 1 nouns are inherently gendered and occur in one gender or the other but not both. For example, the noun stem *aite* “father” is inherently masculine and cannot occur in the feminine gender. It occurs in the masculine singular in (35), the masculine dual in (36), and the masculine plural in (37).

- (35) *kakae-to pikopiko-pie-re aite-to uvare*
 child-SG.M whip.RDP-CAUS-3SG.M_β father-SG.M because
kaureo-pa-ro-e
 disobedient-CONT-3SG.M_α-IP_α
 Father is whipping the boy because he was disobedient.
- (36) *aite-toarei rutu kopii-si-epa oira virakoi-pie-oro uva*
 father-DL.M very die-3DL.M-RP_α PPRO.3.SG.F be.orphan-CAUS-DEP.SIM and
oira vaisi-pa-i-veira oiso virakoi-i-va
 PPRO.3.SG.F call-CONT-3PL_β-HAB COMP orphan-3PL_β-RP_β
 Both parents died leaving her orphaned and they call her an orphan.

- (37) *vovokio-pa-irara riro kaureo-irara aite-irara=re*
 today-DERIV-HUM.PL big disobedient-HUM.PL father-HUM.PL=ALL
 The people of today are disobedient to their parents.

There are two subclasses that display minor irregularities: Class 1b and Class 1c. Class 1b—which consists of a single member, the nominal stem *kakae* “child”—behaves like a noun from Class 1 except that its plural marker is an independent word, the free pluralizer *vure*, as exemplified in (38). When the modifier *riro* “many” agrees with the noun *kakae vure* “children” in (38), it takes the expected Class 1 plural suffix *-irara*.

- (38) *Kura vaio ora Raku katai-toarei-vi raga viovoko-toarei vo-urui-o=ia ari*
 Kura ANIM.DL and Raku one-DL.M-DIM only teenager-DL.M SPEC-village-?=LOC but
riro-irara rutu kakae vure raga
 big-HUM.PL very child HUM.PL only
 Kura and Raku are the only two teenage boys in this village because there are many children.

- (39) *oearo-vu oisoa avui-pa-i-ve voo-va iruvao-ara kakae*
 PRO.3.PL.M-ALT always pierce.nose-CONT-3PL_β-SUB here=ABL nose-PL.N child
vure ora kakae riako
 PL.M and child FP.F
 Other people would always pierce the noses of the boys and girls.

Class 1c consists of only two members, the nouns *oira* “man” and *riako* “woman”. Examples of the singular, dual, and plural form of *riako* “woman” are provided in (40) through (42).

- (40) *riako-va kakae-to roroo-pie-pa-e-vo*
 woman-SG.F child-SG.M nurse-CAUS-CONT-3SG.F_β-IP_β
 The woman is nursing the child.

- (41) *riako-rirei airea eisi=va urio-ere-i-e Kereaka*
 woman-DL.F PPRO.RES.3.DL.F LOC=ABL come-3DL.F-EPEN-IP_α Kereaka
 The two women came from Kereaka.

- (42) *riako-ra ava-a-e sioko ou-sia ori-sia*
 woman-PL.N go-3PL_α-IP_α chayote get-DEP.SEQ cook-DEP.SEQ
 The women went to get chayote in order to cook.

Noun	Gloss	Notes
<i>aatu</i>	flying fox	
<i>asioko</i>	cockroach	
<i>atari</i>	fish	
<i>isike</i>	rat	
<i>isio</i>	spirit	believed to reside in the jungle
<i>kaakau</i>	dog	
<i>kavori</i>	crayfish	
<i>koie</i>	pig	
<i>kokio</i>	bird	
<i>koora</i>	possum	
<i>posiva</i>	black ant	

Table 4.4: Class 2 Nouns

4.2.1.1.2 Class 2 The second class of nouns refer primarily to non-human animates (insects, birds, fish, mammals, etc.), as can be seen from the sample list of Class 2 nouns provided in Table 4.4.

The noun *koie* “pig” exemplifies this class of nouns, as can be seen from examples in (43) through (45), which illustrate its masculine singular, feminine singular, and plural forms.

- (43) *ragai rera-aro koie-to ritoko-pa-re-vora evoa*
 PPRO.1.SG PPRO.3.SG.M-POSS pig-SG.M defecate-CONT-3SG.M_β-DP_β there
 My (male) pig defecated over there.

- (44) *Ririuto ora-poisi-ro-e koie-va ora-upo-oro aruvea*
 Ririuto RR-brace-3SG.M_α-IP_α pig-SG.F RR-fight-DEP.SIM yesterday
 Ririuto braced himself fighting the (female) pig yesterday.

- (45) *koie kare urui-a vuri keke-pie-i-vo va eri-oro ora*
 pig ANIM.PL village-SG.N bad look-CAUS-3PL_β-IP_β PPRO.3.SG.N dig-DEP.SIM and
ritoko kou-oro voraro rutu
 pig.shit leave-DEP.SIM everywhere very
 The pigs made the village look bad, digging and defecating everywhere.

The form *ragui* is an archaic form of the *kare* which is still found in the speech of some older speakers. Its use is illustrated below in (46).

- (46) *paitu rovu=ia oteote ragui keke-i-vorao kakae vure aruvea.*
 deep CL=LOC crocodile FFP look_at-3PL_β-NP_β child FFP yesterday
 Yesterday the boys looked at crocodiles in the pool.

Some Class 2 nouns lack gender/number inflection in the singular for one gender, but not the other. This subclass of nouns consists largely (if not exclusively) of non-human animates—for example, the noun *rakoru* “snake” has zero marking in the singular feminine, as in (47), but not in the singular masculine, as in (48). It otherwise behaves like a Class 2 noun, as can be seen from its plural form in (49).

- (47) *rakoru ora-pugo-o-i uvare oira ragi-re-voi Ruruviri*
 snake RR-roll-3SG.M_α-PRES_α because PRO.3.SG.F beat-3SG.M_β-PRES_β Ruruviri
virukoa=ia
 stick-SG.N=LOC
 The snake coiled up because Ruruviri beat her with a stick.

- (48) *rakoru-to sirava-pa-ro-i Tavi=re*
 snake-SG.M hiss-CONT-3SG.M_α-PRES_α Tavi=ALL
 The snake is hissing at Tavi.

- (49) *vo-kaki ua siovara=ia rakoru kare tou-pa-i-veira riro-pa kare*
 SPEC-cave CLASS inside=LOC snake FPP be-CONT-3PL_β-HAB big-DERIV FPP
 Inside of the hole live many snakes.

4.2.1.1.3 Class 3 The third class of nouns consists almost exclusively of nouns that refer to inanimate objects, as can be seen from the sample of Class 3 nouns provided in Table 4.3. These nouns largely refer to things traditionally associated with male culture (e.g., hunting, warfare) and/or long, thin objects. Aikhenvald (2000:42) observes a similar pattern of classification for the Manambu (Ndu family), spoken in the East Sepik region of mainland Papua New Guinea, noting that “nouns which denote male humans and higher animates and long and thin objects are masculine, while those which denote female humans and high animates, and short and round objects, are feminine.”

The noun *opita* “coconut tree” is illustrated in its singular and plural form in (50) and (51). (No example of the dual could be found in the materials available to me.)

- (50) *kakae-vira tou-pa-oro roo opita-to pau-ri-va*
 little-ADV be-CONT-DEP.SIM DEM.PROX.SG.M coconut-SG.M plant-2SG_β-RP_β
 When you were little, you planted this coconut tree.

- (51) *Kakarera=ia uva opita-ara pau-re-va Raupeto*
 Kakarera=LOC and coconut-PL.N plant-3SG.M_β-RP_β Raupeto
 Raupeto planted coconut trees in Kakarera.

Noun	Gloss	Notes
<i>avuo</i>	charm belt	believed to strenghten and protect children wearing it
<i>govugovu</i>	rainbow	
<i>kaku</i>	fighting club	traditionally used in warfare
<i>kato</i>	rib	
<i>keari</i>	long spear	traditionally used in hunting possum
<i>kipe</i>	scythe	used to cut wild grass
<i>koki</i>	ear	
<i>kupare</i>	smoke	
<i>opita</i>	coconut tree	
<i>pakou</i>	fighting stick	traditionally used in warfare
<i>sigo</i>	bush knife	
<i>vopa</i>	betel nut	traditionally used to make <i>pakou</i> “fighting stick”

Table 4.5: Class 3 Nouns

4.2.1.1.4 Class 4 The fourth class of nouns refer almost exclusively to inanimate objects, as can be seen from the partial list of Class 4 nouns provided in Table 4.3. It is unclear what determines the assignment of inanimate nouns to this class. In general, however, these nouns tend to refer to tools (bow, axe), containers (basket, pot), and things relating to water (rain, dew, beach, canoe).

The pattern of inflection for gender and number is illustrated by the stem *aveke* “stone”, which is illustrated in the singular (52), dual (53), and plural (54).

- (52) *riako-va* ***aveke-va*** *peka-e-vo* *uva rakoru keke-e-vo* *uva*
 woman-SG.F stone-SG.F turn.over-3SG.F_β-IP_β and snake see-3SG.F_β-RP_β and
kea-o-e *osia uo-va*
 confuse-3SG.F_α-IP_α as eel-SG.F
 The woman turned over the stone and saw the snake and thought it was an eel.

- (53) *uva Pauto tavi-ro-iva* *Moses airei-vu* *aire-pa-rirei* ***aveke-rirei***
 and God tell-3SG.M_α-RP_α Moses TWO-ALT new-DERIV-DL.N stone-DL.N
pura-oro *vairei=va* *Pautoa iare* *ipa-ro-epa* *pukui-a=ia*
 make-DEP.SIM PRO.3.DL=COM God POST go_up-3SG.M_α-RP_α mountain-SG.N=LOC
 And God told Moses to make two new stones and he went to God with them on the
 mountain. [Exodus 34:4]

- (54) *Pioto ira* *aru-va* *pura-pa-re-veira* ***aveke-ara=ia***
 Pioto RPRO.3.SG.F mark-SG.F make-CONT-3SG.M_β-HAB stone-PL.N=LOC
 Pioto (a river) always makes a mark on the stones.

Noun	Gloss	Notes
<i>aasi</i>	betel nut	
<i>aveka</i>	beach	
<i>aveke</i>	stone	
<i>evao</i>	tree	
<i>garoa</i>	rattan, cane, vine (generic)	
<i>kareko</i>	vine	
<i>koeta</i>	bow	
<i>kogo</i>	stone axe	
<i>opuru</i>	canoe	
<i>pekuri</i>	basket	traditional woven variety
<i>pirutu</i>	flash flood	
<i>pitoka</i>	pot	traditional clay variety
<i>taetuo</i>	child's bow	essentially a plaything

Table 4.6: Class 4 Nouns

4.2.1.1.5 Class 5 The fifth class of nouns refer exclusively to inanimate objects, as can be seen from the partial list of Class 1 nouns provided in Table 4.3.

Noun	Gloss	Notes
<i>akoro</i>	lime	
<i>apui</i>	ditch	
<i>atoi</i>	village	
<i>raiva</i>	road	
<i>torara</i>	axe	generic term (used primarily for gardening)
<i>tetevu</i>	sago	
<i>voki</i>	day	
<i>vuku</i>	book	borrowed from Tok Pisin
<i>vuuta</i>	time, space	

Table 4.7: Class 5 Nouns

The neuter inanimate nouns and their pattern of inflection is illustrated by the stem *urui* “village”, which is illustrated in the singular (55), dual (56), and plural (57).

- (55) *Aita=ia tou-pa-i urui-a oa vaisi-pa-i Kuusi*
 Aita=LOC be-CONT-3PL_β village-SG.N RPRO.3.SG.N call-CONT-3PL_β Kuusi
 In Aita there's a village that they call Kuusi.

- (56) *vo-urui-rei ora-toa-raga-pa-peira*
 SPEC-village-DL.N RR-face-just-CONT-HAB
 The two villages face each other.
- (57) *reo-a paru-pie-ri urui-ara rutu iare ra sikua=ia kovo-sia*
 talk-SG.N move-CAUS-2SG_β village-PL.N very POST and school=LOC work-DEP.SEQ
urio-a-ve
 come-3PL_α-SUB
 Pass the word for everyone to come to work at the school.

Neuter nouns frequently appear without gender/number marking, particularly in the third person singular, as in (58) and (59).

- (58) *Teokon urui oa tou-pa-i Wakunai=ia ruvara=ia*
 Teokon village RPRO.3.SG.N be-CONT-3PL_β Wakunai=LOC near=LOC
 Teokon village is close to Wakunai.
- (59) *Ruruvu urui arakasi-ei rutu viapau oira-ra-vai*
 Ruruvu village empty-PRES_α very NEG man-PL.N-INDEF
 Ruruvu village is truly empty, there are no people.

Some nouns take the suffix *-arei* (rather than *-rei*) to mark the neuter dual—e.g., *vavae* “hand”, as illustrated in (60).

- (60) *kakae-to vara-vira voka-pa-re aue=ia koko-toarei ora vavae-arei*
 child-SG.M low-ADV walk-CONT-3SG.M_β CONN=LOC leg-DL.N and hand-DL.N
 The little boy is walking low on his hands and legs.

4.2.2 Noun Classifiers

Nominal classification subsumes a number of distinct grammatical phenomena, including gender markers and noun classifiers (Grinevald, 2000; Aikhenvald, 2000). The gender system of Rotokas was already discussed in the previous section (§4.2.1.1). Here the system of noun classifiers in Rotokas will be described.

Grinevald (2000) distinguishes between four types of classifiers: numeral classifiers, noun classifiers, genitive classifiers, and verbal classifiers. Of these four types of classifiers, all but verbal classifiers are found in the East Papuan languages (Terrill, 2002). However, in Rotokas, only noun classifiers are found, and these consist of two different systems. One system consists of configurational classifiers—that is, classifiers that make reference to the shape of the nouns they classify—while the other consists of taxonomic classifiers—that is, classifiers that make reference to the kind of nouns they classify.

Classifier	Semantic Domain	Example
<i>isi</i>	round object	<i>takura isi</i> “egg CLASS”
<i>kuio</i>	round object (edible)	<i>opo kuio</i> “taro CLASS”
<i>ua</i>	narrow object	<i>rogara ua</i> “sand CLASS”
<i>kae</i>	long object	<i>evao kae</i> “tree CLASS”

Table 4.8: Shaped-Based Noun Classifiers (Firchow, 1987:36)

The shape-based classifier system has few members and appears to be a closed class. The items belonging to this system are provided in Table 4.8.

The classifiers in Table 4.8 resemble a gender system, to the extent that the classifiers also occur on modifiers of the classified noun, regardless of whether the modifier is attributive, as in (61) and (62), or predicative, as in (63) and (64).

Attributive

(61) *gorupasi isi rutu karuvera isi aio-a-voi*
 strong CL very Singapore CL eat-1SG_β-PRES_β
 I am eating a really strong Singapore fruit.

(62) *vearopie ua pua ua vura-a-vo riakova iava oa iava oira=pa*
 pretty CL face CL look-1SG_β-IP_β woman-SG.F POST hence PPRO.3.SG.F=BEN
ruipa-ra-e
 want-1SG_α-IP_α
 I saw the pretty face of the woman and that’s why I desired her.

Predicative

(63) *riro kuio rutu vao opo kuio*
 big CL very DEM.PROX.SG.N taro CL
 This taro is a really big taro.

(64) *kokovara isi opita isi*
 unripe CLASS coconut CLASS
 The coconut is unripe.

In addition, anaphoric reference to a noun classified by one of these classifiers takes the form of a pronoun co-occurring with the classifier, as illustrated in (65) and (66).

(65) *Rite=pa opo isi oriori-e-voi aako-va ra va isi*
 Rite=BEN taro CL cook.RDP-3SG.F_β-PRES_β mother-SG.F and PPRO.3.SG.N CL
kae-re-ve vo=re sikuru
 carry-3SG.M_β-SUB SPEC=ALL school
 Mother scraped taro for Rite and he will carry it to school.

- (66) *Mak ira kiki isi gori-re-vo va isi kiki-oro*
 Mark PPRO.3.SG.M ball CL turn-3SG.M_β-IP_β PPRO.3.SG.N CL kick-DEP.SIM
 Mark turned the ball by kicking it.

There is a second classifier system which differs from the previous classifiers in various respects. This classifier system is not shape-based. Instead, these classifiers have a collective meaning for fairly specific semantic classes—for example, the classifier *tai* refers to a collection of edible vegetables, such as *arua* “vegetables”, *ruve* “aibika”, or *rereveo* “wild sugarcane”. A number of these forms are listed below in Table 4.9. It is less clear that these classifiers constitute a closed class; although they are more numerous than the shape-based classifiers, no borrowed forms have been identified to date.

Classifier	Semantic Domain	Notes
<i>kokoo</i>	plateful	
<i>koota</i>	group of rope-like objects	
<i>kou</i>	heap	
<i>kovo</i>	garden	
<i>ovi</i>	liquid	
<i>pitu</i>	swarm	
<i>pota</i>	group of flat layered objects	
<i>rovu</i>	body of liquid	
<i>tai</i>	edible vegetables	
<i>tesi</i>	group of bamboo tubes	
<i>tou</i>	container	
<i>vasie</i>	group of people	
<i>viku</i>	group of people	
<i>vou</i>	stranger	

Table 4.9: Noun Classifiers

Firchow (1987:35-36) describes these classifiers under the category of “nominal suffixes”; however, this characterization is inaccurate since classifiers are not bound to the nouns with which they co-occur—i.e., they can function as the head of a noun phrase, as in (67) and (68).

- (67) *ruve tai ori-e-voi uva riro-vira ruve-vira irao uvare riro-vira*
 aibika CLASS cook-3SG.F_β-PRES_β and big-ADV greasy-ADV INTENS because big-ADV
opita kuri-o-i vo-tai=re
 coconut scrape-3SG.F_α-PRES_α SPEC-CL=ALL
 She is cooking aibika and it is very greasy because he is scraping a lot of coconut on it.

- (68) *tatai-va ruveta tai=va kare-o-i vo=va kovo-a vo-tai*
 aunt-SG.F aibika CLASS=COM return-3 SG.F_α-PRES_α SPEC=ABL work-SG.N SPEC-CL
ori-sia ra va aio-e-ve
 cook-DEP.SEQ and PPRO.3.SG.N eat-3SG.F_β-SUB
 Auntie is coming from the garden with the aibika in order to cook it and eat it.

On the basis of Firchow's description, Terrill (2002:73) characterizes these forms as "special pluralizers for different types of objects". These classifiers do resemble free (i.e., unbound) pluralizers (such as *riako* or *vure*) in some respects but their differing behavior with respect to the marking of number speaks in favor of their analysis as separate word classes. For example, both classifiers and free-form pluralizers can function as the head of a noun phrase. This was already illustrated for the noun classifiers in (67) and (68) and is illustrated for the free pluralizers *riako* in (69) and *kare* in (70).

- (69) *kapoko pupupu-ro iava orave-ara pura-pa-i-veira vo-riako*
 kapok cotton-PL.CL POST pillow-PL.N make-CONT-3PL_β-HAB SPEC-FP
 From kapok cotton the women make pillows.

- (70) *raageo kare ou-io-vorao uva vo-kare aio-io-vora*
 green.frog FP get-1PL.EXCL-NP_β and SPEC-FP eat-1PL.EXCL-DP_β
 We will get the green frogs and then we will eat them.

Despite their similarities, noun classifiers can be distinguished from free-form pluralizers on the basis of their ability to take number marking.³ The singular lacks overt number marking, whereas the dual is marked by *-rei* and the plural by *-ro*. For example, the classifier *kuio* occurs with dual marking in (71) and the classifier *kou* occurs with plural marking in (72).

- (71) *evo kuio-rei oarea pau-re-va*
 DEM.MED.N CLASS-DL.CL RPRO.3.DL.N plant-3SG.M_β-RP_β
 Those were the two (taro) that he had planted. [Caleb, "Matevu"]

- (72) *Kavi iria isisio kou-ro guruguru-pa-e-voi vara*
 Kavi PPRO.3.SG.F grass CLASS-PL.CL gather.RDP-CONT-3SG.F_β-PRES_β PPRO.3.PL.N
kasi-sia
 burn-DEP.SEQ
 Kavi is gathering all of the grass in order to burn it.

³Firchow (1987:47–48) treats classifiers and free pluralizers as a single class, but given that they behave differently with respect to number marking, they must be distinguished. It is likely, however, that classifiers are the diachronic source of the pluralizers, according to a scenario where number marking on commonly occurring classifiers is lost and the classifier comes to have inherent plural semantics.

Some inanimate nouns do double duty as classifiers (§4.2.2). For example, *kovo* “garden” shows the expected pattern of inflection for an inanimate noun, as in (73). However, *kovo* also functions as a classifier for types of gardens (taro, cocoa, etc.), as illustrated by (74).

(73) *Raku tuuke-re-vo sipito uva kovo-ara tori-re-vorao*
 Raku punish-3SG.M_β-IP_β chief and garden-PL.N run-3SG.M_β-NP_β
 The chief punished Raku because he ran away from the gardens.

(74) *kakau kovo-ro pura-pa-i-voi oira-ra moni ou-pa-sia*
 cocoa CLASS-PL.N make-CONT-3PL_β-PRES_α man-PL.N money get-CONT-DEP.SEQ
 Men make cocoa gardens in order to get money.

Classified nouns behave like neuter nouns with respect to subject agreement, as can be seen from (75) and (76), where classified nouns play the role of subject and show zero agreement on the verb. In addition, classified nouns co-occur with the form of the subjunctive mood normally found with neuter subjects (-*pe*), as in (75) (see §5.2.2.7.2).

(75) *kokovara isi opita isi viapau erako-pa-∅-pe*
 unripe CLASS coconut CLASS NEG dry-CONT-3SG.N-SUB
 The unripe coconut isn't dry.

(76) *gaegaere-vira roko-∅-voi opita isi uuko-va=ia*
 drift-ADV go_down-3PL.N-PRES_β coconut CLASS water-SG.F=LOC
 The coconuts are going drifting down the water.

4.2.3 Pronouns

In Rotokas, there are four different pronominal paradigms: personal pronouns (§4.2.3.1), resumptive pronouns (§4.2.3.2), possessive pronouns (§4.2.3.3), and demonstrative pronouns (§4.2.3.4). Each will be described in turn.

4.2.3.1 Personal Pronouns

The most basic and commonly occurring pronouns are the personal pronouns. The personal pronouns are sensitive to person (first, second, third), number (singular, dual, plural), and gender (masculine, feminine, and neuter), as well as clusivity (inclusive vs. exclusive). The full paradigm is provided in Table 4.10.

Table 4.10 provides no segmentation of the personal pronouns since no productive segmentation appears to be possible. For example, the first personal plural inclusive might be analyzed as the second person singular plus the first personal plural exclusive. However, if this were an instance of productive concatenation of morphemes, the vowel of the first syllable (*vi*) should be long (cf. §5.4.1). It is therefore more likely that historically the first person singular plural

Person		Number		
		Singular	Dual	Plural
1	Incl.	<i>ragai</i>	<i>vegei</i>	<i>vigei</i>
	Excl.			<i>igei</i>
2		<i>vii</i>	<i>vei</i>	<i>visii</i>
3	M	<i>rera</i>	<i>vaiterei</i>	<i>voea</i>
	F	<i>oira</i>	<i>vairei</i>	<i>vairo</i>
	N	<i>va</i>	<i>varei</i>	<i>vara</i>

Table 4.10: Personal Pronoun Paradigm

exclusive arose from the fusion of the second person singular and the first person plural exclusive. Comparative data from the other languages in the Rotokas family may shed some light on the diachronic origins of the paradigm. In Konua, for example, the first person plural inclusive personal pronoun *bioga* cannot simply be analyzed as the concatenation of the second person singular and the first person plural exclusive since the second person singular is *biru* or *bira* and the first person plural exclusive is *ioka* (Müller, 1954; Ross, 2001).

The paradigmatic structure for person marking in the pronoun paradigms is somewhat interesting from a typological perspective. Although a clusivity distinction is found in the first personal plural, it is neutralized in the first person dual, as illustrated by (77) and (78). As the Tok Pisin translations provided by consultants underscore, the addressee is included in (77) but excluded in (78), yet the same pronoun, *vegei*, is used in both cases.

(77) *ragai=pa viru ra vegei rutu pau-ve*
 PRO.1.SG=BEN move and PRO.1.DL very sit-1DL
 Move for me and we'll sit down./Yu surik bai **yumi tupela** wantaim sindaun.

(78) *vei rogo rovo-pa-si-ei ikau-oro ra vegei utu-pa-vira*
 PRO.2.PL begin start-CONT-2DL-PRES_α run-DEP.SIM and PRO.1.DL follow-DERIV-ADV
ikau-veare
 run-1DL+NF
 You two start first and the two of us will follow running./Yutupela bai stat ron pastaim na bihain bai **mitupela** i ron.

Table 4.2 uses the analytical scheme employed in Cysouw (2003)'s cross-linguistic survey of paradigmatic structure to represent the Rotokas pronominal system.

According to Cysouw (2003), this type of configuration—where there is “hymophony” (i.e., a neutralization across cells) along the vertical dimension—is fairly uncommon cross-linguistically but is nevertheless attested in the literature. Cysouw (2003:218-219) cites five other languages that show a similar pattern: the Australian language Kuku-Yalnji (Oates and Oates, 1964:7); the Tibeto-Burman language Jiaron (Bauman, 1975:131-132,276); and three

		Group	Restricted Group	
1	<i>ragai</i>	<i>vigei</i>	<i>vegei</i>	1+2(+3)
2	<i>vii</i>	<i>igei</i>		1+3
3	<i>rera / oira / va</i>	<i>visii</i>		2+3
		<i>voea</i>	<i>vaiterei</i>	3+3

Figure 4.2: Paradigmatic Structure of Personal Pronouns

Papuan languages—Tuaripi (Wurm, 1975b:515), Guhu-Samane (Richard, 1975:781), and Korafe (Farr and Farr, 1975:734-735).

Pronouns are invariant in form across grammatical roles (unlike, for example, English pronouns—*I* vs. *me*). This holds true for all of the pronominal paradigms, but can be most easily illustrated with personal pronouns due to their high frequency of occurrence. Therefore, in examples (79) through (86), the pronoun *ragai* “I, me” remains invariant in form despite the fact that it plays varying grammatical roles.

4.2.3.1.1 S

(79) *ragai katokato-to*
 PPRO.1.SG black-SG.M
 I’m a black man.

(80) *ragai kasipu-ra-i*
 PPRO.1.SG angry-1SG_α-PRES_α
 I’m angry.

4.2.3.1.2 A

(81) *ragai vii ita ou-a-voi*
 PPRO.1.SG PPRO.2.SG again get-1SG_β-PRES_β
 Now I’m marrying you. [Firchow and Akoitai (1974:71)]

(82) *ragai vo-siposipo pura-a-voi Tarui*
 PPRO.1.SG SPEC-story make-1SG_β-PRES_β name
 I, Tarui, am telling this story. [Firchow and Akoitai (1974:36)]

4.2.3.1.3 O

(83) *ari eera raga ragai tauva-re-vo*
 but DEM.PROX.3.SG.M only PPRO.1.SG help-3SG.M_β-IP_β
 But only this one helped me. [Firchow and Akoitai (1974:53)]

- (84) *uvare ragai tavi-irao-re-va eera masta*
 because PPRO.1.SG tell-INTEN-3SG.M_β-RP_β DEM.PROX.3.SG.M white_man
 Because he really talked to me. [Firchow and Akoitai (1974:19)]

4.2.3.1.4 Oblique

- (85) *ava-u ragai=pa uukoa-vai ou-sia*
 go-2SG_α PPRO.1.SG=BEN water-INDEF get-DEP.SEQ
 You go get water for me. [Firchow and Akoitai (1974:64)]

- (86) *ragai=re keera-ro-epa oisio uro-u-vere*
 PPRO.1.SG=ALL beckon-3SG.M_α-RP_α COMP come-2SG_α-NF
 He beckoned to me, “Come here”.

4.2.3.2 Resumptive Pronouns

Firchow (1987) recognizes a second pronominal paradigm, whose members he labels “relative pronouns”. The full paradigm is provided below in Table 4.11.

Person		Number		
		Singular	Dual	Plural
1	Incl.	<i>ragao</i>	<i>vegoa</i>	<i>vigoa</i>
	Excl.			<i>igoa</i>
2		<i>vigoa</i>	<i>veigoa</i>	<i>visiigoa</i>
3	M	<i>ira</i>	<i>aiterea</i>	<i>oea</i>
	F	<i>iria</i>	<i>airea</i>	<i>airoa</i>
	N	<i>oa</i>	<i>oarea</i>	<i>oara</i>

Table 4.11: Resumptive Pronouns

Firchow (1987)’s characterization of these pronouns as “relative” is based on the fact that they are used to form relative clauses, as illustrated in (87) and (88).

- (87) *Aita=ia tou-pa-i urui-a oa vaisi-pa-i Kuusi*
 Aita=LOC be-CONT-PRES_α village-SG.N RPRO.3.SG.N call-CONT-PRES_α Kuusi
 In Aita there’s a village that they call Kuusi. [= (55)]

- (88) *Gara uuko-va vaisi-aro iria tou-pa-i-veira eisi Sisisivi=ia*
 Gara river-SG.F name-POSS PPRO.3.SG.F be-CONT-3PL_β-HAB LOC Sisisivi=LOC
ruvara=ia
 near=LOC
 Gara is the name of the river that is close to Sisivi.

These pronouns agree in person, number, and gender with the head noun: *oa* agrees with the third person singular neuter noun *uruia* “village” in (87) and *iria* agrees with the third person singular feminine noun *uukova* “river” in (88).

Given that this pronominal paradigm includes “local” persons (i.e., first and second person), their characterization as “relative pronouns” is questionable, and the term “resumptive pronoun” will be used instead. The resumptive function of these pronouns is illustrated in (89) and (90). In these examples, a topic is first established and subsequent references to it are then made using a resumptive pronoun.

- (89) *kapokarito ira epao vavo Rarova ira iava vavurupa-ara*
 tree RPRO.3.SG.M exist there Rarova RPRO.3.SG.M POST root-PL.N
ou-a-vorao
 get-1SG_β-NP_β
 The tree that is in Rarova, I got roots from it.

- (90) *utave-va Kiki oira-aro iria kavu-re-va eisi*
 shell-SG.F Kiki RPRO.3.SG.F-POSS RPRO.3.SG.F leave_behind-3SG.M_β-RP_β LOC
Ruruvu=ia iria oisioa vuvure-pa-re-ve
 Ruruvu=LOC RPRO.3.SG.F always blow-CONT-3SG.M_β-SUB
 Kiki’s shell, the one he would always blow, he left it in Ruruvu.

Local person (i.e., first and second person) resumptive pronouns are fairly rare. They are illustrated in (91) and (92).

- (91) *viovoko riro vatasioko-to vii vigoa viapau oisio katai*
 teenager big vagabond-SG.M PPRO.2.SG RPRO.2.SG NEG COMP one
urui-va=ia ora-tou-pie-pa-u-veira
 village-SG.F=LOC RR-be-CAUS-CONT-2SG_α-HAB
 Boy, you’re a vagabond, you don’t stay put in one village.

- (92) *riro kavikaviru-irara visii visigoa atari kare kaviru-ta-vora*
 big steal.RDP-HUM.PL PPRO.2.PL RPRO.2.PL fish FP steal-2PL-DP_β
 You’re big thieves, you stole the fish.

Topicalized nouns occur at the left-most boundary of the sentence and subsequent reference to them takes the form of resumptive pronouns that agree with them in person, number, and gender. These resumptive pronouns occur in situ, as illustrated in (93) through (96), which illustrate topicalized nouns serving a variety of grammatical roles.

S

- (93) *sigo-a vii va-aro oa asikauru-era*
 knife-SG.N PRO.2.SG PRO.3.SG.N-POSS RPRO.3.SG.N rust-DP_α
 Your knife, it rusted.

A

- (94) *kauo-va iria upiriko kovo aruo-pa-e-voi*
 aunt-SG.F PRO.3.SG.F sweet_potato garden weed-CONT-3SG.F_β-PRES_β
 Your auntie, she is weeding the sweet potato garden.

O

- (95) *Resi iria agoagoto-raga-pa-re-vo Voipiri*
 Resi RPRO.3.SG.F flatter.RDP-ONLY-CONT-3SG.M_β-IP_β Voipiri
 As for Resi, Voipiri is flattering him.

Oblique

- (96) *koeta iria=ia koora ritaa-pa-a-veira ora aue tapo kokio*
 bow RPRO.3.SG.F=LOC possum shot-CONT-3PL_α-HAB and CONN also bird
 With a bow they shoot possums and birds.

4.2.3.3 Possessive Pronouns

Possessive pronouns are those that substitute for possessors. The full paradigm for the possessive pronouns is provided in Table 4.12.⁴

Person		Singular	Dual	Plural
1	Incl.			<i>oavi</i>
	Excl.	<i>oaa</i>	<i>oave</i>	<i>oaio</i>
2		<i>oara</i>	<i>oaesi</i>	<i>oavisi</i>
3	M	<i>oaro</i>	<i>oaesi</i>	<i>oaive</i>
	F	<i>oo</i>	<i>oaere</i>	

Table 4.12: Possessive Pronouns

Unlike other pronominal paradigms, the possessive pronouns lack a category for the third person neuter (Firchow, 1987). When the possessor of a noun is neuter, the only option for marking possession is the possessive suffix *-aro*, which occurs on the possessed noun (see §5.1.2.3), as illustrated in (97) and (98).

- (97) *rasi-a vaisi-aro oa vaisi-pa-i oisio Aperaipa*
 ground-SG.N name-POSS RPRO.3.SG.N call-CONT-3PL_β COMP Aperaipa
 The name of the place, they call it Aperaipa.

⁴Firchow (1987) provides the form *oae* for the third person plural.

- (98) *kakau-ara vavata-aro ate-pa-i-vo oiso ra vara=IA vori*
 cocoa-PL.N weight-POSS weigh-CONT-3PL_β-IP_β COMP and PRO.3.PL.N-ABL money
ou-a-ve
 get-3PL_α-SUB
 They weighed the cocoa so that they could get money from them.

Possessive pronouns agree in person, number, and gender with their possessors, and follow them, as illustrated in (99) through (101).

- (99) *kepa oaive eva oa vura-pa-ri*
 house PPRO.3.PL DEM.3.SG.N RPRO.3.SG.N look_at-CONT-2SG_β
 That's their house that you're looking at.

- (100) *Joseph ira kovo-pa-ara oaro guru-re-voi*
 Joseph RPRO.3.SG.M work-DERIV-PL.N PPRO.3.SG.M gather-3SG.M_β-PRES_β
 Joseph is gathering all of his tools.

- (101) *kepa oaio eva oa iare ava-pa-vi-ei*
 house PPRO.1.PL.EXCL DEM.3.SG.N RPRO.3.SG.N POST go-CONT-1DL-PRES_α
 That's our house which we're going into.

4.2.3.4 Demonstratives

Demonstrative pronouns are deictic words that indicate which entities a speaker refers to, and distinguishes these entities from others (Anderson and Keenan, 1985). The demonstrative pronouns in Rotokas encode three levels of distance: proximal, medial, and distal. The range of spatial deixis associated with these three categories is characterized in Firchow (1987:43) as follows: “demonstrative pronouns are sub-classified according to the ‘position’ of the referent in relation to the speaker, i.e., referent near at hand, referent at a distance, and referent removed or out of sight”. The full paradigm is given in Table 4.13.

These forms may appear to be amenable to further segmentation, along the lines shown in Table 4.14, since the proximal forms consistently end with *o*, the medial forms consistently begin with *e*, and the distal forms consistently end with *ri*.

If the common elements for each level of distance are treated as affixes (proximal, *-o*; medial, *e-*; distal, *-ri*), we would expect their hosts to be consistent in form across the levels of distance. However, the base forms obtained by segmenting out the hypothetical affixes are not internally consistent. The third person singular masculine and feminine are irregular for all levels of distance. There is also some irregularity in the masculine and feminine dual proximal as well as the medial third person plural. There is also no consistent correspondence between the base forms and any other pronominal paradigm. For example, the third person singular neuter has a consistent base form across the three levels of distance (*va*), which corresponds to the third person singular of the personal pronoun paradigm. But the same cannot be said

Distance	Gender	Number		
		Singular	Dual	Plural
Proximal	M	<i>roo</i>	<i>vaitereo</i>	<i>voeao</i>
	F	<i>oo</i>	<i>vaireo</i>	<i>vairoo</i>
	N	<i>vao</i>	<i>vareo</i>	<i>varao</i>
Medial	M	<i>eera</i>	<i>evaiterei</i>	<i>evoeao</i>
	F	<i>eira</i>	<i>evairei</i>	<i>evairo</i>
	N	<i>eva/evo</i>	<i>evarei</i>	<i>evara</i>
Distal	M	<i>roari</i>	<i>vaitereiri</i>	<i>voeari</i>
	F	<i>oari</i>	<i>vaireiri</i>	<i>vairori</i>
	N	<i>vari</i>	<i>vareiri</i>	<i>varari</i>

Table 4.13: Demonstrative Pronoun Paradigm

Distance	Gender	Number			
		Singular	Dual	Plural	
Proximal	M	<i>ro</i>	<i>vaitere</i>	<i>voea</i>	
	F	<i>o</i>	<i>vaire</i>	<i>vairo</i>	<i>-o</i>
	N	<i>va</i>	<i>varei</i>	<i>vara</i>	
Medial	M	<i>era</i>	<i>vaiterei</i>	<i>voeao</i>	
	F	<i>e-</i> <i>ira</i>	<i>vairei</i>	<i>vairo</i>	
	N	<i>va</i>	<i>varei</i>	<i>vara</i>	
Distal	M	<i>roa</i>	<i>vaiterei</i>	<i>voea</i>	
	F	<i>oa</i>	<i>vairei</i>	<i>vairo</i>	<i>-ri</i>
	N	<i>va</i>	<i>varei</i>	<i>vara</i>	

Table 4.14: Hypothetical Segmentation of Demonstrative Pronoun Paradigm

for the third person singular masculine or feminine. The third person singular feminine distal appears to be based on the third person singular neuter resumptive pronoun while none of the third person masculine singular base forms correspond to any other pronominal paradigm. The demonstratives will therefore be treated as unanalyzed forms in all interlinear glossing.

Demonstratives can occur in isolation as pro-forms, as illustrated for the medial third person masculine in (102) and the medial third person feminine in (103).

(102) *aure ari eera* *ava-ro-e* *vokipaua rutu*
 yes but DEM.MED.SG.M go-3SG.M_α-IP_α morning very
 Yes, but that one went in the early morning.

(103) *eira* *veu-pa-o-i* *uvare oira=re*
 DEM.MED.SG.F be.angry-CONT-3SG.F_α-PRES_α because PPRO.3.SG.F=ALL

reo-a-e

speak-3PL_α-IP_α

That one is angry because (of the way) they talked to her.

Demonstratives also co-occur with nouns, serving as modifiers, as in (104), where the medial third person masculine demonstrative *eera* occurs with the masculine noun *oirato* “man”, or (105), where the medial third person feminine demonstrative *eira* occurs with the feminine noun *aiopava* “flashlight”.

- (104) *eera* *oira-to* *riro kaviru-to*
DEM.MED.SG.M man-SG.M big steal-SG.M
This man is a big thief.

- (105) *Savuko oira-aro* *eira* *aopa-va*
Savuko PPRO.3.SG.F-POSS DEM.MED.SG.F flashlight-SG.F
That flashlight is Savuko’s.

4.2.4 Verbs

The defining feature of verbs is their ability to inflect for person and tense/aspect/mood. For example, the verb *virivuri* “move back and forth” in (106) shows third person subject agreement (*-ro*) and is marked for the remote past (*-epa*).⁵

- (106) *uva ora-viruviru-raga-pa-ro-epa* *ragai* *uriri-pa-oro*
and RR-move.RDP-ONLY-CONT-3SG.M_α-RP_α PPRO.1.SG frighten-CONT-DEP.SIM
He just moved himself back and forth frightening me.

Verbs are an open category in Rotokas, judging from the increasing amount of borrowing from Tok Pisin that occurs in the language. It seems, however, that the rate of verb borrowing in Rotokas lags behind that of noun borrowing. Table 4.15 lists a few of the more commonly heard Rotokas verbs that have been borrowed into Rotokas from Tok Pisin.

The use of borrowed verbs is illustrated in (107) and (108).

- (107) *viapau ragai* *rootu-pa-ra-era*
NEG PPRO.1.SG attend_church-CONT-1SG_α-DP_α
I wasn’t going to church in the past.

- (108) *oire ora-agesi-pie-a-i* *voa=va* *sikeari-a-epa*
okay RR-smile-CAUS-3PL_α-PRES_α here=ABL shake_hands-3PL_α-RP_α
Okay, they’re smiling at each other and shook hands. [RR-Ata:49]

⁵Although both independent and dependent verbs can occur with the continuous suffix *-pa*, it is an equivocal diagnostic for verbhood, since a homophonous suffix occurs on a number of other parts of speech (e.g., derived nouns and adverbs).

Rotokas Verb	Tok Pisin Source
<i>iusi</i> “use”	<i>yusim</i>
<i>kiria</i> “clarify”	<i>kiliaim</i>
<i>pereri</i> “befriend”	<i>peren</i>
<i>rootu</i> “worship”	<i>lotu</i>
<i>sekari</i> “shake hands”	<i>sekhan</i>
<i>siku</i> “attend school”	<i>skul</i>

Table 4.15: Rotokas Verbs Borrowed from Tok Pisin

Verbal subject agreement and tense-marking in Rotokas can be divided into two formally distinct classes, which will be labelled α and β in order to avoid prejudging the question of what motivates the distinction, and verbs can be classified according to which form of person agreement they take. For example, the verb *uusi* “sleep” is α whereas the verb *upo* “hit” is β . The contrast is illustrated in (109) and (110), where the two verbs show distinct patterns of verbal inflections despite the fact that they both have third person plural subjects and occur in the present tense indicative.

(109) *kakae vure uusi-pa-a-i koke-va rero-aro*
 child FP sleep-CONT-3PL α -PRES α rain-SG.F underneath
 The children were sleeping under the rain.

(110) *uva vii upo-pa-i-voi oira=pa eira*
 and PPRO.2.SG hit-CONT-3PL β -PRES β PPRO.3.SG.F=BEN DEM.MED.SG.F
riako-va
 woman-SG.F
 They are hitting you because of the woman.

Although some verbs are ambivalent (see §9.1.1), most verbs belong uniquely to one of the two classes, and can therefore be described as α or β . This assignment is systematically affected by valency-changing derivations (see Chapter 9). Since this topic is the chief concern of this thesis and is described in considerable detail in the second part of the thesis, it will not be discussed in detail here. For a description of verbal morphology, and an inventory of forms, see §5.2.

4.2.5 Adjectives

There has been a great deal of typological interest in the universality of adjectives (Dixon, 1982, 2004). In typological treatments of adjectives, a distinction is usually drawn between two functions of adjectives: attributive and predicative (Stassen, 1997). Attributive adjectives serve to modify the heads of noun phrases whereas predicative adjectives serve as the predicates of

clauses. For example, in Rotokas, the stem *riro* “big” can function either attributively, as in (111), where it modifies the noun *aveke* “stone”, or predicatively, as in (112), where it is the main predicate and occurs with person/number/gender and tense/aspect/mood marking.

(111) *aite-to riro-va aveke kae-pie-re-vo aruvea*
 father-SG.M big-SG.F stone lift-CAUS-3SG.M_β-IP_β yesterday
 Dad lifted a large stone yesterday.

(112) *oira-ra gorupasi-vira riro-pa-a-i vovokio=ia*
 man-HUM.PL strong-ADV big-CONT-3PL_α-PRES_α today=LOC
 People grow up strong today.

Sentences such as (111) and (112) provide no good evidence of a distinct grammatical category of adjectives, since *rirova* “big” and *riroparoi* “be big” can simply be analyzed as noun and verb, respectively. Such an analysis would be more parsimonious, since it does not require the postulation of any new word classes, and places the burden of explanation on a mapping between root and/or stem classes on the one hand and word classes on the other. This is already an issue for Rotokas due to the existence stems such as *atari* “fish”, which indifferently function as noun or verb (i.e., without recourse to explicit derivational morphology). Although there is little evidence of a distinct grammatical category of adjective in Rotokas, it is worthwhile to examine the way in which predication and attribution are expressed grammatically in Rotokas.

4.2.5.1 Predication

Stassen (1997:13) observes that there are four classes of predication, listed in (113), which languages carve up differently.

- (113) a. **Event Predicate** *Joanna rides.*
 b. **Property or quality predicate** *Joanna is strong.*
 c. **Class predicate** *Joanna is a fine horse-woman.*
 d. **Locational predicate** *Joanna is in the stable.*

In Rotokas, event, property or quality, and locational predicates take the form of verbs or verb phrases, as illustrated in (114) through (116).

4.2.5.1.1 Event Predicate

(114) *ragai roru-pa-oro kauo-pa-ra-i*
 PPRO.1.SG be.happy-CONT-DEP.SIM jump-CONT-1SG_α-PRES_α
 I am jumping with joy.

4.2.5.1.2 Property or Quality Predicate

- (115) *riro goru-pa-i rakari-a*
big strong-CONT-PRES_α skin-SG.N
The skin is really strong.

4.2.5.1.3 Locational Predicate

- (116) *oovato ira voo tou-pa-re-veira Tutupaio kaki-a siovara=ia*
red_earth RPRO.3.SG.M here be-CONT-3SG.M_β-HAB Tutupaio cave-SG.N inside=LOC
Red earth is found inside a cave in Tutupaio.

Class predicates, on the other hand, take the form of nouns, as in (117), where the subject occurs in its usual position, or (118), where the subject is right-dislocated (see §6.2.1). In both cases, the class predicate is a noun and the subject and predicate are simply juxtaposed—i.e., there is no copula.

- (117) *Raviata vearo-pie koie ragui-ro toki-pa-to*
Raviata good-CAUS pig CL-PL.N care_for-DERIV-SG.M
Raviata is a good animal caretaker.

- (118) *gavaure-a vao voki-a*
nice-SG.N DEM.PROX.SG.N day-SG.N
Today is a nice day.

4.2.5.2 Attribution

The situation is less straightforward where attribution is concerned. There is a formal distinction between two classes of stems in the case of attribution: those that can directly function attributively and those that require the suffix *-pa* to do so. Bivalent verbs (see Chapter 8) systematically take the suffix *-pa* when they modify nouns, as illustrated in (119) and (120).

- (119) *kokotu takura-aro sipo-sia ava-ro-e Wesli eisi uu-pa tapi*
chicken egg-POSS send-DEP.SEQ go-3SG.M_α-IP_α Wesley LOC meet-DERIV place
Wesli went to sell chicken eggs at market.

- (120) *Rari kotokoto ou-sia ava-ro-e eisi Buka aio kitu-pa kepa iare*
Rari cargo get-DEP.SEQ go-3SG.M_α-IP_α LOC Buka food store-DERIV house POST
Rari went to the store (lit., food-storing house) in Buka in order to get cargo.

Monovalent verbs are split in this respect. For example, the stem *uteo* “cold” directly modifies the noun *tapi* “place” in (121) and *vuuta* “time, space” in (122).

(121) *Sisivi-a riro uteo tapi rutu*
 Sisivia big cold place very
 Sisivi is a very cold place.

(122) *o-vuuta-a eva riro uteo vuuta*
 SPEC-time-SUB DEM.MED.SG.N big cold time
 It was winter. (Lit., That time was a very cold time.) [John 10:23]

It also functions predicatively as a verb stems, as in (123), where it describes a property of the environment (being cold), and (124), where it describes the feelings of a human agent (feeling cold).

(123) *kasirao-vira uusi-ra-e vokiario, viapau riro-vira uteo-pa-e*
 hot-ADV sleep-1SG_α-IP_α night NEG big-ADV cold-CONT-IP_α
 Last night it was really hot sleeping because it wasn't very cold.

(124) *Vivura ora-raku-ro-i varo-a=ia uvare riro-vira*
 Vivura RR-cover-3SG.M_α-PRES_α clothing-SG.N=LOC because big-ADV
uteo-pa-ro-i, uvare koke-va=ia kare-ro-e eisi=va
 cold-CONT-3SG.M_α-PRES_α because rain-SG.F=LOC return-3SG.M_α-PRES_α LOC=ABL
kovo-a
 garden-SG.N
 Vivura covered up with a jacket because he was really cold because he returned from the garden in the rain.

However, the stem *aire* “new” requires the suffix *-pa* in order to modify a noun, as in (125), where it modifies the noun *kepa* “house”, or (126), where it modifies the noun *kovovai* “some garden”. It does not appear to be able to function as a verbal predicate (at least no examples of such usage are attested anywhere in the materials available to the author).

(125) *Kokora ira aire-pa kepa pau-pa-re*
 Kokora PRO.3.SG.M new-DERIV house build-CONT-3SG.M_β
 Kokora is building a new house.

(126) *vego-a toe-pa-i oira-ra aire-pa kovo-vai=re*
 bush-SG.N cut-CONT-3PL_β man-PL.N new-DERIV garden-INDEF=ALL
 The people are cutting the bush for the new garden.

4.2.6 Adverbs

Adverbs represent a large and somewhat disparate class of elements in Rotokas that serve as nonsubcategorized modifiers (adjuncts). As Butt et al. (1999:133) observe, “Adverbs vary so

considerably with regard to syntactic distribution and semantic content that the grammatical category of adverb is often used as a kind of catch-all category for lexical items that one is at a loss to define.”

The Rotokas lexicon possesses a large number of adverbs due to the productivity of the suffix *-vira*, which derives adverbs from other parts of speech. Many different types of adverbs can be derived with *-vira*: sentential, as in (127); directional, as in (128); degree, as in (129); manner, as in (130); and time, as in (131).

Sentential

- (127) *sirao-vira rutu uvare aako upo-ri-voi*
 pity-ADV very because mother hit-2SG_β-PRES_β
 Sadly, you killed my mother. [Firchow and Akoitai (1974:80)]

Directional

- (128) *iipa-vira iipa-u voo=re*
 ascend-ADV ascend-2SG_α here=ALL
 You come up here.

Degree

- (129) *vioro varavara-vira tou-pa-i*
 ripe near-ADV be-CONT-PRES_β
 It is nearly ripe.

Manner

- (130) *aavu-va gapu-vira sisiu-pa-o-i eisi Ivitu*
 grandparent-SG.M naked-ADV bathe-CONT-3SG.F_α-PRES_α LOC Ivitu
 Grandmother is bathing naked in Ivitu (a river near the village of Togarao).

Temporal

- (131) *voki-pa-vira ava-pa-ra-i Togarao iare*
 day-DERIV-ADV go-CONT-1SG_α-PRES_α village_name POST
 I'm going to Togarao tomorrow.

There are also interrogative adverbs, as illustrated in (132).

- (132) *aavio-pa-vira ora-vasike-pa-u eisi-re Togarao*
 when-DERIV-ADV RR-leave-CONT-2SG_α LOC=ALL Togarao
 When are you going to Togarao?

Time Word	Gloss
<i>tuariri</i>	“long ago”
<i>aruvea</i>	“yesterday”
<i>vokipaua</i>	“morning”
<i>vokipakou</i>	“early morning”
<i>vokiarovi</i>	“afternoon”
<i>vokiario</i>	“night”
<i>ovoiaro</i>	“afternoon”
<i>ovoiarovi</i>	“late afternoon”

Table 4.16: Rotokas Time Words

There are a number of words that do not take the suffix *-vira* but could nevertheless be classified as adverbs to the extent that they serve as adjunct modifiers. In other words, these words play an adverbial role but lack any overt morphology indicating their part of speech (i.e., the suffix *-vira*). A number of these terms are listed in Table 4.16.

Like adverbs derived with *-vira*, these time words are flexible in their ordering, although they generally occur at the sentence periphery—i.e., at the beginning of sentences, as illustrated by (133), or at the end, as in (134).

- (133) *aruvea rokoroko kare keke-io-vo*
yesterday frog FP look.at-1PL.EXCL-IP_β
Yesterday we looked at frogs.

- (134) *Raratuiri ragai-re kasipu-ro-e aruvea*
name PPRO.1.SG=ALL angry-3SG.M_α-IP_α yesterday
Raratuiri was angry with me yesterday.

Note that *aruvea* “yesterday” occurs bare in (133) and (134); it cannot in fact take oblique marking. Some time words can occur with peripheral marking. For example, *vovokio* “today” occurs with the oblique marker =*ia* in (136), and would therefore be analyzed as a noun rather than as an adverb.

- (135) *riro-a kopii-a tou-pa-i-voi vovokio=ia*
big-SG.N die-SG.N be-CONT-3PL_β-PRES_β today=ENC
Serious illness exists today.

- (136) *vovokio=ia oira-ra uu-pa-a-i ora-reo-sia*
today=LOC man-HUM.PL meet-CONT-3PL_α-PRES_α RR-talk-DEP.SIM
Today people are meeting to talk.

There are two other words that also serve as adjunct modifiers to verbs and can therefore be characterized as adverbs: *rutu* “very”, illustrated in (137), and *riro* “big”, illustrated in (138).

(137) *Ruruvu urui arakasi-ei rutu*
 Ruruvu village empty-PRES_α very
 Ruruvu village is truly empty.

(138) *itoo-va riro vavata-pa-o-i*
 banana-SG.F big heavy-CONT-3SG.F_α-PRES_α
 The bananas are very heavy.

These two elements also serve to modify other adverbs: *riro* “big” precedes the adverb it modifies in (139) and *rutu* “very” follows the adverb it modifies in (140). The two can simultaneously modify a single adverb, as in (141).

(139) *riro kaekae-vira pau-ra-e uva asisoe-ra-i*
 big long-ADV sit-1SG_α-IP_α and numb-1SG_α-PRES_α
 I sat down for a long time and now I’m numb.

(140) *ovoio-vira rutu kare-ra-e atoia=re uvare ragai kavu-i-vo*
 last-ADV very return-1SG_α-IP_α village=ALL because PPRO.1.SG leave-3PL_β-IP_β
 I returned to the village last because they left me.

(141) *Asiravi riro-va riako-va iria riro patura-vira rutu*
 Asiravi big-SG.F woman-SG.F PPRO.3.SG.F big fat-ADV very
tou-pa-e-veira
 be-CONT-3SG.F_β-HAB
 Asiravi is a big woman who is really fat.

The modifier *rutu* provide some evidence for categorizing time words with adverbs, since it occurs with adverbs, as shown above, as well as time words, as can be seen from (142) and (143).

(142) *vokiario rutu pou-io-viro eisi=va vara-vira*
 night very arrive-1PL.EXCL-COMPL LOC=ABL descend-ADV
 Late at night we arrived from above.

(143) *aure, ari eera ava-ro-e vokipaua rutu*
 yes but DEM.MED.SG.M go-3SG.M_α-IP_α morning very
 Yes, but he went in the morning.

4.2.7 Postpositions

There is a class of postnominal modifiers which Firchow (1987) labels “relator particles” due to the fact that they are used to mark the semantic relation of the nominal with which they occur. These modifiers are analyzed here as postpositions, which can be divided into two subclasses by phonological weight: monosyllabic, illustrated in (144) and (145), and polysyllabic, illustrated in (146) and (147). Due to phonological constraints on stress assignment that require the minimal phonological word to be a foot (see §3.2.2), the monosyllabic postpositions behave as clitics while the multisyllabic postpositions are able to act as words.

Monosyllabic

- (144) *Vago aapaapau-vira ava-ro-era eisi=re Kieta*
 Vago visit.RDP-ADV go-3SG.M_α-DP_α LOC=ALL Kieta
 Vago went visiting to Kieta.

- (145) *Eravaa iare kakae vure=va iipa-ro-era Paravi evoa voka-sia*
 Mt.Balbi POST child FP=ABL go.up-3SG.M_α-DP_α Palavi there walk-DEP.SEQ
 Palavi went on top of Mt. Balbi with the children and they’re going walking.

Polysyllabic

- (146) *ava-pa-ra-i ragai vo-kepa-aro iare*
 go-CONT-1SG_α-PRES_α PPRO.1.SG SPEC-house-POSS POST
 I am going home (literally: to my house).

- (147) *uva uusi-ro-epa ovi-toa tapo urua=ia*
 so sleep-3SG.M_α-RP_α son-SG.M also bed=LOC
 So he slept with the son in bed. [Firchow and Akoitai (1974:50)]

The full list of these forms is provided below in Table 4.17.⁶

The glosses provided in Table 4.17 are for the most typical meaning of a particular form and are therefore not exhaustive. Many of these forms are polysemous and mark more than one semantic role, as shown in Figure 4.3, making it difficult to find a satisfactory gloss in some cases.

Two of the polysyllabic postpositions appear to be further segmentable: *iare* as =*ia* plus =*re* and *iava* as =*ia* and =*va*. Given that the =*ia* is a generic locative, the forms =*iare* and =*iava* appear to involve further semantic specification in terms of path (source with =*va* or goal with =*re*). The postpositions =*va* and =*re* differ from their polysyllabic counterparts in at least two respects. First, there are a number of contexts where a polysyllabic form is incompatible with

⁶According to Firchow (1973), there is also a postposition *kerete* “inside out/reverse”, but it was not recognized by native-speaker consultants in the field and no examples of it have appeared in the materials available to the author. It has therefore been excluded from Table 4.17.

Type	Postposition	Gloss
Monosyllabic	<i>re</i>	“to”
	<i>pa</i>	“for”
	<i>va</i>	“from”
	<i>ia</i>	“at”
Polysyllabic	<i>arova</i>	“without”
	<i>iare</i>	“towards”
	<i>iava</i>	“from, about”
	<i>sirova</i>	“behind”
	<i>tapo(ro)</i>	“also, too, with”

Table 4.17: Rotokas Postpositions

its monosyllabic counterpart (e.g., the inalienable possession construction discussed in §10.2.2). Second, verb roots that take an oblique argument select for a monosyllabic postposition but not for polysyllabic ones (e.g., *kuara* “yell at” selects the monosyllabic postposition =*va*). Finally, the monosyllabic and polysyllabic forms differ with respect to allophonic variation. The third person singular normally takes the form *-to* when it occurs without additional morphology, but it obligatorily takes the form *-toa* when it occurs with a suffix or enclitic, as in (148) to (149).

(148) *oira-toa-re sirava-pa-ro-i rakoru-to*
 man-SG.M=ALL hiss-CONT-3SG.M_α-PRES_α snake-SG.M
 The snake is hissing at the man.

(149) *tavaa-toa=ia varo-a turu-pa-e Salome*
 needle-SG.M=LOC clothes-SG.N sew-CONT-3SG.F_β Salome
 Salome is sewing up clothing with a needle.

Unlike the locative enclitic =*ia*, the postpositions *iare* and *iava* do not obligatorily co-occur with the form *toa*. In some cases, postpositions occur with the form *to*, as in (150). In other cases, postpositions occur with the form *toa*, as in (151).

(150) *kakae-to iava girigirio kapua-o-e*
 child-SG.M POST grill sore-3SG.F_α-RP_α
 The boy’s armpits had sores.

(151) *tuuvuu-ra-i koko-toa iava uvare ora-tugururu-a-e*
 swell.up-1SG_α-PRES_α leg-SG.M POST because RR-swell-1SG_α-IP_α
 My leg swole up because I bumped it.

The characterization of the monosyllabic forms as particles is questionable, given that the term particle is usually used for words and these forms show many of the properties typically associated with clitics or affixes (Zwicky and Pullum, 1983; Zwicky, 1985).

As Zwicky (1985) observes, “if an element is bound, and especially if it cannot occur in complete isolation, it should be a clitic”. The postpositions in Rotokas are bound morphemes—i.e., they do not occur in isolation but always appear attached to another element—and by this criterion are more clitic-like than particle-like. They are also the final element in a noun phrase, as can be seen in (152) and (153), where enclitics occur rightmost relative to other morphemes (the possessive marker in (152) and the indefinite marker in (153)).

(152) *ragai vato-pa-a-veira ragai taataa-irara-aro=pa*
 PRO.1.SG respect-CONT-1SG_α-HAB PPRO.1.SG brother-HUM.PL-POSS=BEN
 I always respect my brothers.

(153) *Paoro opita-ara-vai=va urio-u-vere*
 P. coconut-PL.N-INDEF=COM come-2SG_α-NF
 Paoro, you will come with some coconuts.

Another commonly-cited characteristic of particles is their ability to occur with full phrases—i.e., to occur at the boundary of a phrase rather than on the head noun. As Zwicky (1985) observes, clitics are in this respect somewhat indeterminate between affixes and words: “Inflectional affixes combine with stems or full words, whereas words combine with other words or with phrases.” In Rotokas, case markers combine with phrases, as can be seen in (154) and (155).

(154) *kokeva voki-ara rutu-ia kove-pa-o-i*
 rain day-PL.N very=LOC fall-CONT-3SG.F_α-PRES_α
 It rains every day.

(155) *Isivairi koorato kapara-re-voi eto kasi raga=ia*
 Isivairi possum roast-3SG.M_β-PRES_β fire only=LOC
 Isivairi is cooking possum by fire alone.

The analysis of the role markers becomes less clearcut where morphological simplicity is concerned. Zwicky and Pullum (1983) observes that “a morphologically complex item is probably an independent word”. By this criterion, a few of the polysyllabic relators would qualify as words, but not the monosyllabic relators.

The analysis adopted here treats both monosyllabic and polysyllabic relators as members of a single class and attributes differences between them to phonological considerations. Since there appears to be a foot minimality requirement for phonological words in Rotokas, the cliticization of monosyllabic relators essentially falls out on independent grounds (see §3.2.2).

4.2.8 Interrogatives

Interrogatives are listed here as a distinct word class because they have a number of properties which distinguish them from the word classes to which they might otherwise be assigned (e.g., pronoun). Their most salient property is their restriction to clause-initial position, as illustrated for the interrogatives *eake* “what” and *apeisi* “how”.

(156) *irou-toa vii vaisi-aro*
 who-SG.M PPRO.2.SG name-POSS
 What is your name?

(157) *Kepi, eake=re ragai=va paupau-pa-u*
 Kepi what=ALL PRO.1.SG=COM race-CONT-2SG_α
 Kepi, why are you racing with me?

The full list of interrogatives is provided in Table 4.18, where they are divided into two groups, according to their ability to stand alone as question words.

Type	Interrogative	Gloss
Free-Standing	<i>apeisi</i>	“how”
	<i>ovu</i>	“where”
	<i>irou</i>	“who”
	<i>eake</i>	“what”
Modifier	<i>aa</i>	“which”
	<i>arorea</i>	“which (person)”
	<i>ovirovu</i>	“how many”
	<i>avoviroa</i>	“how much”
	<i>roroa</i>	“how much”

Table 4.18: Interrogatives in Rotokas

The first group of interrogatives stands alone as replacements for questioned elements while the second group co-occurs either with other interrogatives or with nouns, as illustrated in (158) and (159).

(158) *apeisi roro-a moni-a vii ruvara=ia tou-pa-i*
 how much-SG.N money-SG.N PPRO.2.SG near=LOC be-CONT-3PL_β
 How much money do you have on you?

(159) *avoviroa o-ua-vu varo ua voro-aro*
 avoviroa SPEC-CLASS-ALT clothing CLASS price-POSS
 How much is the price of one article of clothing?

Interrogatives occur with some of the same morphology as nouns, as illustrated in (160), where an interrogative occurs with the diminutive suffix, or (161) through (162), where interrogatives occur with postpositions.

(160) *ra apeisi-vai tarai-a-ve*
 and how-INDEF know-3PL_α-SUB
 And they probably didn't understand how. [Firchow and Akoitai (1974:23)]

(161) *eake=pa vii upo-re-vo*
 what=BEN PRO.2.SG hit-3SG.M_β-IP_β
 Why did he hit you?

(162) *ovaiaro-vi avue ovu=re ava-pa-u*
 afternoon-DIM in-law where=ALL go-CONT-2SG_α
 Afternoon, in-law, where are you going?

The occurrence of interrogatives with morphology normally associated with nouns suggests that interrogatives are nouns, but they show behavior that makes them at least a distinct subclass. For example, the interrogative *irou* “who” replaces nouns referring to human beings when they are questioned, but it does not behave like a typical human noun (Class 1—cf. §4.2.1.1), given that it can behave as a masculine, feminine, or neuter noun, as illustrated in (163) through (165). It takes the masculine singular suffix in (163), the feminine singular in (164), and no suffixes in (165) (where it also shows the zero agreement associated with neuter subjects).

(163) *irou-toa eera*
 who-SG.M DEM.MED.SG.M
 Who is he?

(164) *irou-va eira*
 who-SG.M DEM.MED.SG.M
 Who is she?

(165) *irou ragai oira-aro torara ou-vo*
 who PPRO.1.SG PPRO.3.SG.M-POSS axe get-IP_β
 Who took my axe?

4.2.9 Conjoiners

The final word class is a negatively-defined residual class which consists of what—for lack of a better term—could be labelled “particles” (Zwicky, 1985). These particles are for the most part monomorphemic (with one possible exception discussed below). The words that fall into this category are listed in Table 4.19.

Note that two of the forms in Table 4.19 can be analyzed as a derived forms based on the particle *uva*: *uvare* (*uva=re*) and *uvava* (*uva=va*).

Particle	Gloss	Function
<i>ari</i>	but	Concession
<i>oisio</i>	that	Complementizer
<i>osia</i>	as	Comparative
<i>ora</i>	and	Conjunction
<i>ovusia</i>	while	Temporal
<i>ra</i>	and	Complementizer
<i>teapi</i>	lest	Apprehensional
<i>uva</i>	so	Conjunction
<i>uvare</i>	because	Causal
<i>uvava</i>	because of/from	Conjunction
<i>vosia</i>	if/when	Conditional

Table 4.19: Particles

- (166) *Rarasori ragai va-aro ovoi-pie-revo uvare*
 Robinson PRO.1.SG 3.SG.N-POSS enough-CAUS-3SG.M_βrp.b **because**
vura-pa-va vori-re-vo ragai=pa
 look-DERIV-SG.F buy-3SG.M_β-IP_β 1.SG=BEN
 Robinson satisfied me because he bought binoculars for me.

- (167) *rera vara-aro=ia veeto-a keke-pa-io-vo uvava*
 PRO.3.SG.M body-POSS=LOC cut-SG.N look_at-CONT-1PL.EXCL-RP_β ???
ora-toe-ro-epa
 RR-cut-3SG.M_α-RP_α
 We saw the marks on his body from where he cut himself.

There is another form, *uvavu*, which might also be analyzed as a derived form based on *uva*; however, it functions as a noun co-occurring with nominal enclitics, as in (168) and (169), and is excluded from the list in Table 4.19 since it does not serve a clause-conjoining function.

- (168) *papa-pa kepa keke-ta vavao viara=ia oa uvavu=re*
 fly-DERIV house look-2PL there up-LOC RPRO.3.SG.N somewhere=ALL
ava-pa-i
 go-CONT-PRES_α
 Look at the airplane (literally: flying house) high above that is going somewhere.

- (169) *oira-to kakupie-pa-re-vo uvavu=va*
 man-SG.M shout-CONT-3SG.M_β-RP_β somewhere=ABL
 A man is shouting from somewhere.

The use of a few of these particles is illustrated in (170) through (173) (see §6.3.3 for more detailed discussion of their role in interclausal syntax).

- (170) *Pita keekee-pa sigo-a ari ragai vearo-a sigo-a*
 Pita break-DERIV knife-SG.N but PRO.1.SG good-SG.N knife-SG.N
 Peter has a broken knife but I have a good one.
- (171) *Pita veta-ara pariparikou-pa-re raiva=ia oisio teapi*
 Pita bamboo-PL.N cross.RDP-CONT-3SG.M_β road=LOC COMP lest
oira-ra-vai vo-raiva-ia voka-pa-i-ve
 man-HUM.PL-INDEF SPEC-road-LOC walk-CONT-3PL_β-SUB
 Peter put bamboo across the road lest people walk on the road.
- (172) *apirika-pa-irara oea kakare-aro oisio osia igei*
 Africa-DERIV-HUM.PL PRO.3.PL.M skin-POSS COMP as PRO.1.PL.EXCL
rupa-irara
 dark-HUM.PL
 Africans, their skin is like that of us blacks.
- (173) *vii ateatepie-pa-a-voi ovusia ira-u*
 PRO.2.SG wait-CONT-1SG_β-PRES_β while go_ahead-2SG_α
 I'll wait for you while you go ahead.

4.2.10 Exclamatives

The final word class is fairly minor and consists of what can be labelled “exclamatives”, which can be defined as words that function solely to mark an utterance as expressing a strong emotional state of the speaker (Sadock and Zwicky, 1985; Michaelis, 2001; König and Siemund, 2007). The exclamatives of Rotokas are monomorphemic and occur sentence-initially.

A full list of all known exclamatives is provided in Table 4.20. The glosses provided for these exclamatives are vague and should be considered very provisional, given that an adequate characterization of their meaning would require more detailed study of their pragmatic function (illucutionary force, etc.).

Although the exclamatives are largely monomorphemic, the exclamatives *auo* and *auero* are potentially analyzable (if not synchronically, then at least diachronically). The exclamative *auo* is used exclusively to address females. In (175), it is used by a man in a folk tale who is addressing a woman who is pursuing him aggressively after being charmed by a magical Jew’s Harp.

- (174) *ae apa, auo eaka-u*
 hey wait, hey be_calm-2SG_α
 Hey, wait, woman, settle down! [Firchow and Akoitai (1974:71)]

The exclamative *auoro* is used exclusively to address males. In (175), it is used by one brother addressing another in a short story about two brothers who swim across a river.⁷

(175) *auoro vore-ve*

hey return-1PL.INCL

Hey, we'd better go back! [Robinson and Mon (2006:The River)]

The exclamatives *auo* and *auoro* (sometimes pronounced *auero* or increasingly by the younger generation as *avero*) may be morphemically broken down into *au* and a third person singular demonstrative, either *oo* (female) or *roo* (male). The fact that it is sometimes pronounced as *auero* suggests that it is diachronically related to the particle *ae*, which is used to draw attention to a constituent (see §6.2.2).

⁷(175) is a Rotokas translation of an English sentence, taken from an elementary school reader being developed by the author for the Wakunai school district.

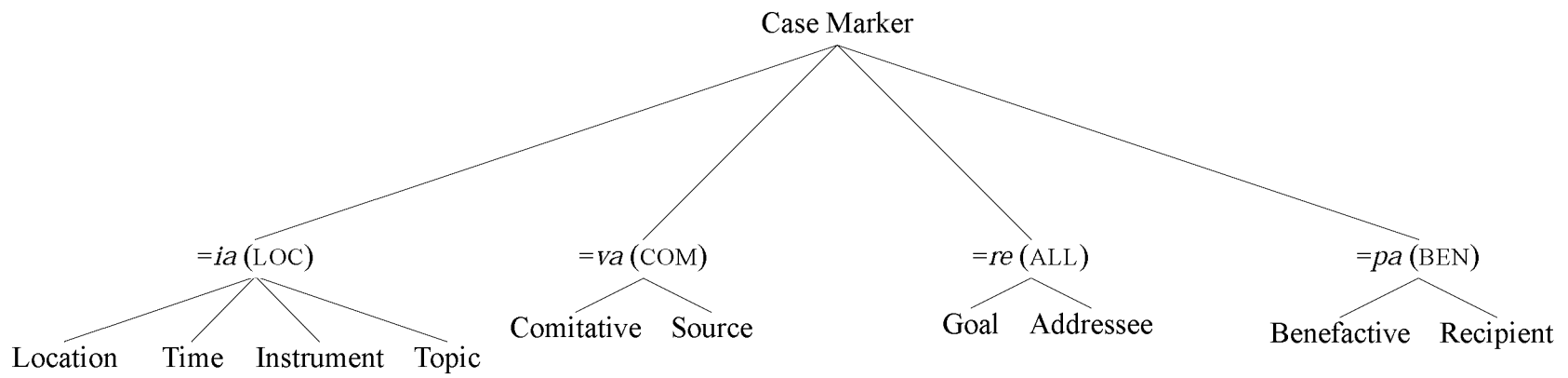


Figure 4.3: Postpositional Enclitics and Their Associated Semantic Roles

Exclamative	Gloss	Notes
aera	All right!	
ae	oh, hey	
aika	wait	
akoea	truly	
apa	hey, eh	
asi	of course	
auo	Hey!	used to address females
auoro	Hey!	used to address males
aure	Yes!	
aviova	of course not, since when	
eagara	Let it be!	
eari	okay, all right	
easi	why of course	
eaviova	no, of course not	
ee	hey, eh	
eesia	It isn't!	
ie	Here take it!	
iiu	yes	
kie	Watch out!, be careful!	
oire	okay, all right	
oo	oh	
ovuvaia	No!	
paapu	no	
raa	Eh!, so?!	
tape	Stop!	
tepa	Hey!	

Table 4.20: Exclamatives in Rotokas

Chapter 5

Morphology

This chapter provides an overview of the morphology of Rotokas, which shows a strong preference for suffixation and can be characterized as agglutinative, following Comrie (1989:43)'s definition: "a word may consist of more than one morpheme, but the boundaries between morphemes in the word are always clear-cut; moreover, a given morpheme has at least a reasonably invariant shape, so that the identification of morphemes in terms of their phonetic shape is also straightforward." The main exceptions to this generalization are the various pronominal paradigms (see §4.2.3) and the verbal morphology for tense/mood (see §5.2.2.7), where the morphemic segmentation is somewhat less straightforward.

A distinction is often drawn between two different types of morphology: derivational and inflection. Concerning this distinction, Anderson (1985:162) writes:

The central insight of this opposition is that derivation produces new lexical items (perhaps complete words, perhaps stems) from other lexical material, with the derived items on a par with simple, underived ones as far as their role in grammar is concerned; while inflection on the other hand serves to 'complete' a word by marking its relations within larger structures. Inflection typically marks categories which are applicable (at least potentially) to any item in a given word class, rather than being specific properties of individual lexical items.

For descriptive convenience, inflectional and derivational morphology will not be dealt with separately in this chapter. Although there is very little derivational morphology associated with nouns, there is a good deal of it associated with verbs, and this is given in-depth treatment in Chapter 9, which looks at the valency-changing derivations found in the language.

5.1 Nominal Morphology

The template for nominal morphology is provided in Figure 5.1. Morphemes are listed according to their order of occurrence, which is strictly transitive (i.e., if $A > B$ and $B > C$, then

$A > C$). The only required morpheme is the nominal root; all other morphemes are strictly-speaking optional (although noun roots normally take a gender/number suffix).

Specifier	Root Noun	Derivational	Gender/Number	Possession	Diminutive	Alternative	Definiteness
-1	0	1	2	3	4	5	6
$\left\{ \begin{array}{l} vo- \\ o- \\ ora- \end{array} \right\}$	<i>N</i>	<i>-pa</i>	$\left\{ \begin{array}{l} -a \\ -ara \\ -(a)rei \\ -irara \\ -riri \\ -to(a) \\ -toarei \\ -va \end{array} \right\}$	<i>-aro</i>	<i>-vi</i>	<i>-vu</i>	$\left\{ \begin{array}{l} -i \\ -vai \end{array} \right\}$

Figure 5.1: Nominal Morphology

5.1.1 Prefixes

There are two mutually exclusive sets of prefixes that occur with nouns: the reflexive/reciprocal marker *ora-* and the specifier *vo-*. (There is also a prefix, *a-*, which co-occurs with the alternative suffix and is analyzed here as a circumfix—see §5.1.2.5.)

5.1.1.1 Order 1 Prefix: Reflexive/Reciprocal Marker

The reflexive prefix *ora-* occurs with pronouns as well as verbs (cf. §5.2.1.1). It has three semantic functions: reflexive, reciprocal, or emphatic/contrastive.

5.1.1.1.1 Reflexive The reflexive function of the prefix *ora-* is illustrated in (176).

- (176) *ora-vii=pa* *kepa-vai* *pura-ri-vere* *riro goru* *kepa-vai* *ora*
 RR-PRO.2.SG=BEN house-INDEF build-2SG_β-NF big strong house-INDEF and
aio-ara-vai *vatatopo-ri-vere* *ora-vii=pa*
 eat-PL.N-INDEF prepare-2SG_β-NF RR-PRO.2.SG=BEN
 You must build a house, a strong house, **for yourself** and prepare food **for yourself**.
 [Robinson and Mon (2006:“Cricket and Grasshopper”)]

5.1.1.1.2 Reciprocal The reciprocal function of the prefix *ora-* is illustrated in (177).

- (177) *vo-vokiaro uva oisoa ora-vaiterei ruvara=ia uusi-pa-si*
 SPEC-night so always RR-DEM.MED.M.DL close=LOC sleep-CONT-3DL.M
 During the night they slept next to **each other**. [Robinson and Mon (2006:“Cricket and Grasshopper”)]

5.1.1.1.3 Emphatic/Contrastive The emphatic/contrastive function of the prefix *ora-* is illustrated in (178).

- (178) *ora-ragai raga ava-pa-ra-i Ruruvu iare*
 RR-PRO.1.SG only go-CONT-1SG_α-PRES_α village POST
I myself am going to Ruruvu./I am the one going to Ruruvu.

5.1.1.2 Order 1 Prefix: Specifier

The nominal prefix *vo-* can be described as specifier.¹ It occurs with both nouns and classifiers, as illustrated in (179) and (180), but not with pronouns.

5.1.1.2.1 Specifier with Noun

- (179) *oira-to ira vo-riako situe-pa-re osia*
 man-SG.M RPRO.3.SG.M SPEC-woman watch-CONT-3SG.M_β as
siisiiu-pa-a-i
 bathe-CONT-3PL_α-PRES_α
 The man is watching the women as they bathe.

5.1.1.2.2 Specifier with Classifier

- (180) *Savia veeta tou pokopoko-pie-e-voi uvare vo-tou*
 Savia bamboo CLASS pop.RDP-CAUS-3SG.F_β-PRES_β because SPEC-CLASS
tovo-e-vo tuitui kasi sovara=ia
 put-3SG.F_β-IP_β fire inside=LOC
 Savia made the bamboo pop repeatedly because she put it in the fire.

Firchow (1987:34) treats the form *o-* as an allomorphic variant of *vo-* which co-occurs with the alternative suffix *-vu*, as illustrated in (181).

¹Firchow (1987:34) describes the prefix *vo-* as “the specific morpheme”.

- (181) *Rarasori vigei=pa reo-pa vuku ariara-pie-re-va*
 Robinson PPRO.1.PL.INCL=BEN word-DERIV book on_top-CAUS-3SG.M_β-RP_β
oa iava uvui-pa-vi-ei ra o-vaisi-ro-vu=ia
 therefore be_able-CONT-1PL.INCL-PRES_α and SPEC-word-PL.CL-ALT=LOC
tarai-pa-vio
 know-CONT-1PL.INCL
 Robinson prepared a dictionary for us and that's why we can know about other words.

However, unlike the prefix *o-*, the form *vo-* in some cases functions as the host (rather than as a modifier to another form) for the role-marking enclitics discussed in §5.1.3.1. In §5.1.2.5, the form *o-* is reanalyzed as part of the alternative circumfix.

- (182) *riuriu-vira raga Saro kare-ro-viro-i vo=va vegoaro*
 dirty-ADV only Saro return-3SG.M_α-RES-PRES_α SPEC=ENC jungle
 Saro came from the jungle dirty.

- (183) *kakae vasia varu tara-sia ava-a-e vo vego-aro*
 boy CLASS meat find-DEP.SEQ go-3PL_α-IP_α SPEC jungle-POSS
 The boys are going to find meat in the jungle.

5.1.2 Suffixes

5.1.2.1 Order 1 Suffixes: Derivational

The suffix *-pa* derives instrumental and agentive nouns from various parts of speech (noun, verb, etc.): for example, the agentive noun *kavirupato* “thief” is derived from the verb *kaviru* “steal”, while the agentive noun *vovokiopairara* “people of today” derives from the temporal noun *vovokio* “today”.²

- (184) *kaviru-pa-to kepa=ia paroo-ro-i vori-ara rutu*
 steal-DERIV-SG.M house=LOC go_inside-3SG.M_α-PRES_α money-PL.N very
kaviru-sia
 steal-DEP.SEQ
 The thief is going inside of the house in order to steal all of the money.

- (185) *vovokio-pa-irara riro kaureo-irara aite-irara=re*
 today-DERIV-HUM.PL big arrogant-HUM.PL father-HUM.PL=ALL
 The people of today are arrogant to their parents.

²The suffix *-pa* is described as the “instrument-agent marker” by Firchow (1987:35–36), who observes: “The instrument-agent (agt) marker *-pa* nominalizes adjectives and verb stems and also signals that a following suffix or bound stem is manifesting the agent.”

Instrumental nouns are also derived with this suffix: for example, the noun *atepato* “scale” derives from the verb stem *ate* “weigh, measure”, as in (186) (which also illustrates the use of *ate* “weigh” as a verb root).

- (186) *Maikol ira kakau vaeke-ro ate-pa-re-voi atepatoa=ia*
 Maikol RPRO.3.SG.M cocoa CL-PL.CL weigh-CONT-3SG.M_β-PRES_β scale=LOC
 Michael weighs the cocoa on a scale.

There are a number of instrumental nouns for which the suffix *-pa* is optional, such as *eri(pa)to* “shovel” (derived from *eri* “dig”), which occurs with the suffix *-pa* in (188) but without it in (187). Elicitation work with native-speakers reveals no difference in meaning between the two forms.

- (187) *Riki eripatoa=va urio-u apui teka-sia*
 Riki shovel=COM come-2SG_α hole dig-DEP.SEQ
 Riki, come with a shovel to dig a hole.

- (188) *avu-va eritoo=ia opo pau-sia ava-o-e eisi kovo-a*
 grandparent-SG.F shovel=LOC taro dig-DEP.SEQ go-3SG.F_α-IP_α LOC garden-SG.N
 Grandma went to plant taro with a shovel in the garden.

The suffix *-pa* also functions as a derivational suffix for a subset of verbal roots when they play an attributive role, as illustrated in (189) and (190), where in both cases the noun *kepa* “house” is modified by a verb root with the derivational suffix: *ruvaru* “medicate” in (189) and *upia* “be sick” in (190).

- (189) *ori-pa-to Raka eisi ruvaru-pa kepa*
 cook-DERIV-SG.M Raka LOC heal-DERIV house
 Raka is the cook at the medical station.

- (190) *upia-pa-to pau-pa-a=ia pau-pa-ro-i upia-pa*
 sick-DERIV-SG.M sit-DERIV-SG.N=LOC sit-CONT-3SG.M_α-PRES_α be.sick-DERIV
kepa siovara=ia
 house on=LOC
 The sick man sits down in a chair inside of the medical station.

Finally, the suffix *-pa* also occurs on verbs as an aspectual marker (see §5.2.2.3 for details), which is considered here to be a case of homophony. It is unclear which of the two functions (derivational versus aspectual) is instantiated when *-pa* occurs on adverbs (see §4.2.6), as illustrated in (191).

- (191) *vuri-a vao uuko-a oa tuvupavira tou-pa-i*
 bad-SG.N DEM.PROX.3.SG.N water-SG.N RPRO.3.SG.N muddy-?-ADV be-CONT-3PL_β
osa ra va=ia ukaio-pa-u
 as and PRO.3.SG.N=ENC drink-CONT-2SG_α
 Water that is muddy is bad, as you can’t drink from it.

5.1.2.2 Order 2 Suffixes: Number/Gender

The full set of number/gender suffixes will not be exemplified here, since the gender/number markers were already discussed in detail in §4.2.1.1. There is allomorphic variation in the realization of the masculine singular: when it is followed by another suffix, its form is *-toa* rather than *-to*, as in (192) and (193).

(192) *vii viapau uvui-pa-u ra tutuvagi oira-toa-vai vura-ri*
PPRO.2.SG NEG able-CONT-2SG_α COMP dark man-SG.M-INDEF look-2SG_β
You can't see a man in the dark.

(193) *ikoto-to ira osiri rutu roko-pa-re rasi-toa=ia*
taproot-SG.M RPRO.3.SG.M deep very enter-CONT-3SG.M_β ground-SG.M=LOC
A taproot goes deep into the ground.

The distribution of *-toa* is wider than that of *-to*, since *-toa* also occurs even when it is not followed by another suffix, as illustrated in (194).

(194) *vii kopuasi-toa rutu viovoko-to*
PRO.2.SG smart-SG.M very adolescent-SG.M
You're a smart boy.

5.1.2.3 Order 3 Suffixes: Possession

The most common form of possession marking occurs on the possessed noun as the suffix *-aro* (see §6.1.2 for an overview of possession-marking strategies).

(195) *vo-ovi vaisi-aro Eriovi*
SPEC-water name-POSS Eriovi
The name of this water is Eriovi. [Firchow and Akoitai (1974:52)]

(196) *ira aite-aro ava-ro-epa voka-sia vego-aro*
RPRO.3.SG.M father-POSS go-3SG.M_α-RP_α walk-DEP.SEQ jungle-POSS
His father went walking through the jungle. ["Story About Children"]

5.1.2.4 Order 4 Suffixes: Diminutive

The suffix *-vi* has a diminutive meaning. It follows the number/gender suffixes, as can be seen in (197), and precedes the alternative suffix, as illustrated in (198). (Note that in both examples the diminutive suffix occurs on a modifier to the head noun, rather than on the head noun itself.)

- (197) *Puruata oavu gare-a-vi uvuo-a oae isi*
 Puruata another small-SG.N-DIM island-SG.N PPRO.3.PL.F CLASS
tou-pa-i-veira eisi Torokira=ia
 be-CONT-3PL_β-HAB LOC Torokina=LOC
 Puruata is a little island that is in Torokina.
- (198) *o-resiura-vi-vu vuruko-ara oara varo-a ivara=ia*
 SPEC-four-DIM-ALT log-PL.N RPRO.3.PL.N clothing-SG.N on=LOC
tou-pa-i-vo
 be-CONT-3PL_β-IP_β
 The other four little logs are on the clothes. [CB:LR]

Firchow (1987:37) notes that the diminutive also has a “figurative” (non-diminutive) meaning when affixed to pronouns, as exemplified in (199) and (200), where it conveys sympathy for the referent of the diminutive noun. However, this “sympathy” reading does not seem to be restricted to pronouns, judging from sentences such as (201), where it occurs with a common noun, *kopiito* “dead man”.

- (199) *ragai-vi takau-ra-i vo-avao-rei tavi-raga-pa-oro*
 PRO.1.SG-DIM tired-1SG_α-PRES_α SPEC-familyDL.CL tell-only-CONT-DEP.SIM
 Poor little me is tired of just talking to the two women and their families.
- (200) *ae asi ragai-vi tuutu-pie-pa-i ra kopii-ra*
 oh of_course PPRO.1.SG-DIM close-CAUS-CONT-PRES_α and die-1SG_α
 Oh, poor little me is close to dying now. [Firchow and Akoitai (1974:45)]
- (201) *kopii-toa-vi uvu-oro toiva tatuatu-re-vo Sova*
 dead-SG.M-DIM hear-DEP.SIM drum beat-3SG.M_β-IP_β Sova
 Sova beat the drum, having heard (about) the dead man.

5.1.2.5 Order 5 Suffixes: Alternative

The suffix *-vu* is described as an “alternative marker” by Firchow (1987:38) because it normally functions contrastively, essentially conveying the meaning of “other” or “another”. Its use presupposes the existence of a contrastive alternative, whether it is explicitly mentioned or simply implied. In (202), for example, a specific child (a boy named Rivasiri) is explicitly contrasted with other (non-specific) children.

- (202) *vo-voki-ro rutu=ia Rivasiri visiko ruipa-pa-ro-veira*
 SPEC-day-PL.CL very=LOC Rivasiri play want-CONT-3SG.M_α-HAB
o-kakae-ro-vu taporo
 SPEC-child-PL.CL-ALT also
 Rivasiri always wants to play with the other children.

In (203), however, there is a contrast made between one side of the body (explicitly mentioned) and the other (not explicitly mentioned but obviously implied by real-world knowledge).

- (203) *o-varata-vu keke-pa-ri ragai iava*
 SPEC-side-ALT look-CONT-2SG_β PRO.1.SG POST
 Look at the other side of me.

The alternative marker occurs with a variety of noun subclasses: count nouns, as in (204); classifiers, as in (205); resumptive pronouns, as in (206); question words, as in (207); and free-form pluralizers, as in (208)

- (204) *viapau uvui-pa ra ikau-vira o-vaisi-vu vaisi-re-ve uvare*
 NEG be_able-CONT and run-ADV SPEC-name-ALT call-3SG.M_β-SUB because
vapavapa-vira reo-pa-ro-veira
 unfamiliar-ADV talk-CONT-3SG.M_α-HAB
 He can't say the other word quickly because he speaks strangely.

- (205) *aisi raga aio-pa-ri ra aisi-vu aio-ri-vere utupaua*
 CLASS only eat-CONT-2SG_β and CLASS-ALT eat-2SG_β-NF later
 Eat one now and the other later. [Robinson and Mon (2006:“How Snakes Came to Be”)]

- (206) *opeita ira-vu roviriei-pa-ri rera vo-pitupitu-a-aro=ia*
 don't RPRO.3.SG.M judge-CONT-2SG_β PPRO.3.SG.M SPEC-customs-SG.N-POSS=LOC
 Don't judge another because of their customs.

- (207) *Pita eakea-vu=a eva*
 Pita what-ALT=TOP DEM.MED.SG.N
 Peter, what is that (other thing)?

- (208) *o-kare-vu koie kare kou-e-vo ita aako-va*
 SPEC-CLASS-ALT pig FP carry-3SG.F_β-IP_β again mother-SG.F
 The mother carried the other pigs (her piglets).

Firchow (1987:38) observes that the alternative marker co-occurs with the prefix *o-*, as illustrated in (209).

- (209) *o-kakae-vu ita kavau-e osia o-kakae-vu voka-pa-vira raga*
 SPEC-child-ALT again give.birth-3SG.F_β as SPEC-child-ALT walk-CONT-ADV only
tou-pa-i
 be-CONT-3PL_β
 She gave birth to (more) children as the others were walking.

However, the prefix *o-* co-occurs with the suffix *-vu* only on consonant-initial stems. On vowel-initial stems, the suffix *-vu* occurs alone (i.e., the prefix is null or zero realized), as illustrated in (205) through (207). Given that the two affixes obligatorily co-occur, they can be analyzed as a single discontinuous morpheme, the circumfix *o- ... -vu*, which is subject to the allophonic variation described in (210).³

(210) $o- \Rightarrow \emptyset _V$

The alternative suffix precedes the indefinite suffix, as illustrated in (211) and (212).

(211) *sipito voea tavi-re orekerovu-a-vu-vai ou-sia vo=re*
 chief PRO.3.PL tell-3SG.M_β something-SG.N-ALT-INDEF get-DEP.SEQ here=ALL
atoi-a eisi-va kovo-ara
 village-SG.N LOC-ABL work-PL.N
 The chief talked to everyone about getting something from the garden to the village.

(212) *pukopuko-to oira-to ira viapau uvui-pa-ro-i ra*
 crippled-SG.M man-SG.M RPRO.3.SG.M NEG be_able-CONT-3SG.M_α-PRES_α and
o-kovo-a-vu-vai pura-pa-re-ve
 ALT-work-SG.N-ALT-INDEF make-CONT-3SG.M_β-SUB
 A man with crippled fingers and/or toes is a man who can't do any work.

The segmentability of the alternative suffix is questionable in some cases, and one possible explanation is that the suffix has been lexicalized. This is arguably the case for the frequently occurring form *oavuavuvai* “something”. It occurs in (213) and (214), but lacks any clear-cut contrastive semantics.

(213) *ragai=pa oavua-vu-vai epao*
 PRO.1.SG=BEN something-ALT-INDEF exist
 Is there something for me?

(214) *uva viapau oiso oavua-vu-vai vuri-pa-i*
 and NEG COMP something-ALT-INDEF be_bad-CONT-PRES_α
 There is not something that is bad (i.e., there is nothing wrong).

While the indefinite suffix *-vai* is readily identifiable as a separate morpheme, the analysis of *oavuavu* is less clear-cut. This form is capable of functioning alone as a noun, as illustrated in (215) and (216).

(215) *oavuavu uvu-pa-voi oa eru geesi-pa-i*
 something smell-CONT-PRES_β RPRO.3.SG.N stink smell-CONT-PRES_α
 I smell something that stinks.

³Michael Dunn deserves credit for suggesting the alternative circumflex analysis.

- (216) *Pita vaio ora Jon oavuavu=ia ogaoga-vira ora-reo-pa-si-e*
 Pita CL.DL.HUM and Jon something=LOC whisper-ADV RR-talk-CONT-3DL.M-IP_α
 Peter and John are talking about something with each other in whispers.

However, its internal analysis is questionable. It appears to derive from the word *oavu*, which normally functions as a nominal modifier, as in (217) and (218).

- (217) *voru-a goru-aro vara-epa voo=ia uvare oavu voru ou-pa*
 buy-SG.N strong-POSS go_down-DP_α here=LOC because some money get-DERIV
tupa-piro-pa
 close-RES-DP_α
 The strength of money went down here, because a money-getting place (the gold mine) closed.

- (218) *Puruata oavu gare-a-vi uvuoa oa eisi tou-pa-i-veira eisi*
 Puruata some small-SG.N-DIM island RPRO.3.SG.N LOC be-CONT-3PL_β-HAB LOC
Torokira=ia
 Torokina=LOC
 Puruata is a little island that is in Torokina.

Although *oavu* does not agree with the noun that it modifies in (217) and (218), it does take gender/number suffixes when it functions alone as a noun, as in (219) and (220).

- (219) *Varei teka-re evao-arei, oavu-a averu-a ari oavu-a vuru-pa*
 Vareu sharpen-3SG.M_β tree-DL.N one-SG.N thin-SG.N but one-SG.N thick-DERIV
 He is sharpening two trees, one is thin and the other thick.

- (220) *oire oavu-va oa vaisi-pa-i-veira oisio okaoto-va*
 okay some-SG.F RPRO.3.SG.N call-CONT-3PL_β-HAB as talis-SG.F
 Okay, one tree, they call it 'okaoto'. [Matevu]

This suggests that the proper analysis of *oavuavuvai* is the one provided in (221a), but the absence of clear contrastive semantics suggests that the form *oavuavu* has been lexicalized, and the proper analysis is (221b).⁴

- (221) a. *akuku-a viapau oavu-a-vu-vai voo=ia*
 empty-SG.N NEG something-SG.N-ALT-INDEF here=LOC
 It's empty, there's nothing here.
- b. *akuku-a viapau oavuavu-vai voo=ia*
 empty-SG.N NEG something-INDEF here=LOC
 It's empty, there's nothing here.

⁴It might also be possible to treat this as a case of reduplication of *oavu* (i.e., *oavu-avu*), invoking (210) to account for the elision of the initial vowel in the second reduplicant. However, the productive form of reduplication found in the language (see §3.2.3) involves partial reduplication of the first rather than the second reduplicant.

5.1.2.6 Order 6 Suffixes: Definite/Indefinite

5.1.2.6.1 Indefinite Suffix The suffix *-vai* is a marker of indefiniteness (von Heusinger, 2002), which occurs on nouns that are non-specific, unidentifiable, and/or non-referential.⁵ For example, it occurs on the noun *oirato* “man” in (222), which asserts that some unidentified (and perhaps unidentifiable) man will desire the addressee once she is properly adorned.

- (222) *vii orito-a-voi uva vearo keke-irao-u-ei ra*
 PRO.2.SG decorate-1SG_β-PRES_β and good look-INTEN-2SG_α-PRES_α and
oira-toa-vai vii riri-re-ve
 man-SG.M-INDEF PRO.2.SG covet-3SG.M_β-SUB
 I’ll decorate you and you’ll look really good and some man will covet you.

In (223) and (224), the speaker urges the addressee to tear or cut off a plant leaf, without any specific one in mind, in order to use it for medicinal purposes, and in both cases the indefinite noun appears with the suffix *-vai*.

- (223) *ito guruva-vai pako-ri*
 banana leaf-INDEF tear_off-2SG_β
 Grab a banana leaf. [Robinson and Mon (2006:“Leaves Will Help You”)]

- (224) *oire ragai=pa katai vagai-vai tosi-ri aue guru-va ra vao*
 okay PRO.1.SG=BEN one leaf-INDEF cut-2SG_β CONN leaf-SG.F and DEM.PROX.SG.N
ruu-a arua tai
 cover-1SG_β vegetable CLASS
 Cut one leaf for me and I’ll cover these vegetables.

In (225), for example, the noun *oirara* “people” occurs with the indefinite suffix due to the fact that it is non-referential—i.e., refers to non-existing entities.

- (225) *Ruruvu urui arakasi-ei rutu viapau oira-ra-vai*
 Ruruvu village empty-PRES_α very NEG man-HUM.PL-INDEF
 Ruruvu village is truly empty, there are no people.

5.1.2.6.2 Definite Suffix The meaning and function of the suffix *-i* is unclear. It is glossed as the “absolute” suffix by Firchow (1987:39), who claims that it conveys certitude and observes that it occurs only with resumptive pronouns, as in (226) and (227). Although very few instances of it occur in the materials available to me, its occurrence is confined to resumptive pronouns, keeping with Firchow’s observations concerning its distribution.

⁵It is glossed as the “non-absolute” suffix by Firchow (1987:39), who claims it conveys “incertitude” or “possibility”.

(226) *varao rutu=ia viato-pie teapi oa-i*
 DEM.PROX.PL.N very=LOC vacant-CAUS lest RPRO.3.SG.N-
kavu-pa-ri
 leave.behind-CONT-2SG_β
 Clear everything lest you leave one behind.

(227) *vosia koie-a-vai upo-a oisoa iria-i kuvu-a aue=ia veeta*
 when pig-INDEF kill-1SG_β always RPRO.3.SG.F- fill-1SG_α CONN=LOC bamboo
 When I would kill a pig, I would always put it inside bamboo tubes. [Firchow (1984)]

5.1.3 Enclitics

Two categories of enclitics are discussed below: the various postpositional enclitics (§5.1.3.1) and the topic marker (§5.1.3.2). These enclitics are included here, in a section on nominal morphology, because they typically occur on nouns, but strictly speaking they attach at the level of the noun phrase and therefore may cliticize to other parts of speech (e.g., the postnominal noun quantifier *rutu* in (238)).

5.1.3.1 Postpositional Enclitics

The postpositional enclitics are discussed with respect to Rotokas word classes in §4.2.7 and with respect to verb valency and subcategorization in §8.3.3. When these postpositional enclitics occur on adjuncts, they mark broad semantic relations, illustrated in (228) through (234).

5.1.3.1.1 Locative/Instrumental

(228) *upia-pa-ra-i kukue iava oa iava uusi-pa-ra-i uruu-a=ia*
 hurt-CONT-1SG_α-PRES_α head POST hence sleep-CONT-1SG_α-PRES_α bed-SG.N=IA
 My head hurts and that's why I'm sleeping in bed.

(229) *sikuru-pa-irara rearea-a-e vo-wiki-rei=ia*
 school-DERIV-HUM.PL take.vacation.RDP-3PL_α-IP_α SPEC-week-DL.N=LOC
 The school kids take a vacation during these two weeks.

(230) *revasi-vira paru-re-voi parura-to vo=va Kuroi vavae-aro ovusia*
 blood-ADV flow-3SG.M_β-PRES_β blister-SG.M SPEC=ABL Kuroi hand-POSS while
rera toga-e-vo tava-toa=ia
 PRO.3.SG.M pierce-3SG.F_β-IP_β needle-SG.M=LOC
 The blister is flowing bloodily from Kuroi's hand, while he pierced it with a needle.

5.1.3.1.2 Allative

- (231) *oiraopie-pa-irara eisi=re ava-a-verea vuvui ua*
believe-DERIV-HUM.PL LOC=ALL go-3PL_α-DF sky CLASS
The believers are going to heaven.

5.1.3.1.3 Benefactive

- (232) *kakae vure=pa veevee-a pura-pa-a-voi aue iava pukui*
child CLASS=BEN story-SG.N make-CONT-1SG_β-PRES_β CONN POST mountain
tou-to
be-SG.M
I'm telling a story for the children about a mountain dweller.

5.1.3.1.4 Ablative

- (233) *riro-pa vikuta-to eera Sovire ira uvui-pa-i*
big-DERIV whistle-SG.M DEM.M.SG.MED Sovire RPRO.3.SG.M be_able-CONT-PRES_α
ra rera uvu-ri tauai=va
and PRO.3.SG.M hear-2SG_β far_away=ABL
Sovire is a big whistler, who you can hear from far away.

- (234) *Tavi, tuitui-a-vai=va urio-u ra tuitui kasi-ve ori-sia*
Tavi, fire-SG.N-INDEF=ABL come-2SG_α and fire-1DL cook-DEP.SEQ
Tavi, come with some fire and we'll make a fire in order to cook.

5.1.3.2 Topic Marker

The suffix *-a* is analyzed here as an optional topic marker that occurs as an enclitic on nouns in topic position. The topic position is leftmost within the clause and the noun that occupies it typically agrees in person, number, and gender with a coreferential relative pronoun that occurs elsewhere in the clause, as illustrated for a topicalized proper noun in (235) and a topicalized pronoun in (236).

- (235) *Skip Firchow=a avirika-pa-to ira Rotokasi-pa reo*
Skip Firchow=TOP America-DERIV-SG.M RPRO.3.SG.M Rotokas-DERIV word
pore-sia urio-ro-epa
turn-DEP.SEQ come-3SG.M_α-RP_α
Skip Firchow was an American who came to translate Rotokas.

- (236) *ragai=a kerui-to ragoa=ia viapau varu-ara-vai*
 PRO.1.SG=TOP skinny-SG.M RPRO.1.SG=LOC NEG meat-PL.N-INDEF
tou-pa-veira ora aue tuuga ragai vara-aro=ia
 be-CONT-HAB.ANIM and CONN grease PRO.1.SG body-POSS=LOC
 I am skinny, there is no meat on my body and there is grease on my body.

The topic marker occurs at the rightmost boundary of the topic noun phrase and follows all other nominal morphology, such as the possessive suffix in (237).⁶

- (237) *Rarasori vatua-va-aro=a vaita-va rutu riako-va*
 Rarasori wife-SG.F-POSS=TOP pretty-SG.F very woman-SG.F
 Robinson's wife is a very pretty woman.

It therefore typically occurs on the nominal head but can occur on other parts of speech, provided they are the final element of the noun phrase, such as the postnominal quantifier *rutu* in (238).

- (238) *ee vo-kepa kaekae-aro rutu=a vao=ia*
 EXCLAM SPEC-house long-POSS very=TOP DEM.PROX.3.SG.N=LOC
 That's the length of the house.

The suffix described here as a topic marker is described in Firchow (1987:39) as a "relative pronoun marker" due to the fact that subsequent anaphoric reference to the topic usually takes the form of a relative pronoun, as in (239) and (240).

- (239) *Ruso-a aveke-va iria riro-vira aviavi-pa-e-veira*
 Ruso-TOP stone-SG.F RPRO.3.SG.F big-ADV light.RDP-CONT-3SG.F_β-HAB.ANIM
roro-pa-oro vavoiso virauaro
 shine-CONT-DEP.SIM there ground
 Ruso is a stone that shines brightly going there into the ground.

- (240) *Riepi=a tokoruo-to viapau ava-pa-ro-i eisi kovo-a*
 Riepi=TOP sedentary-SG.M NEG go-CONT-3SG.M_α-PRES_α LOC garden-SG.N
 Riepi is a sedentary man, he doesn't go to the garden.

The topic marker can be difficult to identify for non-native speakers given that many nouns (e.g., feminine or neuter singular nouns) end with the same vowel as the suffix, in which case the only reflex of topic marking is vowel lengthening on the noun's final syllable.

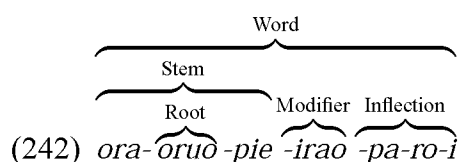
⁶Examples such as (237) contradict the claim made in Firchow (1987:39) that this suffix is mutually exclusive with other nominal suffixes.

5.2 Verbal Morphology

There is a good deal of morphology associated with the derivation and inflection of verb stems in Rotokas, as illustrated by the morphologically complex verb in (241), which consists of a prefix, verb root, and 5 suffixes: the morphological causative, an intensifier, the continuous aspect, third person masculine singular, and the present tense realis mood.

- (241) *Pita ora-oruo-pie-irao-pa-ro-i* *siope-pa-va*
 Peter RR-content-CAUS-only-CONT-3SG.M_α-PRES_α meat-DERIV-SG.F
aio-pa-oro *araisi*
 eat-CONT-DEP.SIM rice
 Peter really contented himself eating meat-filled rice.

The verb in (241) is broken down into its constituent parts in (242).



The template for verbal morphology is summarized diagrammatically in Figure 5.2. Note that the person/number/gender suffixes and the tense/mood suffixes appear in square bracket; this is due to the fact that they come in two sets. Since the nature of these two sets is the focus of the second part of this thesis (see §7), it will suffice for now to label them in a neutral fashion, as Class α and Class β .⁷

5.2.1 Prefixes

5.2.1.1 Order 1 Prefix: Reflexive/Reciprocal

There is only one verbal prefix, the reciprocal/reflexive marker, *ora-* (which, as shown earlier in §5.1.1, also occurs with personal pronouns). Verb stems occurring with the reflexive/reciprocal suffix are invariably α , as illustrated by the contrast between the reflexive and non-reflexive forms of the verb root *upo* “hit, kill” in (243).

- (243) a. *rera* *upo-re-va*
 PPRO.3.SG.M kill-3SG.M_β-RP_β
 He killed him. [Caleb, “Another Togarao Story”]

⁷Firchow (1987) labels the two classes γ and β but the labels α and β are used here instead.

- b. *ra rera raga ora-upo-ro eke*
 and PPRO.3.SG.M only RR-kill-3SG.M α TAG
 Will he kill himself? [Mark 8:22]

In-depth discussion of *ora-* as a valency-decreasing derivational prefix can be found in §9.2.1.

5.2.2 Suffixes

5.2.2.1 Order 1 Suffixes: Causative

The causative suffix *-pie* is a valency-increasing derivational suffix which consistently derives stems that show β agreement (see §9.1.2 for in-depth discussion). For example, the verb root *ka-pua* “to have sores” normally shows α agreement, as illustrated in (244), but shows β agreement when it occurs with the causative suffix, as illustrated in (245).

- (244) *riako-va kapua-pa-o-i uvare vatua-to oira*
 woman-SG.F have_sores-CONT-3SG.F α -PRES α because husband-SG.M PPRO.3.SG.F.B
upo-re-voi vuri-vira rutu
 hit-3SG.M β -PRES β bad-ADV very
 The woman has sores because her husband has beaten her very badly.

- (245) *oirato kapua-pie-i-vo rera upo-oro uvare kepa*
 man have_sores-CAUS-3PL β -IP β PPRO.3.SG.M hit-DEP.SIM because house
toko-oro koata-ro-e torara kaviru-sia
 break_into-DEP.SIM enter-3SG.M β -IP β axe steal-DEP.SEQ
 They injured the man by hitting him because he broke into a house to steal an axe.

5.2.2.2 Order 2 Suffixes: Modifiers

There are two order 2 suffixes, which are *-raga* and *-irao*. Each will be described in turn.

5.2.2.2.1 *-raga* “only/just” The characterization by Firchow (1987) of this suffix as a marker of “indifference” is dubious. These sentences tend to be translated by informants using the Tok Pisin modifier *nating* or with the English focus adverbs *just* or *only*.

- (246) *oire tara-raga-pa-io-va*
 okay search-only-CONT-1PL.EXCL-RP α
 We just searched. (*Na mipela i bin painim nating.*) [Abraham Raviata, “Long Ago in Raurau”]

The suffix *-raga* has an unbound counterpart, illustrated in (247) through (248).⁸

(247) *katai-toarei-vi raga kokai vaio aiterea ou-a-vo*
 one-DL.M-DIM only chicken ANIM.DL PPRO.3.DL.M get-1SG_β-IP_β
 I only got two little chickens.

(248) *avae-vira raga tou-pa-peira vo-rasio=ia*
 temporary-ADV only be-CONT-1DL+HAB SPEC-earth=LOC
 We're only temporarily on the earth.

5.2.2.2.2 *-irao* “really” Firchow (1987) labels the suffix as a marker of “emphasis” but it is probably better characterized as an intensifier.

(249) *oire uva riro-vira rutu rugorugoo-irao-ro-epa rera aite-to oisio*
 okay and big-ADV very think-INTEN-3SG.M_α-RP_α PPRO.3.SG.M father-SG.M COMP
 So, his father really thought hard. [Firchow and Akoitai (1974:78)]

(250) *ari vovou tagoro-vira raga kasipu-irao-pa-ro-epa*
 but DES hidden-ADV only angry-INTEN-CONT-3SG.M_α-RP_α
 He was really angry and hid, that's all. [Firchow and Akoitai (1974:79)]

The suffix *-irao* has an unbound counterpart, which means “true” or “real”, and presumably arose by incorporation into the verbal complex (“adverb incorporation”). The unbound form is illustrated in (252) through (253).

(251) *oira-pa-toa rutu irao vii*
 man-DERIV-SG.M very real PPRO.2.SG
 You're a true man.

(252) *sisiara-pa-toa irao roo koora-to*
 greasy-DERIV-SG.M true PPRO.3.SG.M possum-SG.M
 This possum is truly greasy.

(253) *ruve tai ori-e-voi uva riro-vira ruve-vira irao uvare riro-vira*
 aibika CLASS cook-3SG.F_β-PRES_β and big-ADV big-ADV true because big-ADV
opita kuri-o-i vo-tai=re
 coconut scrape-3SG.F_α-PRES_α SPEC-CLASS=ALL
 She is cooking aibika, and it is truly greasy because she is scraping a lot of coconut on it.

The suffixes *-raga* and *-irao* are not mutually exclusive according to Firchow (1987), who cites (254), where *-raga* precedes *-irao*.

⁸Note the irregular form of verbal inflection in (248)—see §5.2.2.6.1 for explanation.

- (254) *ava-**raga-irao**-pa-ra-erao*
 go-only-INTEN-CONT-1SG_α-NP_α
 I really was just going days ago. [(Firchow, 1987:16)]

Finally, there are a few stems that appear to have lexicalized *-irao* and therefore display apparent violations of morpheme ordering. For example, the causative suffix *-pie* normally precedes *-irao*, as in (255); however, the order is reversed in (256) due to the lexicalization of *-irao* in the stem *kasirao* “hot”.

- (255) *kepa viato-**pie-irao**-i-vo auero vera-oro*
 house clear.out-CAUS-INTEN-3PL_β-IP_β everything remove-DEP.SIM
 They really cleared out the house, removing everything.

- (256) *uuko rovu **kasirao-pie** eto kasi=ia*
 water CLASS heat-CAUS fire=LOC
 Heat up the water on the fire.

Further evidence for the lexicalization of *-irao* in the stem *kasirao* is the fact that the suffix *-irao* can co-occur with the stem *kasirao* (in which case *irao* occurs twice), as illustrated in (257), which describes the symptoms of malaria.

- (257) *vo-rara riro-vira rutu oira-to **kasirao-irao**-pa-ro ora uteo-pa-ro*
 SPEC-later big-ADV very man-SG.M hot-INTEN-CONT-3SG.M_α and cold-CONT-3SG.M_α
tapo
 also
 Hence the man is really hot and really cold. [Firchow (1974b:68)]

5.2.2.3 Order 3 Suffixes: Continuous

The suffix *-pa* is the only Order 3 suffix. It is found with both independent verbs, as in (258), and dependent verbs, as in (259).

- (258) *o-voki-vu=ia ava-ra-era eisi-re Ibu ovusia ora-upo-**pa**-a-era*
 SPEC-day-ALT=LOC go-1SG_α-NP_α LOC=ALL Ibu while RR-hit-CONT-3PL_α-NP_α
 One day I went to Ibu while they fought.

- (259) *riro-vira rutu **roru-pa-oro** kauokauo-pa-ra-i*
 big-ADV very happy-CONT-DEP.SIM jump.RDP-CONT-1SG_α-PRES_α
 I jumped up and down truly happy.

It is glossed as the “progressive action marker” in Firchow (1987:17). However, as Chung and Timberlake (1985:214) observe, the term “progressive” is typically reserved for a category that is restricted to dynamic events:

“More importantly, the opposition between states and process can play a role in the selection of aspectual morphology, specifically the progressive. The progressive asserts that an event is dynamic over the event frame. By definition, then, processes but not states can appear in the progressive.”

The suffix *-pa* occurs with a wide variety of verbs, including verbs that denote non-dynamic events (states), such as *tarai* “know” in (260) and (261). For this reason, it is glossed here as “continuous” rather than “progressive”.

(260) *viapau tarai-pa-ra-i* *motokara voka-pie-pa-oro*
 NEG know-CONT-1SG_α-PRES_α car walk-CAUS-CONT-DEP.SIM
 I don’t know how to drive a car.

(261) *o-kare-vu* *rutu vaisi-aro=ia* *tarai-pa-o-i* *Sera*
 SPEC-FP-ALT very name-POSS=LOC know-CONT-3SG.F_α-PRES_α Sera
 Sera knows the names of all the different animals.

5.2.2.4 Order 4 Suffixes: Resultative Suffix

The resultative suffix takes the form of *-viro* or *-piro*.⁹ The gender of a verb’s subject determines which of the two forms occurs. The suffix *-piro* occurs on verbs with neuter subjects, as in (262), while the suffix *-viro* occurs on verbs with non-neuter subjects, as in (263) (where the non-neuter subject is masculine noun referring to an inanimate object—namely, a post).¹⁰

(262) *Pita, kaitu-pa-i* *eva* *iroiro oa iava toko-piro-i* *varo*
 Pita, tight-CONT-PRES_α DEM.MED.SG.N rope hence breakRES-PRES_α clothes
tava=va
 CL=COM
 Peter, that rope is tight and therefore it broke with the clothes.

(263) *Evato tuuta-to* *roe-re-vo* *uva gasi-ro-viro*
 Evato post-SG.M place-3SG.M_β-IP_β and fall-3SG.M_α-RES
 Evato placed the post and it fell down.

The resultative suffix precedes the tense/mood suffixes and follows the progressive suffix, as illustrated in (264).

⁹This suffix is described as the “complete action” marker by Firchow (1987).

¹⁰Firchow (1987) claims that animacy determines the choice of the two forms. Although gender correlates highly with animacy, there are nevertheless mismatches, primarily with masculine or feminine nouns denoting inanimate entities (e.g., *tuutato* “post”), and these show that it is gender (not animacy) which is the determining factor—e.g., see (263).

- (264) *tokaaru oavu kokoa iroa iava pura-pa-piro-veira*
 orchid another flower vine POST make-CONT-RES-HAB
 An orchid is a flower that appears on the vine.

Firchow (1987:15) observes that the allomorph *-piro* co-occurs with the suffixes *-vere*, *-verea*, *-ve*, and *-veira*, which is unexpected, given that *-piro* normally occurs with neuter subjects while the latter suffixes normally occur with non-neuter subjects. This unexpected co-occurrence is exemplified in (265), where a neuter subject occurs with *-veira*, and in (266), where a neuter subject occurs with *-vere*.

- (265) *uuko-vi vavo-va kosikosi-pa-piro-veira pukui=ia vitu-aro*
 river-DIM there=ABL exit.RDP-CONT-RES-HAB mountain=LOC base-POSS
 The river gushes out from the base of the mountain.

- (266) *vosia katai isi-vai kavu-piro-vere ovoi-ei ra oisio*
 if one CL-INDEF left_behind-RES-NF finish-PRES_α and COMP
kavu-viro-ve-i-ei
 left_behind-RES-1DL-EPEN-PRES_α
 If one [seedling] is left behind, okay, the two of us are left behind. [Firchow (1987:64)]

5.2.2.5 Order 5 Suffixes: Dependent Verb Morphology

Independent verbs show subject agreement and tense/mood marking, whereas dependent verbs lack both and instead take one of one of the dependent-marking suffixes listed in Table 5.1 (see §6.3.2.1 on the syntax of dependent verbs).

Morpheme	Gloss
<i>-sia</i>	purposive action (“in order to”)
<i>-oro</i>	simultaneous action (“while”)
<i>-arapa</i>	negation/negative polarity (“not”)

Table 5.1: Dependent Verb Marking

The three dependent-marking suffixes are illustrated in (267) through (269).

- (267) *erako-sia ava-pa-i-ei*
 collect_firewood-DEP.SEQ go-CONT-1PL.EXCL-PRES_α
 We’re going to collect firewood.
- (268) *ogoe-ra-i voka-pa-oro eisi Asitavi*
 be_hungry-1SG_α-PRES_α walk-CONT-DEP.SIM LOC Asitavi
 I’m hungry walking to Asitavi.

- (269) *asia-pa-ra-i* *utu-arapa* *eisi=re* *kovo-a*
 be_disinclined-1SG_α-PRES_α follow-DEP.NEG LOC=ALL garden-SG.N
 I don't want to come along to the garden.

Firchow (1987:19) observes that the suffix *-arare* is an alternative form of suffix *-sia*, but that it is very rare and appears to be archaic. No examples of it are attested in the materials available to the author.

5.2.2.6 Order 5 Suffixes: Person/Number/Gender

The order 5 suffixes fall into two classes on semantic grounds: dependent verb morphology and person/number. The two are mutually exclusive. In other words, a verb stem can either take independent or dependent inflection, but not both. If it takes independent inflection, it must take person/number marking, whereas if it takes dependent inflection, it cannot take person/number marking and must take one of the dependent marking suffixes. Dependent marking also precludes tense/mood marking, which is discussed in §5.2.2.7.

5.2.2.6.1 Person/Number/Gender Independent verbs agree with their subjects in person, number, and gender. Agreement is nominative-accusative, in the sense that the verb always agrees with either S (subject of an intransitive verb) or A (subject of a transitive verb) (see §7.3 for more in-depth explanation of the terms S, A, and O). However, the form of subject agreement depends upon the particular person, number, and gender configuration—see Table 5.2. Verbal inflection shows distinct forms of subject agreement for some configurations of person, number, and gender (e.g., third person singular), but not for others (e.g., third person dual). For example, the verb root *uusi* “sleep” shows α agreement while the verb root *upo* “hit” shows β agreement. The form of verbal inflection for the third person singular feminine differs for the two verb roots: *-o* in (270) and *-e* in (271).

- (270) *atuu* *koto-vira* *uusi-pa-o-i*
 flying_fox hang-ADV sleep-CONT-3SG.F_α-PRES_α
 The flying fox sleeps hanging.

- (271) *vegei* *upo-e-voi*
 PRO.1.DL.EXCL kill-3SG.F_β-PRES_β
 She's killing us two! [Firchow and Akoitai (1974:32)]

However, verbal inflection for the third person dual masculine shows no distinction between α and β agreement. The form of verbal inflection for the third person dual masculine is invariant, as shown by (272) and (273).

- (272) *evoa oisioa uusi-pa-si*
 there always sleep-CONT-3DL.M
 The two of them always slept there. [Firchow and Akoitai (1974:27)]

(273) *osia viapau oisioa koie kare-vai upo-pa-si*
 as NEG always pig FP-INDEF kill-CONT-3DL.M
 But the two did not kill any pigs. [useless_dogs.txt:4]

The full set of person-marking suffixes is summarized in Table 5.2, where each configuration of person, number, and gender is provided.

Person	Number	Gender	α	β
1st Person	Singular		<i>-ra</i>	<i>-a</i>
	Dual		<i>-ve</i>	
	Plural Inclusive		<i>-vio</i>	
	Plural Exclusive		<i>-io</i>	
2nd Person	Singular		<i>-u</i>	<i>-ri</i>
	Dual	M	<i>-si</i>	
		F	<i>-ere</i>	
	Plural		<i>-ta</i>	
3rd Person	Singular	M	<i>-ro</i>	<i>-re</i>
		F	<i>-o</i>	<i>-e</i>
	Dual	M	<i>-si</i>	
		F	<i>-ere</i>	
	Plural		<i>-a</i>	<i>-i</i>

Table 5.2: Subject Agreement Suffixes

The paradigmatic structure of the various pronoun paradigms differs slightly from that of the person-marking suffixes, due to the collapsing of the distinction between the second and third person dual in the bound pronouns.¹¹ This is illustrated in Figure 5.3, where the paradigmatic structure of the personal pronouns (repeated from Figure 4.2) is contrasted with the verbal agreement suffixes following the analytical scheme of Cysouw (2003).

¹¹Cysouw (2003) observes that vertical homophony between the second and third person is typical of the Papuan languages, citing as an example the mainland Papuan language Korafe. This remains to be substantiated, but it is worth pointing out that this pattern is not particularly widespread among the East Papuan languages. In fact, it is found in only 4 of the 15 languages surveyed in a comparison of grammatical features described in Dunn et al. (2005)—namely, Mali, Savosavo, Rotokas, and Yéli-Dnye.

		Group	Restricted Group	
Personal Pronouns (Free)				
1	<i>ragai</i>	<i>vigei</i>	<i>vegei</i>	1+2(+3)
2	<i>vii</i>	<i>igei</i>	<i>vei</i>	1+3
3	<i>rera / oira / va</i>	<i>visii</i>	<i>vaiterei</i>	2+3
		<i>voea</i>		3+3
Verbal Agreement (Bound)				
1	<i>-ra / -a</i>	<i>-vi</i>	<i>-ve</i>	1+2(+3)
2	<i>-u / -ri</i>	<i>-io</i>		1+3
3	<i>-ro / -re</i>	<i>-ta</i>	<i>-si / -ere</i>	2+3
		<i>-i / -a</i>		3+3

Figure 5.3: Paradigmatic Structure for Person Marking in Personal Pronouns versus Verbal Agreement Suffixes

The use of two different personal pronouns with the same form of verbal agreement is illustrated in (274) and (275). In both cases, the verbal agreement takes the suffix *-si*, but the personal pronoun that plays the role of subject is the second person plural *vei* in (274) and the third person dual *vaiterei* in (275).

(274) *vei rogo rovo-pa-si-ei ikau-oro*
 PRO.2.PL begin start-CONT-2DL-PRES_α run-DEP.SIM
 You two start running first . . . [(78)]

(275) *vaiterei ora-uugaa-pa-si-ei*
 PRO.3.DL RR-kiss-CONT-3DL.M-PRES_α
 The two are kissing each other.

5.2.2.7 Order 6 Suffixes: Tense/Mood

The order 6 suffixes consist of morphemes that mark tense and/or mood. These morphemes can be divided into two classes: those that are sensitive to verb stem classification and those that are sensitive to the gender of the subject. These two formally distinguishable classes correspond to a basic distinction between two categories of mood: realis and irrealis. The distinction between these two categories is characterized by Mithun (1999:173) in the following terms: “The realis portrays situations as actualized, as having occurred or actually occurring, knowable through direct perception. The irrealis portrays situations as purely within the realm of thought, knowable only through imagination.”

Tense/mood marking is obligatory for independent verbs, with two exceptions. First, absence of marking is interpreted as present tense—i.e., the present tense can be null-marked (see

§5.2.2.7.1). Second, no marking of tense, aspect, or mood is found on imperatives, as illustrated in (276) and (277).

(276) *Visiaevi uuko-a-va urio-u ra ukaio-ra*
 Visiaevi water-SG.N=ABL come-2SG_α and drink-1SG_α
 Visiaevi, come with some water and I'll drink.

(277) *varao vori-ri kotokoto-ara*
 DEM.N.PL buy-2SG_β cargo.RDP-PL.N
 Buy these supplies.

5.2.2.7.1 Realis Within the realis mood, Rotokas has a system of metrical tense (Comrie, 1985b). Such systems are fairly rare cross-linguistically. They are found among the Papuan languages of mainland Papua New Guinea but not among the East Papuan language, with the notable exception of Yéli-Dnye (Dunn et al., 2002) and Rotokas.

The metrical tense system of Rotokas distinguishes between the present tense and four categories of past tense: immediate, near, distant, and remote. This is summarized in Table 5.3.

Tense		<i>α</i>	<i>β</i>
Present		<i>-ei</i>	<i>-voi</i>
Past	Immediate	<i>-e</i>	<i>-vo</i>
	Near	<i>-era</i>	<i>-vora</i>
	Distant	<i>-erao</i>	<i>-vorao</i>
	Remote	<i>-epa</i>	<i>-va</i>

Table 5.3: Rotokas Tense Categories

Additional segmentations of these forms, where the tenses are analyzed as a combination of suffixes, is possible. An alternative segmentation is shown in Table 5.4.

Tense	Surface Form	Underlying Form		
Present	<i>-ei</i>	<i>-e</i>	<i>-i</i>	
	<i>-voi</i>	<i>-vo</i>	<i>-i</i>	
Immediate	<i>-e</i>	<i>-e</i>		
	<i>-vo</i>	<i>-vo</i>		
Near	<i>-era</i>	<i>-e</i>	<i>-ra</i>	
	<i>-vora</i>	<i>-vo</i>	<i>-ra</i>	
Distant	<i>-erao</i>	<i>-e</i>	<i>-ra</i>	<i>-o</i>
	<i>-vorao</i>	<i>-vo</i>	<i>-ra</i>	<i>-o</i>
Remote	<i>-epa</i>	<i>-e</i>	<i>-pa</i>	
	<i>-va</i>	???		

Table 5.4: Segmentation of Realis Suffixes

This analysis isolates a morpheme *-vo* that is governed by verb stem classification; it occurs with β (but not α) verb stems. The sticking point for such an analysis is the remote past, which would have to be analyzed as the combination of *-vo* with another morpheme. (For ease of morphological glossing, the more superficial analysis—positing suffixes sensitive to a combination of verb classification and tense—will be provided for all example sentences.)

There is an uncommon verb conjugation described as the “anticipatory mode” by Firchow (1987:21) that is potentially relevant here. It suggests the isolability of a suffix *-vo* that is sensitive to the distinction between α and β : the form *-iva* occurs with α inflection, as illustrated in (278), while the form *-voiva* occurs with β inflection, as illustrated in (279).

(278) *varuere-a-iva*

hunt-3PL $_{\alpha}$ -ANTIC $_{\alpha}$

They hunt animals and . . . [Firchow (1987:21)]

(279) *kakae-to posiposi-re-voiva veruta-va kareke-o-i*

child-SG.M dry.RDP-3SG.M $_{\beta}$ -ANTIC $_{\beta}$ skin.flake-SG.F appear-3SG.F $_{\alpha}$ -PRES $_{\alpha}$

rera vara-aro=ia

PRO.3.SG.M body-POSS=LOC

Once the boy had dried, skin flakes appear on his body.

An alternative analysis of this form is to treat it as a combination of the present tense suffix *-(e)i/-voi* plus *-va* (possibly identifiable with the remote past tense suffix), as in (280).¹²

¹²Additional insight into the diachronic relationship of these suffixes may come from the morphological analysis of the other dialects of Rotokas—e.g., Aita Rotokas, which possesses a larger phonemic inventory by conserving a phonemic distinction that has been collapsed in Central Rotokas (Robinson, 2006)—or its almost entirely undocumented sister languages (Eivo, Keriaka, Rapoisi).

- (280) *varuere-a-i-va*
 hunt-3PL_α-PRES_α-?
 They hunt animals and . . . [= (278)]

Present The marker of the present tense takes one of two forms: *-ei* and *-voi*. The suffix *-ei* occurs with α verbs and the suffix *-voi* occurs with β verbs. This is illustrated with the ambitransitive verb stem *ori* “cook”: the form *-ei* occurs with α subject agreement in (281) and the form *-voi* occurs with β agreement in (282).

- (281) *Rave, vii ori-pa-u-ei oira-ra=pa ovusia vii-pa*
 Rave, PPRO.2.SG cook-CONT-2SG_α-PRES_α man-HUM.PL=BEN while PPRO.2.SG=BEN
kovo-i-ve
 work-3PL_β-SUB
 Rave, you cook for the men while they work for you.

- (282) *Ireviri koorato siare-aro ori-re-voi*
 Ireviri possum innard-POSS cook-3SG.M_β-PRES_β
 Ireviri is cooking the possum’s innards.

When verb stems lack TAM marking, they are interpreted as present tense, as illustrated for the α stem *era* “sing” in (283) and for the β stem *kipe* “cut” in (284). (The missing present tense suffix is explicitly realized as a null suffix for the purposes of illustration but is simply omitted elsewhere.)

- (283) *koova-va=ia viokeke-vira era-pa-ro-∅ Kare*
 sing-SG.F=LOC whistle-ADV sing-CONT-3SG.M_α-PRES_α Kare
 Kare is singing a song whistling.

- (284) *Pita isisio kou kipe-re-∅ uvare kepa ruvara=ia tou-pa-i-voi*
 Pita grass CLASS cut-3SG.M_β-PRES_β because house near=LOC be-CONT-3PL_β-PRES_β
 Peter is cutting the grass because it is close to the house.

Immediate Past The immediate past is used to describe events that took place either on the same day as the present or one day prior to it. The marker of the immediate past can take one of two forms: *-e* or *-vo*. The form *-e* occurs with α stems, as in (285), while the form *-vo* occurs with β stems, as in (286).

- (285) *ora-upo-pa-a-e oa iava eera=ia evara*
 RR-strike-CONT-3PL_α-IP_α hence DEM.MED.SG.M=LOC DEM.MED.PL.N
tou-pa-i tapuku-ara
 be-CONT-3PL_β contusion-PL.N
 They fought and that’s why there are contusions on him.

- (286) *uva apeisi raga-vira oira upo-ri-vo*
 so how only-ADV PPRO.3.SG.F strike-2SG β -IP β
 And just how did you kill him? [Firchow and Akoitai (1974:44)]

Near/Distant Past The distant and near past are used to describe events that took place at least one day prior to the present. The marker of the distant past tense takes one of two forms: *-vora* or *-era*. The form *-era* occurs with α stems, as in (287), and the form *-vora* occurs with β stems, as in (288).

- (287) *o-voki-vu=ia ava-ra eisi=re Ibu ovusia ora-upo-pa-a-era*
 SPEC-day-ALT=LOC go-1SG α LOC=ALL Ibu while RR-hit-CONT-3PL α -NP α
 One day I went to Ibu while they fought. [= (258)]

- (288) *Vererire raroe-vira tou-pa-e-veira uvare vatua-to upo-i-vora uva*
 Vererire widowed-ADV be-CONT-3SG.F β -HAB because spouse-SG.M hit-3PL β -NP β and
kopii-ro-era oira arova
 die-3SG.M α -DP α PPRO.3.G.M POST
 Vererire is a widow because they killed her husband and he died leaving her behind.

The marker of the distant past takes one of two forms: *-vora* or *-erao*. The form *-erao* occurs with α stems, as in (289) and the form *-vora* with β stems, as in (290).

- (289) *aako riako ora-vatevate-a-erao aue=ia aio*
 mother FP.F RR-give.RDP-3PL α -NP α CONN=LOC food
 The women gave each other food.

- (290) *Rarasori oirara vate-re-vora vuku-ara ra vara vuravura-i-ve*
 Rarasori people give-3SG.M β -DP β book-PL.N and PPRO.3.PL look.RDP-3PL β -SUB
vara voreri-oro
 PPRO.3.PL repeat-DEP.SIM
 Robinson gave people books so that they would look at them again and again.

Remote Past The remote past is used to describe events that took place in the historical or mythological past, which is typically described using the phrase *voari tuariri* “long ago”, as illustrated in (291) and (292).

- (291) *poupou kovekove-o-i uvare Toki pokoro-viro-o-pa voari*
 dust.RDP fall.RDP-3SG.F α -PRES α because Bagana erupt-RES-3SG.F α -RP α back
tuariri.
 long-ago
 Dust is falling because Mt. Bagana erupted a long time ago.

(292) *tataga evao-va iava oa toe-i-va voari tuariri.*
 log tree-SG.F POST RPRO.3.SG.N cut-3PL β -RP β back long ago
 They cut the log from the tree a long time ago.

The marker of the remote past takes one of two forms: *-epa* or *-va*. The form *-epa* occurs with α stems, as in (293), and the form *-va* occurs with β stems, as in (294).

(293) *voea rutu oira-ra agasi-a-epa tugoro-pa-toa=ia uraura-to*
 PPRO.3.PL very man-HUM.PL be.full-3PL α -RP α holy-DERIV-SG.M=LOC spirit-SG.M
 All of the men filled up with the holy spirit.

(294) *kakate agasi-pie-re-va aue=ia gau*
 bamboo be.full-CAUS-3SG.M β -RP β CONN=LOC tear
 He filled the bamboo tube with tears.

5.2.2.7.2 Irrealis Within the category of irrealis, Rotokas possesses a number of subcategories: the subjunctive, the future, and the habitual. Each has two markers: a *p*-initial form which occurs on verbs with neuter subjects and a *v*-initial form that occurs with non-neuter subjects.¹³ The various markers for the irrealis categories are listed in Table 5.5.

Mood	Subject Gender	
	Neuter	Non-Neuter
Subjunctive	<i>-pe</i>	<i>-ve</i>
Future	Near	<i>-pere</i>
	Distant	<i>-perea</i>
Habitual	<i>-peira</i>	<i>-veira</i>

Table 5.5: Rotokas Irrealis Mood Categories

It should be clear from Table 5.5 that additional segmentation of the irrealis suffixes is possible, as shown in Table 5.6.

¹³According to Firchow (1987:15), “the *p*-initial form occurs in verbs which have an inanimate subject, and the *v*-initial form in verbs with animate subjects”. The relevant variable is, however, gender, and not animacy, although the two largely coincide—see §4.2.1.1.

Tense	Surface Form	Underlying Form
Irrealis	<i>-pe</i>	<i>-pe</i>
	<i>-ve</i>	<i>-ve</i>
Near Future	<i>-pere</i>	<i>-pe -re</i>
	<i>-vere</i>	<i>-ve -re</i>
Distant Future	<i>-perea</i>	<i>-pe -re -a</i>
	<i>-verea</i>	<i>-ve -re -a</i>
Habitual	<i>-peira</i>	<i>-pe -ira</i>
	<i>-veira</i>	<i>-ve -ira</i>

Table 5.6: Segmentation of Irrealis Suffixes

The segmentation found in Table 5.6 suggests that there is a basic irrealis category marked by the suffixes *-pe* and *-ve*, which is subject to additional specification. This is particularly clear in the case of the habitual, which is marked only by *-pe* or *-ve* when habituality is indicated lexically with *oisioa* “always”, as in (295) or (296), but by *-peira* or *-veira* otherwise.

(295) *Asitararia oea oisioa Papua Niugini toki-pa-i-ve*
 Australia PPRO.3.PL.M always Papua Niugini care_for-CONT-3PL_β-SUB
 Australia always takes care of Papua New Guinea.

(296) *tuariripairara oea oisioa evao-ara kogo-pa-i-ve*
 long_ago-DERIV-HUM.PL PPRO.3.PL.M always tree-PL.N cut-CONT-3PL_β-SUB
aue=ia aveke-va torara
 CONN=LOC stone-SG.F axe
 The ancestors always cut trees with a stone axe.

Subjunctive The subjunctive mode is marked by a suffix that takes one of two forms: *-pe* or *-ve*. The form *-pe* occurs with neuter subjects, as in (297), whereas the form *-ve* occurs with all non-neuter subjects, as in (298). Note that in both cases the grammatical subject is notionally inanimate.

(297) *iroiro vao kaitu-pie-ri ra kaitu-pe rutu*
 rope DEM.PROX.3.SG.N tight-CAUS-2SG_β and tight-SUB very
 Tighten the rope and it will be tight.

(298) *voo oisioa vegoto tou-pa-re-ve ira toe-i-va vo-urui-o*
 here always jungle be-CONT-3SG.M_β-SUB RPRO.3.SG.M cut-3PL_β-RP_β SPEC-village-?
pura-sia
 make-DEP.SEQ
 Here is the jungle that they cut in order to make this village.

The two forms of the suffix occur with both α and β verbs, as demonstrated for *-ve* in (299) and (300).

(299) *voari tuariri uva oisioa popote-pa-irara torio-ara=ia*
 back long.ago and always white-DERIV-HUM.PL sword-PL.N=LOC
ora-upo-pa-a-ve
 RR-hit-CONT-3PL α -SUB
 Long ago white people would fight with swords.

(300) *uriri-pa-ra-i teapi ragai upo-i-ve*
 be.afraid-CONT-1SG α -PRES α lest PPRO.1.SG hit-3PL β -SUB
 I am afraid that they might hit me.

The subjunctive marker occurs in a wide variety of contexts. A few of the contexts in which it typically occurs are provided below: negation (301), conditionals (302), interrogatives (303), apprehensionals (304), indirect commands (305), and situations of possibility (306) (Lichtenberk, 1985; Bugenhagen, 1993; Palmer, 2001).

Negation

(301) *regore-vira evao-va iipa-erao uvare viapau va viou-pa-re-ve*
 bent-ADV tree-SG.F go_up-NP α because NEG PRO.3.SG.N clean-CONT-3SG.M β -SUB
Ririvasi
 Ririvasi
 The tree grew crooked because Ririvasi didn't prune it.

Conditional

(302) *Pita Ruke tavi-pa-re-va raerae-vira reoreo-u vosia aite*
 Pita Ruke tell-CONT-3SG.M β -SUB try-ADV talk.RDP-2SG α if father
uvui-pa-ro ra vigei uvu-re-ve ra vegei
 be.able-CONT-3SG.M α and PRO.1.DL hear-3SG.M β -SUB and PRO.1.DL
ato-re-ve ikau-vira
 answer-3SG.M β -SUB hurry-ADV
 Peter told Ruke, you try talking, if dad can hear us, he can reply quickly.

Interrogative

(303) *irou-vai vao kae-ve oapa visii vasie iava*
 who-INDEF DEM.PROX.SG.N carry-SUB bag PPRO.2.PL CLASS POST
 Who among you can carry my bag?

Apprehensional

- (304) *visivisi-vira reoreo-pa-ro-e* *Tavi oisio teapi rera*
 quite-ADV speak.RDP-CONT-3SG.M_α-IP_α Tavi COMP lest PPRO.3.SG.M
uvu-i-ve kaakau kare
 hear-3PL_β-SUB dog FP
 Tavi is speaking quietly lest the dogs hear him.

Indirect Command

- (305) *Riko tavi-re-vo Pita oisio ra kepa pura-re-ve rera=pa*
 Riko tell-3SG.M_β-RP_β Peter COMP and house make-3SG.M_β-SUB RPRO.3.SG.M=BEN
 Peter told Riko to build a house for him.

Possibility

- (306) *evao-ara rutu toe-i-va uva vuatoa pura-piro-pa oa iava*
 tree-PL.N very cut-3PL_β-RP_β and clear-SG.N make-RES-RP_α hence
uvui-pa-i ra avaka-va keke-pa-i-ve eisi vara-vira
 be.able-CONT-PRES_α and beach-SG.F see-CONT-3PL_β-SUB LOC come.down-ADV
 They cut all of the trees and a clearing was made so that it was possible that way to look
 down and see the beach.

Future Firchow (1987:20) describes a number of suffixes as markers of the future tense. However, unlike the other tense-marking suffixes (e.g., the present tense), these suffixes are sensitive to the gender of the subject, and not to the distinction between α and β inflection. Given this formal distinction between the past and present tense suffixes on the one hand and the future tense suffixes on the other, it can be argued that the two classes of suffixes should be assigned to different ontological categories.

Conflation of future tense and potential/irrealis mood is fairly common cross-linguistically. As Chung and Timberlake (1985:243) observe:

The future is thus a category where tense and mood merge. In practice many languages do not distinguish morphologically between future tense and potential (irrealis) mood. Where a difference is made, the future tense is used for events that are presumed to be certain to occur, and the irrealis mood for events that are potentially possible but not presumed to be certain.

Near Future The marker of the near future can take one of two forms: *-pere* or *-vere*. The form *-vere* occurs with α verb stems, as in (307), as well as with β verb stems, as in (308).

- (307) *vavoisio ava-pa-i-ei aue=re oisio ra voa-va*
 there go-CONT-1PL.EXCL-PRES_α CONN=ALL COMP and here-ABL
kare-io-vere vokiario
 return-1PL.EXCL-NF night
 We're going there in order that we come back at night.

- (308) *oire vii va-aro vuku-a kare-pie-a-vere*
 okay PPRO.2.SG PPRO.3.SG.N-POSS book-SG.N return-CAUS-3PL α -NF
 Okay, I'll give you your book back.

The form *-pere* occurs with both α verb stems, as in (309), as well as β verb stems, as in (310). In each case the subject of the verb with *-pere* is neuter.

- (309) *vasirako-vira rutu rakorako-a tuke-re opuuruva iava oiso teapi*
 tight-ADV very rope-SG.N tighten-3SG.M β canoe POST COMP LEST
gavogavoto-pere
 loose.RDP-NF
 He tightened the rope on the canoe so that it will not loosen up.

- (310) *rigato-a-vai veri tou-pere*
 write-SG.N-INDEF worthless be-NF
 The writings will not be worth anything in the future. [Firchow (1984)]

The realization of the near future is irregular for first person dual subjects (Firchow, 1987:15), as illustrated in (311).

- (311) *toaera-vira kovo-pa-veare*
 work_for_money-ADV work-CONT-1DL+DF
 We two will work for money.

Distant Future The marker of the distant future takes one of two forms: *-perea* and *-verea*. The form *-verea* occurs both with α verb stems, as in (312), and with β verb stems, as in (313).

- (312) *oiraopie-pa-irara eisi-re ava-a-verea vuvui ua*
 believe-CONT-HUM.PL LOC=ALL go-3PL α -DF heaven CLASS
 The believers are going to heaven.

- (313) *rovirovirie-a pura-re-verea pau-to utu-pa voki=ia vigei*
 judge-SG.N make-3SG.M β -DF God-SG.M follow-DERIV day=LOC PPRO.1.INCL
vo-pitupituro-aro=ia vosia viapau vearo-vira tou-pa-pe vo-rasio=ia
 SPEC-custom-POSS=LOC when NEG good-ADV be-CONT-SUB SPEC-ground=LOC
 God will measure us according to our habits when we aren't good on earth.

The form of the distant future is irregular with first person dual subjects, as illustrated in (314).

- (314) *reoreo-a pura-si-va oisio voo ora-aivaropie-vearea*
 talk.RDP-N make-3DL.M-RP β like here RR-meet-1DL+DF
 The two of them arranged things, (saying) we will meet here.

Habitual The habitual mode is marked by a suffix that takes one of two forms, *-peira* or *-veira*: the form *-peira* occurs with neuter subjects and the form *-veira* occurs with non-neuter subjects, as illustrated in (315) and (316).

(315) *asiga iro oa virivoko-pa-peira*
 type.of_vine vine RPRO.3.SG.N be_milky-CONT-HAB
 The asiga vine is usually milky.

(316) *aapova iria vokiario papa-pa-e-veira*
 flying_fox PPRO.3.SG.F night fly-CONT-3SG.F β -HAB
 The flying fox flies at night.

The irrelevance of verb stem classification is evident from the fact that *-peira* and *-veira* occur with both α and β stems, as illustrated for *-peira* in (317) and (318) and for *-veira* in (319) and (320). Note that in example sentences illustrating the suffix *-peira* the stem classification is not immediately obvious due to null subject agreement (typical for neuter subjects). However, the two sentences illustrate the occurrence of *-peira* with verb stems whose inflectional pattern is fixed and known: *ugoro* “cold” is α whereas *tou* “be” is β .

5.2.2.7.3 *-peira*

(317) *uuko-ara ugoro-pa-peira vavoisio tutue=ia vosia siisiu-u*
 water-PL.N cold-CONT-HAB there Balbi=LOC when wash-2SG α
 The water is always cold there on Mt. Balbi when you wash.

(318) *oire oisio raga-vira iava tou-pa-peira vo-rasi-toa=ia*
 okay COMP only-ADV POST be-CONT-HAB SPEC-ground-SG.M=LOC
 Okay, just like that they would always be on the ground. [Firchow and Akoitai (1974:82)]

5.2.2.7.4 *-veira*

(319) *virikoi-to vearo-pa-ro-veira take tatu-pa-sia*
 hatchet-SG.M good-CONT-3SG.M α -HAB bamboo chop-CONT-DEP.SEQ
 A hatchet is always good for chopping bamboo.

(320) *Pioto ira aruo-va pura-pa-re-veira aveke-ara=ia*
 Pioto RPRO.3.SG.F mark-SG.F make-CONT-3SG.M β -HAB stone-PL.N=LOC
 Pioto (a river) always makes a mark on the stones.

The habitual mood is insensitive to tense, and is used to describe events regardless of tense, as illustrated in (321), where it describes an event in the past tense, or in (322), where it is used to describe a situation in the present tense.

- (321) *voari tuariri uva oisio pura-pa-a-veira Sirovisia koke pura-pa-to*
 long ago and COMP say-CONT-3PL_α-HAB Sirovisia rain make-DERIV-SG.M
 Long ago they said that Sirovisi was a rain maker.
- (322) *uuko-ara ugoro-pa-peira vavoisio tutue=ia vosia siisiu-u ra uteo-u*
 water-PL.N cold-CONT-HAB there Balbi=LOC when wash-2SG_α COMP cold-2SG_α
rutu
 very
 The water is always cold there on Mt. Balbi; if you bathe, you'll be very cold.

The form of the habitual mood is irregular for first person dual subjects, as illustrated in (323).

- (323) *ari visii tauva-pa-veaira*
 but PPRO.2.PL help-CONT-1DL+HAB
 The two of us always help you two. [Firchow and Akoitai (1974:53)]

5.3 Reduplication

Reduplication is a productive process for verb roots, where its semantic effect is generally one of intensification, as illustrated in (324), or of iteration, as illustrated in (325).

- (324) *Maikol ito-va goo-re-voi uva raverave-o-i*
 Maikol banana-SG.F bring.down-3SG.M_β-PRES_β and dry.REDUP-3SG.F_α-PRES_α
 Michael brought down the banana and it looks dry.
- (325) *evao rao ruviruvi-re-voi*
 tree branch twirl.REDUP-3SG.M_β-PRES_β
 He is twirling the stick in his hands.

Reduplication is compatible with valency-changing derivations, and occurs with both the reflexive/reciprocal prefix, as in (326), and the causative suffix, as in (327).

- (326) *uva oavu=ia ipa ora-vorevoreri-pa-i-era*
 and another=LOC ridge RR-go.up-CONT-1PL.EXCL-RP_α
 We repeatedly went up another ridge.
- (327) *Savia veeta tou pokopoko-pie-e-voi uvare vo-tou*
 Savia bamboo CL explode.REDUP-CAUS-3SG.F_β-PRES_β because SPEC-CL
tovo-e-vo tuitui kasi sovara=ia
 put-3SG.F_β-IP_β fire inside=LOC
 Savia made the bamboo pop repeatedly because she put it in the fire.

Whether reduplication is partial or full depends on the the first syllable of the reduplicated root, as previously described in §3.2.3.

5.4 Morphophonemics

There are a number of systematic morphophonemic alternations in Rotokas inflectional morphology. They can be divided into three groups on the basis of their effect on the form of verbal conjugations.

5.4.1 Identical Vowel Sequences

Since Rotokas syllables are open (i.e., vowel-final), the suffixation of vowel-initial suffixes (e.g., the neuter single *-a* and the neuter plural *-ara*) gives rise to vowel sequences. When the final vowel of a stem and the initial vowel of a suffix are identical (i.e., homorganic), the result is a long vowel. This is not uncommon, given that slightly over half (29/51, 57%) of all suffixes are vowel-initial. It is illustrated in some of the following words:

- (328) a. *veera*
line_up
line up (something)
- b. *veera-a*
line_up-SG.N
line
- c. *veera-ara*
line_up.RDP-PL.N
rows
- d. *veeveera*
line_up.RDP
line up (something) in rows
- e. *veeveera-a*
line_up.RDP-SG.N
rows
- f. *veeveera-ara*
line_up.RDP-PL.N
rows of rows

5.4.2 Deletion and Insertion Rules

The relationship between underlying and surface forms in verbal morphology is largely one-to-one, with the exception of a few fairly straightforward deletion and insertion rules.

5.4.2.1 *o*-deletion

Another morphophonemic rule deletes *o* from the end of a suffix when it precedes another suffix beginning with *e* (Firchow, 1987:15–16). This is not simply a phonological rule, since the sequence *oe* across a morpheme boundary is possible, judging from perfectly grammatical forms such as those in (329).

- (329) a. *ava-ro-epa*
 go-3SG.M_α-RP_α
 He went.
- b. *aio-pa-o-e*
 eat-CONT-3SG.F_α-IP_α
 She ate.

The morphophonemic rule is stated formally in (330) and its effect can be seen in the contrast between (331) and (332).

$$(330) \begin{bmatrix} -io \\ -vio \end{bmatrix} \Rightarrow \begin{bmatrix} -i \\ -vi \end{bmatrix} / - \left\{ \begin{array}{l} -ei \\ -era \\ -erao \\ -epa \end{array} \right\}$$

- (331) *iro-ara-vai* *ou-ta* *ra* *ava-vio* *erako* *ogata-sia*
 rope-PL.N-INDEF get-2PL and go-1PL.INCL firewood carry_in_worksack-DEP.SEQ
 Get some ropes and we'll carry firewood in a worksack.

- (332) *evao toe-sia* *ava-pa-vi-ei* *kepa pura-sia*
 tree cut-DEP.SEQ go-CONT-1PL.INCL-PRES_α house make-DEP.SEQ
 Let's go cut a tree to make a house.

5.4.2.2 *e*-deletion

Firchow (1987:15-16) states two rules that involve the deletion of *e* from the beginning of a suffix when it follows a suffix ending with *o* or *a*. These rules are specific to particular morphemes and are not general phonological rules, since sequences of *oe* and *ae* across morpheme boundaries are perfectly grammatical, as already shown for *oe* in (329) and as shown for *ae* in (333).

- (333) a. *ava-a-e*
 go-3PL_α-IP_α
 They went.

- b. *kovekove-pa-epa*
 fall.RDP-CONT-RP_α
 It kept falling.

These two morphophonemic rules are given in (334) and (335) (Firchow, 1987:15-16).

$$(334) \begin{bmatrix} -era \\ -erao \\ -epa \end{bmatrix} \Rightarrow \begin{bmatrix} -ra \\ -rao \\ -pa \end{bmatrix} / \left\{ \begin{array}{l} -o \\ -viro \end{array} \right\} -$$

$$(335) -ei \Rightarrow -i / \left\{ \begin{array}{l} a \\ o \end{array} \right\} -$$

These rules are illustrated below:

- (336) *ava-pa-ra-i* *Buka iare*
 go-CONT-1SG_α-PRES_α Buka POST
 I am going to Buka

- (337) *poupou kovekove-o-i* *uvare Toki pokoro-viro-o-pa* *voari*
 dust.RDP fall.RDP-3SG.F_α-PRES_α because Bagana erupt-RES-3SG.F_α-RP_α back
tuariri.
 long_ago
 Dust is falling because Mt. Bagana erupted a long time ago. [= (291)]

5.4.2.3 *i*-insertion

Firchow (1987:15-16) provides the two rules in (338) to account for the epenthetic *i* that occurs when some suffixes are concatenated and the first ends with *e* and the second begins with *e*.

$$(338) \begin{bmatrix} -era \\ -erao \\ -epa \end{bmatrix} \Rightarrow \begin{bmatrix} -iera \\ -ieraο \\ -iepa \end{bmatrix} / \left\{ \begin{array}{l} -ere \\ -ve \end{array} \right\} -$$

$$-ei \Rightarrow iei / e_$$

The effect of (341) on the form of verbal conjugation is illustrated in (339) and (340):

- (339) *tavauru-rirei eisi-re ava-ere-i-e* *Arawa*
 teenager-3DL.F LOC=ALL go-3DL.F-EPEN-IP_α Arawa
 The two teenage girls went to Arawa.

- (340) *uva ora-vasie-ere-i-epa oira=ia era-pa-oro era-va*
 and RR-depart-3DL.F-EPEN-RP_α PPRO.3.SG.F=LOC sing-CONT-DEP.SIM sing-SG.F
 So the two women departed singing the song. [Firchow (1984)]

The two rules from (338) cannot be collapsed into a single, general rule, as in (341), since it would wrongly predict epenthesis in cases where it does not in fact occur—e.g., (342) and (343).

- (341) ... *e-e* ... ⇒ *eie*

- (342) *Sira sisiro kove-e-voi aveke ivara iare*
 Sira mirror drop-3SG.F_β-PRES_β stone above POST
 Sira dropped the mirror on top of the stone.

- (343) *aako-va kakae-to kaa-pie-e-voi aio-a=ia*
 mother-SG.F boy-SG.M choke-CAUS-3SG.F_β-PRES_β food-SG.N=LOC
 Mother made the boy choke with some food.

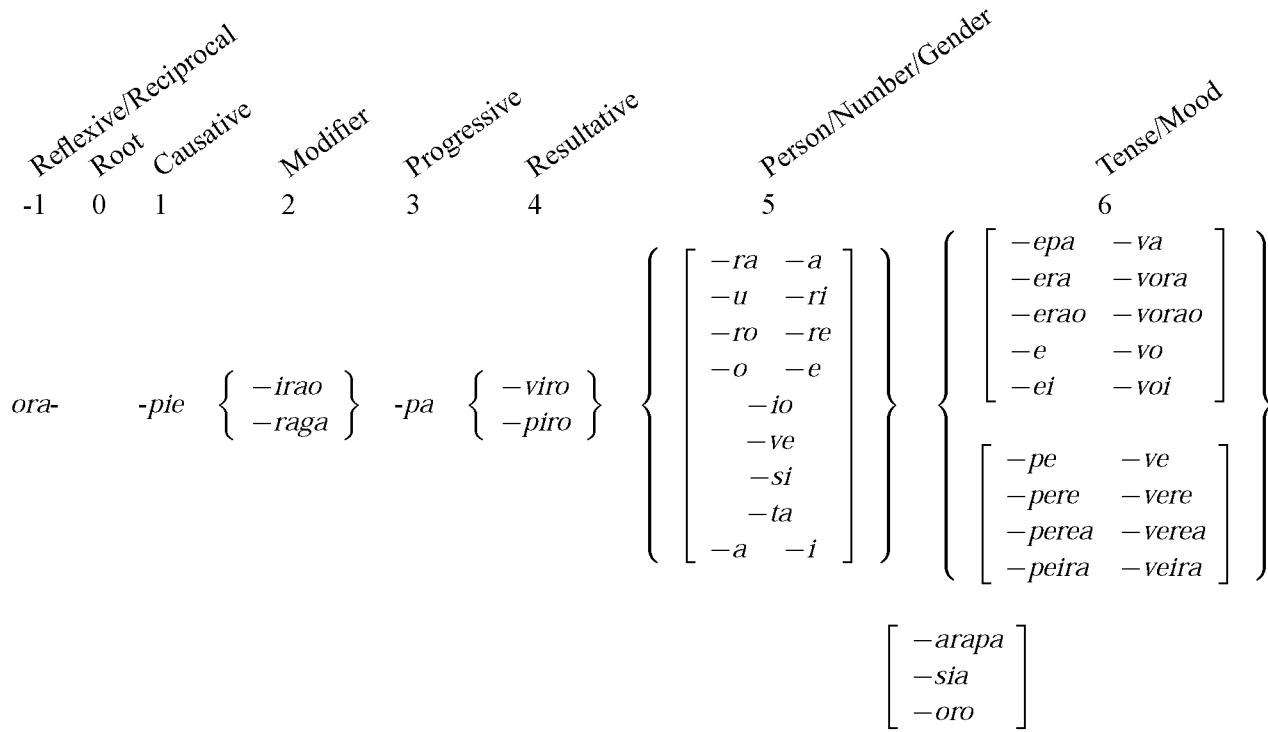


Figure 5.2: Verbal Morphology

Chapter 6

Syntax

This chapter covers various aspects of the syntax of Rotokas that are not covered in the more detailed examination of argument structure provided in the second part of this thesis. The syntax of noun phrases is discussed in §6.1 while the remaining sections cover clause-level syntax. The constituent order of declarative and interrogative sentences is discussed in sections §6.2.1 through §6.2.3 while negation is described in §6.2.4. Clause combining is covered in §6.3: §6.3.1 covers complementation, §6.3.2 concentrates on verb phrases, and §6.3.3 examines coordination in general.

6.1 Noun Phrases

A noun phrase (NP) is a constituent headed by a nominal which behaves as a unit. In the simplest case, it consists of a bare noun, but the head noun can be modified by a number of different elements, giving rise to much more complex structures. A summary of the elements found in Rotokas NPs is provided in Figure 6.1.

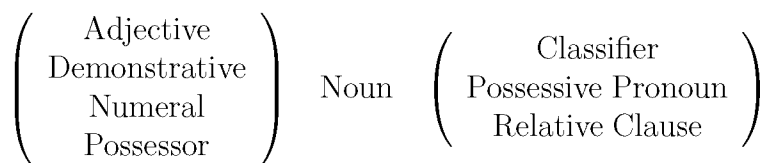


Table 6.1: Elements of the Noun Phrase

6.1.1 Nominals

Instances of a head noun modified by more than one element are rare and difficult to elicit, making investigation of the internal constituency of NPs difficult. Examples of nouns modified by one of the elements in Figure 6.1 are provided in (344) through (350).

6.1.1.1 Demonstrative-Noun

- (344) *sisiarapa-toa irao roo koora-to*
greasy-SG.M true DEM.3.SG.M possum-SG.M
Possum is very greasy.

6.1.1.2 Possessor-Noun

- (345) *vii vaisi-aro kiro-ri*
PRO.2.SG name-POSS write-2SG_β
Write your name.

6.1.1.3 Adjective-Noun

- (346) *vego-a toe-pa-i oira-ra aire-pa kovo-vai=re*
jungle-SG.N cut-CONT-3PL_β man-HUM.PL new-DERIV garden-INDEF=ALL
The men cut the bush for a new garden.

6.1.1.4 Numeral-Noun

- (347) *ora-veera-i eapu kare katai raiva raga=ia voka-oro*
RR-line_up-PRES_α ant CLASS one road only=LOC walk-DEP.SIM
Ants line up and walk in a single line.

6.1.1.5 Noun-Classifier

- (348) *atari pitu-ro ata-pa-i-voi avaka-va=ia ovusia*
fish CLASS-PL.CL swim-CONT-3PL_β-PRES_β ocean-SG.F=LOC while
vo-pitu-ro tue-pa-io-vo
SPEC-CLASS-PL.CL wait-CONT-1PL.EXCL-IP_β
The schools of fish swam in the ocean while we waited for them.

6.1.1.6 Noun-Possessive Pronoun

- (349) *upiriko kovo oave eva vegei avukarei*
sweet_potato garden PPRO.1.DL DEM.3.SG.N PRO.1.DL married_couple
That's the sweet potato garden of us two married people.

6.1.1.7 Noun-Relative Clause

- (350) *tugara-to riro kuukuuvu-to ira oira-ra keakea-pa-re-veira*
spirit-SG.M big lie-SG.M RPRO.3.SG.M man-HUM.PL deceive-CONT-3SG.M_β-HAB
Satan is a big liar who deceives people.

6.1.2 Possession

There are three different strategies for marking possession in a noun phrase in Rotokas: 1) the use of a post-nominal possessive pronoun; 2) the use of a possessive suffix *-aro* on the possessed noun; 3) and the use of a possessive suffix *-aro* on a dummy pronoun, which agrees in person, number, and gender with the possessed noun.

6.1.2.1 Possessive Pronoun

The first strategy for marking possession is the use of a possessive pronoun that agrees with the possessor in terms of person, number, and gender (see Table 4.12 for the full paradigm). The possessive pronoun follows the possessed noun, as illustrated in (351) and (352).

- (351) *oire rera ragi-i-va voeao ovii-irara oaa osa*
okay PRO.3.SG.M whip-3PL_β-RP_β PRO.3.PL.M offspring-HUM.PL PPRO.1.SG as
rera=ia pitu-pa-a-va
PRO.3.SG.M=LOC hold-CONT-1SG_β-RP_β
My children, they whipped him as I held onto him.

- (352) *kepa oaive eva oa vura-pa-ri*
house PPRO.3.PL.M DEM.3.SG.N RPRO.3.SG.N look.at-CONT-2SG_β
That's everybody's house that you're looking at.

Firchow (1987:61) notes that the possessor can also be explicitly indicated by a personal pronoun, in which case it occurs in a prenominal position, as in (353), but I have been unable to find instances of this type of construction in the materials available to me.

- (353) *ragai vaisi-a oaa*
PRO.1.SG name-SG.N POSS.1.SG
my name [Firchow (1987:61)]

This form of possession marking is restricted to animate possessors due to the lack of neuter possessive forms in the possessive pronoun paradigm (see §4.2.3.3).

6.1.2.2 Possession Marking on Possessed Noun

The most common form of possession marking takes the form of the possessive suffix *-aro* on the possessed noun, preceded by the possessor. This form of possession can be described as head-marking, to the extent that the possessed noun functions as the head of the noun phrase. The possession marking in this construction is invariant in form, and does not agree with the possessor in terms of person, number, or gender, as illustrated in (354) and (355).

(354) *Luk vo-kepa-aro pako-pi uvare eru-erao tuuta-ara*
 Luk SPEC-house-POSS slump-SUB because rot-NP_α pole-PL.N
 Luke's house is slumped over because the poles are rotten.

(355) *urio-pa-ta-i ragai vo-kepa-aro=ia tii tapi-sia*
 come-CONT-2PL-PRES_α PRO.1.SG SPEC-house-POSS=LOC tea drink-DEP.SEQ
 Come drink tea at my house.

This form of possession marking is the most common and covers various semantic relations, such as ownership, inalienable possession (body parts), and kinship.

6.1.2.3 Ownership

(356) *Raratuiri vo-kepa-aro goru-vira tou-pa-i-voi*
 Raratuiri SPEC-house-POSS strong-ADV be-CONT-3PL_β-PRES_β
 Raratuiri's house is strong.

6.1.2.4 Inalienable Possession (Body Parts)

(357) *ruruku-vira roko-re-vo uuko-va sovara-aro raga ragai kokoto-aro*
 underwater-ADV enter-3SG.M_β-IP_β water-SG.F above-POSS only PRO.1.SG leg-POSS
pitu-sia
 grab-DEP.SEQ
 He swam just under the surface of the water in order to grab my leg.

6.1.2.5 Kinship

(358) *Rausira avuka-to Siuparai aite-aro*
 Rausira old-SG.M Siuparai father-POSS
 Rausira is old; he is Siuparai's father.

Unlike possession marked by possessive pronouns, it occurs with inanimate possessors, as illustrated in (359) and (360).

(359) *voru-a goru-a-aro vara-epa voo=ia uvare oavu voru ou-pa*
 pay-SG.N strong-SG.N-POSS go_down-RP_α here=LOC because another pay get-DERIV
tupa-piro-pa
 close-RES-RP_α
 The strength of money went down here, because the gold mine (lit., “another money getter”) closed.

(360) *tora-aro tutue pukui riro kaekae-a*
 height-POSS Balbi mountain big long-SG.N
 The height of Mt. Balbi is really great.

Possession is potentially recursive, leading to the left-branching “stacking” of possessors, as illustrated by (361) and (362).

(361) *aikara ava-ra eisi-re ragai vate-va-aro vo-kepa-aro*
 EXCL go-1SG_α LOC=ALL PRO.1.SG friend-SG.F-POSS SPEC-house-POSS
 I will go to my friend’s house. [Cricket and Grasshopper]

(362) *Pita aite-aro vo-kepa-aro-i*
 Peter father-POSS SPEC-house-POSS-?
 Peter’s father’s house [Firchow (1987)]

6.1.2.6 Possession Marking on Dummy Pronoun

Another strategy for marking possession resembles the one previously described in §6.1.2.2 (and should be considered a subtype), except that possession is not marked on the possessed noun itself, but rather on a dummy pronoun, which agrees with the possessed noun in terms of person, number, and gender. This is illustrated for a masculine (*kuvupato* “shirt”), feminine (*torara* “axe”), and neuter (*voría* “money”) possessed noun in (363) through (365), respectively.

(363) *Pita rera-aro kuvu-pa-to pogopogoro-to*
 Peter PRO.3.SG.M-POSS cover-DERIV-SG.M oversized.RDP-SG.M
 Peter’s shirt is oversized.

(364) *irou ragai oira-aro torara ou-vo*
 who PRO.1.SG PRO.3.SG.F-POSS axe get-IP_β
 Who took my axe?

(365) *Samuel, ragai va-aro vorí-a tavarío-ri*
 Samuel, PRO.1.SG PPRO.3.SG.N-POSS money-SG.N exchange-2SG_β
 Samuel, exchange my money.

In (363) through (365), the possessor immediately precedes the dummy pronoun, which in turns immediately precedes the possessed noun. The possessor and dummy pronoun form a syntactic unit, as can be seen in cases where the entire phrase is discontinuous, as in (366) and (367), where the possessor functions as patient/theme and the possessor and dummy pronoun appear on the right periphery.

(366) *peeka eera oira-to ira kuvu-pa-to kaviru-re-vo*
 bad DEM.3.SG.M man-SG.M RPRO.3.SG.M cover-DERIV-SG.M steal-3SG.M_β-IP_β
Pita rera-aro
 Peter PPRO.3.SG.M-POSS
 The man who stole Peter’s shirt was bald.

- (367) *auo sikure=va urio-u ragai oira-aro*
 hey grass_skirt=COM come-2SG_α PPRO.1.SG PPRO.3.SG.F-POSS
 Hey, come here with my grass skirt.

Discontinuous possessive noun phrases of the type found in (366) and (367) also occur in other grammatical roles, as shown by (368) and (369), where a possessed noun functions as an oblique argument and oblique marking occurs on the dummy pronoun rather than the possessed noun itself.

- (368) *karisi-to vigei vara-aro=ia vuri-ara kopii-ro-epa*
 Christ-SG.M PRO.1.PL.INCL PRO.3.PL.N-POSS=LOC bad-PL.N die-3SG.M_α-RP_α
 Christ died for our sins.

- (369) *Rarasori riro vaisi ou-re-voi rera va-aro=ia vearo*
 Rarasori big name get-3SG.M_β-PRES_β PRO.3.SG.M PRO.3.SG.N-POSS=LOC good
kovo
 work
 Robinson has a big name for his good work.

It may seem from examples such as (368) and (369) that this possessive construction is required for possessed oblique arguments, but this is not the case, judging from sentences such as (370) and (371), where a possessed noun plays the role of an oblique argument, and no dummy pronoun is involved.

- (370) *kapu-a eva vii kokoto-aro=ia tou-pa-i*
 sore-SG.N DEM.MED.SG.N PRO.2.SG leg-POSS=LOC be-CONT-3PL_β
 That sore is on your leg.

- (371) *ee rera vo-reo-aro=pa ora-toatoa-pa-u*
 EXCL PRO.3.SG.M SPEC-word-POSS=BEN RR-concede-CONT-2SG_α
 Are you giving in to his talk? [Firchow (1984)]

6.1.3 Quantification

This section covers the various means of quantifying noun phrases in Rotokas. The use of *rutu* “very” as a quantifier is described in §6.1.3.1 and Rotokas numerals are described in §6.1.3.2.

6.1.3.1 Quantifiers

The intensifier *rutu* “very, truly” can be used in a noun phrase as a universal quantifier that has scope over the immediately preceding noun phrase. It occurs with both nouns, as in (372), and pronouns, as in (373) and (374).

(372) *kokootu ruipa-pa-a-veira oira-ra rutu uvare vearopie-a rutu-a*
 chicken want-CONT-3PL_α-HAB man-HUM.PL very because good-SG.N very-SG.N
varu-a
 meat-SG.N
 Everyone (literally: all people) wants chicken because it is good meat.

(373) *voea rutu ora-pugu-pie-pa-a-epa vate-irara agiagi-pa-oro ora*
 PRO.3.PL.M very RR-waste time-CONT-RP_α friend-PL.N greet-CONT-DEP.SIM and
agesi-pa-oro
 laugh-CONT-DEP.SIM
 All of them were busy greeting their friends and laughing.

(374) *vigei rutu tetevu turaa-pa-vi-ei kepa iare*
 PRO.1.PL.EXCL very sago sew-CONT-1PL.EXCL-PRES_α house POST
 All of us are sewing up sago for the house.

When a noun is quantified using *rutu*, case marking appears as an enclitic on the quantifier (rather than on the head noun itself), as illustrated in in (375) and (376). In essence, the case marker marks the right boundary of the noun phrase.

(375) *voki-ara rutu=ia kovo-pa-sia ava-pa-ere*
 day-PL.N very=LOC work-CONT-DEP.SEQ go-CONT-3DL.F
 Every day the two of them went to work. [Caleb, “Matevu”]

(376) *uva vara rutu=va vore-ro-epa*
 so PRO.3.PL.N very=COM go.back-3SG.M_α-RP_α
 He returned with everything. [Firchow and Akoitai (1974:1,10:35)]

6.1.3.2 Numerals

Although the use of Tok Pisin for counting is increasingly widespread among Rotokas speakers, the language does have an indigenous counting system, which is quinary (based on multiples of five), as can be seen in Table 6.2.

Number	Rotokas Term
one	<i>katai</i>
two	<i>erao</i>
three	<i>peva</i>
four	<i>resiura</i>
five	<i>vavae</i>
six	<i>katai vatara</i>
seven	<i>erao vatara</i>
eight	<i>peva vatara</i>
nine	<i>resiura vatara</i>
ten	<i>katai tau</i>
one-hundred	<i>vovoto</i>
one-thousand	<i>tuku</i>
one-million	<i>ipa</i>

Table 6.2: Rotokas Numerals

Note that the term *vavae* “five” is based on the body part term *vavae* “hand”, illustrated in (377) and (378).

(377) *eake-a eva vii vavae-aro=ia*
 what-SG.N PRO.MED.3.SG.N PRO.2.SG hand-POSS=LOC
 What’s that in your hands?

(378) *vavae-ara itoro-pie-i-vo kakae vure uvare voea tavi-e-vo*
 hand-PL.N extend-CAUS-3PL_β-IP_β child FP because PRO.3.PL.M tell-3SG.F_β-IP_β
tisa-va
 teacher-SG.F
 The children raised their hands because the teacher told them to.

Although quite large numbers can be built up using the numerals in Table 6.2, as illustrated in (379), the use of Rotokas numerals is waning, particularly among the younger generation.

(379) *erao tuku resiura vatara vovoto vo-peva tau vavae*
 two 1000 nine hundred SPEC-three ten five
 two-thousand nine-hundred and thirty-five [Firchow (1987:46)]

Although use of Tok Pisin numerals is increasing, particularly among the younger generation, Rotokas numerals are still commonly used for smaller numbers (ten or less), as illustrated in (380) and (381).

(380) *ora-veera-i eapu kare katai raiva raga=ia voka-oro*
 RR-line_up-PRES_α ant FP one road only=LOC walk-DEP.SIM
 Ants line up and walk in a single line.

(381) *vurei-a pura-sia vo-peva upo-i-vo koue kare ora aue kokotu kare*
 feast-SG.N make-DEP.SEQ SPEC-three kill-3PL_β-IP_β pig FP and CONN chicken FP
voo=va atoi-a
 here=ABL village-SG.N
 In order to have a feast, they killed three pigs and also some chickens in the village.

6.1.4 Nominal Conjunction

Before discussing how nominal conjunction works in Rotokas, it is useful to establish some terminology. The marking of coordination differs widely across languages. As Haspelmath (2000) observes, some languages lack an explicit marker of conjunction (asyndetic), others possess some form of explicit marking of conjunction, either on one of the two elements being conjoined (monosyndetic) or both of them (bisyndetic). Rotokas is monosyndetic, as illustrated in (382) and (383).

(382) *Rake ora Jon kaakau kare ou-sia ava-si-e*
 Rake and Jon dog FFP get-DEP.SEQ go-3DL.M-RP_α
 Rake and John went to get the dogs.

(383) *Revoi ora Siariviri tutupie siara rutu*
 Revoi and Siariviri close clan very
 Revoi and Siariviri are members of the same clan.

The coordination of two nouns referring to humans typically involves the use of the particle *vaio* “animate dual”, as can be seen in (384) and (385).

(384) *Visaevi vaio ora Mataila atara-pa-ere-i-ei urua=ia*
 Visaevi ANIM.DL and Mataila sleep-CONT-3DL.F-EPEN-PRES_α bed=LOC
 “Visaevi and Mataila are sleeping together in bed.”

(385) *Ararai kapokaporo-si-voi Visa vaio ora Apoka*
 Ararai carry-3DL.M-PRES_β Visa ANIM.DL and Apoka
 Visa and Apoka are carrying Ararai between their shoulders.

In a cross-linguistic survey of coordination, Haspelmath (2000) observes that the explicit marking of coordination can appear either before the coordinand (prepositive) or after it (post-positive). In Rotokas, coordination marking is prepositive, as can be seen from coordinated noun phrases that are discontinuous, as in (386) and (387), where the second coordinand occurs after the verb with *ora*. Furthermore, (387) demonstrates that the animate dual particle *vaio* is associated with the first coordinand.

(386) *Polin vaio ora-ou-si-e ora Tovisi aruvea*
 Polin ANIM.DL RR-get-3DL.M and Tovisi yesterday
 Polin and Tovisi married yesterday.

(387) *Pita vaio ora-varovaro-raga-pa-si-ei ikau-pa-oro ora Raku*
 Pita ANIM.DL RR-compete-only-CONT-3DL.M- run-CONT-DEP.SIM and Raku
 Peter and Raku competed against each other running.

Some additional examples of what appears to be the same construction type as (386) are provided in (388) and (389).

(388) *Riopeiri arao-rei ora Vaviata ava-si-e eisi Buka*
 Riopeiri brother-DL.CL and Vaviata go-3DL.M-IP_α LOC Buka
 The brothers Riopeiri and Vaviata went to Buka.

(389) *Jon vaio evaiterei ora Raki aiterea urio-pa-si-ei*
 Jon ANIM.DL DEM.MED.DL.M and Raki RPRO.3.DL.M come-CONT-3DL.M-PRES_α
 John and Raki slept.

6.2 Intraclausal Syntax

This section covers various aspects of intraclausal (i.e., clause-internal) syntax, such as the basic ordering of constituents, the difference between declarative and interrogative word order, and negation.

6.2.1 Constituent Order

Firchow (1973:x-xi) provides three templates for what he labels “basic sentences”, which are provided in (390) (where parentheses indicate optional elements—i.e., elements that can be elided when contextually retrievable).¹

(390) INTRANSITIVE (Time) (S) (Location) (Verb) (Adverb) Verb
 TRANSITIVE (Time) (A) O Verb (Adverb) (Verb) (Location)
 DITRANSITIVE (Time) (A) IO O Verb (Adverb) (Location)

The constituent order provided in (390) represent the typical ordering of elements but alternative orderings of these elements are permissible. For example, the time word (or phrase) occurs sentence-initially in (391), as predicted by (390), but not in (392), where it occurs after the intransitive subject.

¹Firchow (1973) uses the undifferentiated term ‘Subject’, which have been replaced with S and A in (390) for the sake of consistency with the terminology used to describe grammatical roles in §7.3.2.

(391) *koke-va voki-ara rutu=ia kove-pa-o-i*
 rain-SG.F day-PL.N very=LOC fall-CONT-3SG.F_α-PRES_α
 It rains every day. [Firchow (1984)]

(392) *aveke=ia ora-tuguru-ra-e voki-aro eisi raiva*
 stone=LOC RR-bump-1SG_α-IP_α night LOC road
 I bumped into a rock at night on the road.

The distinction between arguments and adjuncts (see §7.3.2) goes a long way towards explaining the constituent ordering principles of Rotokas. Arguments are more restricted in their ordering whereas adjuncts are fairly free. For example, manner adverbs can in fact occur in any of the logically possible positions of an intransitive or transitive clause. Therefore, all of the intransitive sentences in (393) are grammatical, as are the transitive sentences in (394).

(393) a. *oira-to tori-re-va gapu-vira*
 man-SG.M run_away-3SG.M_β-RP_β naked-ADV
 The man ran away naked.

b. *oira-to gapu-vira tori-re-va*
 man-SG.M naked-ADV run_away-3SG.M_β-RP_β
 The man ran away naked.

c. *gapu-vira oira-to tori-re-va*
 naked-ADV man-SG.M run_away-3SG.M_β-RP_β
 The man ran away naked.

(394) a. *oirato koie kaviru-re-vo ikau-vira*
 man-SG.M pig steal-3SG.M_β-IP_β quick-ADV
 The man quickly stole the pig.

b. *oira-to koie ikau-vira kaviru-re-vo*
 man-SG.M pig quick-ADV steal-3SG.M_β-IP_β
 The man quickly stole the pig.

c. *oira-to ikau-vira koie kaviru-re-vo*
 man-SG.M quick-ADV pig steal-3SG.M_β-IP_β
 The man quickly stole the pig.

d. *ikau-vira oira-to koie kaviru-re-vo*
 quick-ADV man-SG.M pig steal-3SG.M_β-IP_β
 The man quickly stole the pig.

Core arguments, however, follow more strict principles. The transitive template is illustrated for a transitive verb in (395), where its core arguments, A and O are *oirato* “man” and *koie* “pig”, respectively.

(395) *oirato koie upo-re-vo*
 man-SG.M pig hit-3SG.M_β-IP_β
 The man hit the pig.

Although it is also possible for the subject to occur postverbally, as illustrated by (396), other logically possible orderings are ungrammatical on the intended reading.²

(396) *koie upo-re-vo oirato*
 pig hit-3SG.M_β-IP_β man-SG.M
 The man hit the pig.

All other logically possible ordering are ungrammatical: VAO, as in (397a); VOA, as in (397b); OAV, as in (397c); and AVO, as in (397d).

(397) a. * *uporevo oirato riakova*
 b. * *uporevo riakova oirato*
 c. * *riakova oirato uporevo*
 d. * *oirato upo-re-vo riako-va*
 man-SG.M hit-3SG.M_β-IP_β woman-SG.F
 The man hit the woman.

The constituent order of objects is strict compared to that of subjects, with objects occurring in a fixed preverbal position, as illustrated in (398).

(398) *oirato vuri-va kaakau upo-pa-re-voi*
 man-SG.M bad-SG.F dog hit-CONT-3SG.M_β-PRES_β
 The man is hitting the bad dog.

Although the position of O must be filled, it is possible for it to be discontinuous. Compare (399) with (400), where the NP *vuriva kaakau* “bad dog” is split: *vuriva* “bad” precedes the verb and *kaakau* “dog” follows it.

(399) *oirato vuri-va kaakau upo-pa-re-voi*
 man-SG.M bad-SG.F dog hit-CONT-3SG.M_β-PRES_β
 The man is hitting the bad dog.

(400) *oirato vuri-va upo-pa-re-voi kaakau*
 man-SG.M bad-SG.F hit-CONT-3SG.M_β-PRES_β dog
 The man is hitting the bad dog.

²If A and O have the same features for person, number, and gender, a change in word order may result in a reversal of meaning rather than ungrammaticality.

6.2.2 Displacement of O

Although objects cannot freely move from their preverbal position, there are possibilities for right-displacement to a post-verbal position, although they are subject to syntactic constraints. Pronominal objects must occur preverbally in situ, whereas full NP (i.e., non-pronominal) objects can be dislocated to a postverbal position, either in part, as in (401), or in full, as in (402).

(401) *oira-to vuri-va upo-pa-re-voi kaakau*
 man-SG.M bad-SG.F hit-CONT-3SG.M_β-PRES_β dog
 The man is hitting the bad dog.

(402) *oira-to aue upo-pa-re-voi vuri-va kaakau*
 man-SG.M CONN hit-CONT-3SG.M_β-PRES_β bad-SG.F dog
 The man is hitting the bad dog.

When the entire NP is right-dislocated, the word *aue* (glossed as CONN for connector) occurs as a trace of the right-dislocated argument canonical position. It does not occur, however, when there is a modifier to the right dislocated noun that can be stranded in the canonical position, as shown by the ungrammaticality of (403) and (404).

(403) **oira-to vuri-va aue upo-pa-re-voi kaakau*
 man-SG.M bad-SG.F CONN hit-CONT-3SG.M_β-PRES_β dog
 The man is hitting the bad dog.

(404) **oira-to aue vuri-va upo-pa-re-voi kaakau*
 man-SG.M CONN bad-SG.F hit-CONT-3SG.M_β-PRES_β dog
 The man is hitting the bad dog.

Not all noun phrases behave the same way when right-displaced. Pronouns cannot be right-displaced and right-displaced classifiers behave somewhat differently from right-displaced common nouns. The noun and its associated classifier function as a unit (a classifier phrase), and right displacement requires the movement of the entire phrase, as shown in (405) and (406), and it is possible (though not obligatory) for the classifier to occur twice, as illustrated in (407).

(405) *oira-to takura isi aio-re-va*
 man-SG.M egg CLASS eat-3SG.M_β-RP_β
 The man ate an egg.

(406) *oira-to aue aio-re-va takura isi*
 man-SG.M CONN eat-3SG.M_β-RP_β egg CLASS
 The man ate an egg.

- (407) *oira-to aue isi aio-re-va takura isi*
 man-SG.M CONN CLASS eat-3SG.M_β-RP_β egg CLASS
 The man ate an egg.

If a right-displaced argument consists of two coordinated noun phrases, the coordinated noun phrase is optionally preceded by *aue*.

- (408) *oira-to aue vori-re-vo torara ora sigo-a*
 man CONN buy-3SG.M_β-IP_β axe and knife-SG.N
 The man bought an axe and a machete.

- (409) *oira-to aue vori-re-vo torara ora aue sigo-a*
 man-SG.M CONN buy-3SG.M_β-RP_β axe and AUE knife-SG.N
 The man bought an axe and a machete.

The use of *aue* for right displacement of constituents is not limited to objects but appears to extend to oblique arguments, as well, as illustrated by some of the following sentences.

- (410) *rotokasi-pa-irara aue=pa ruipa-pa-a-veira kaukau*
 Rotokas-DERIV-HUM.PL CONN=BEN want-CONT-3PL_α-HAB sweet_potato
 The Rotokas like sweet potatoes.

When the right-displaced argument is normally case-marked, the case-marking occurs on *aue*. If the right-displaced noun phrase is a complex coordinated noun phrase, the case-marking is optional on the coordinated noun phrase.

- (411) *rotokasi-pa-irara aue=pa ruipa-pa-a-veira kaukau ora sioko*
 Rotokas-DERIV-HUM.PL CONN=BEN want-CONT-3PL_α-HAB sweet potato and chayote
 The Rotokas like sweet potatoes and chayote.

- (412) *rotokasi-pa-irara aue=pa ruipa-pa-a-veira kaukau ora aue*
 Rotokas-DERIV-HUM.PL CONN=BEN want-CONT-3PL_α-HAB sweet potato and CONN
sioko
 chayote
 The Rotokas like sweet potatoes and chayote.

- (413) *rotokasi-pa-irara aue=pa ruipa-pa-a-veira kaukau ora*
 Rotokas-DERIV-HUM.PL CONN=BEN want-CONT-3PL_α-HAB sweet potato and
aue=pa sioko
 CONN=BEN chayote
 The Rotokas like sweet potatoes and chayote.

Right displacement of constituents is fairly common and occurs in other contexts, as well. Some examples are provided in (414) and (415) (see also §6.1.2.6).

(414) *Rita vearopie-a=ia aasii-pa-o-i aasii ua*
 name pretty-SG.N=LOC wear_beads-CONT-3SG.F_α-PRES_α bead CLASS
 Rita puts on pretty beads. [Firchow (1984)]

(415) *Kate siopu-a=ia sisii-pa-o-i Pita va-aro*
 Kate soap-SG.N=LOC wash-CONT-3SG.F_α-PRES_α Peter PRO.3.SG.N-POSS
 Kate washed with Peter's soap.

6.2.3 Interrogatives

Yes-no questions in Rotokas do not differ in form from statements. Content questions are formed by replacing the questioned constituent with a question word (wh-word). Question words occupy a sentence-initial position, as illustrated in (416) and (417).

(416) *apeisi ora-siovo-pa-u vovokio*
 how RR-feel-CONT-2SG_α today
 How do you feel today?

(417) *auo ovu iare ava-pa-u-ei*
 hey where POST go-CONT-2SG_α-PRES_α
 Hey, man, where are you going?

As can be seen from (417), question words can be morphologically modified in the same way as other nouns. For example, the question words *eake* “what” and *ovu* “where” both occur with the enclitic =*re* in (418) and (419).

(418) *eake=re tara-pa-ri*
 what=ALL look_for-CONT-2SG_β
 What are you looking for? [Firchow and Akoitai (1974:52)]

(419) *ovu=re ava=pa -u-ei*
 where=ALL go-CONT-2SG_α-PRES_α
 Where are you going?

The suffix *-pa* occurs with the question word *eake* “what” in order to form questions of reason, cause, or motive, as illustrated in (420) and (421). In such questions, *eake* sometimes co-occurs with the indefinite suffix *-vai*, as illustrated in (422).

(420) *eake=pa koikoi-pa-ri*
 what=BEN groan-CONT-2SG_β
 Why are you groaning?

(421) *eake=pa vii upo-re-vo*
 what=BEN PPRO.PER.2.SG strike-3SG.M_β-IP_β
 Why did he hit you?

(422) *eake-vai-pa voeao riako-va tova-pa-i*
 what-INDEF=BEN DEM.PROX.PL.M woman-SG.F bury-CONT-3PL_β
 Why are they burying the woman? [Firchow and Akoitai (1974:27)]

Question words in some cases appear as other parts of speech, as illustrated in (423), where the question word *apeisi* “what, how” functions as a verb, occurring with the causative suffix *-pie*.

(423) *ovu=ia apeisi-pie-pa-i-voi*
 where=LOC how-CAUS-CONT-3PL_β-PRES_β
 They’re doing it where why? [Firchow, 1974: 69]

6.2.4 Negation

Negation in Rotokas is expressed by means of the negator *viapau* “not/nothing”. In a simple intransitive clause, negation precedes the verb, as in (424). It is questionable whether negation can follow the verb, as in (425). While a minority of speakers judge such sentences as grammatical, they are nevertheless unattested in the materials available to the author.

(424) *viapau roru-a-voi*
 NEG happy-1SG_β-PRES_β
 I am not happy.

(425) ? *roru-a-voi viapau*
 happy-1SG_β-PRES_β NEG
 I am not happy.

In simple transitive sentences, negation must precede the verb, but can either occur before the object, as in (426), or immediately preceding the verb, as in (427).

(426) *viapau vii too-a*
 NEG PRO.2.SG hit-1SG_β
 I won’t hit you.

(427) *vii viapau too-a*
 PRO.2.SG NEG hit-1SG_β
 I won’t hit you.

Negation cannot follow the verb, and (428) would therefore be ungrammatical.

- (428) * *vii* *too-a* *viapau*
 PRO.2.SG hit-1SG_β NEG
 I won't hit you.

There is another form of negation that takes an entire clause, or sentence, in its scope. It involves the use of *viapau* with the complementizer *oisio* at the left periphery of the clause/sentence (see also §6.3.1).

- (429) *Kare uvagi-to viapau oisio ra reo-ara-vai uvu-pa-re-ve ari*
 Kare deaf-SG.M NEG COMP and word-PL.N-INDEF hear-CONT-3SG.M_β-SUB but
gisipo raga=va situe-pa-re-vere
 mouth only=COM watch-CONT-3SG.M_β-?
 Kare, the deaf, he doesn't hear talk, but he can read lips.

- (430) *eaviova viapau oisio Timoti voo urio-ro-e*
 EXCL NEG COMP Timothy here come-3SG.M_α-IP_α
 No, Timothy isn't coming here.

Constituent negation is also accomplished by means of *viapau*. This involves the use of *viapau* immediately preceding the negated constituent, whether it is a noun, as in (431), or a pronoun, as in (432).

6.2.4.1 Noun

- (431) *akuku-a viapau oavuavu-vai voo-ia*
 empty-SG.N NEG something-INDEF here=LOC
 It's empty, there's nothing (literally: isn't something) here.

6.2.4.2 Pronoun

- (432) *viapau rutu iria-vu uvui-pa-o-i ra upe ua*
 NEG very PPRO.3.SG.F-ALT be_able-CONT-3SG.F_α-PRES_α and Upe CLASS
situe-pa-e-ve
 look_at-CONT-3SG.F_β-SUB
 No woman is able to look at the Upe wearers. [Firchow (1974b:23)]

6.3 Interclausal Syntax

This section covers a few aspects of interclausal (i.e., between-clause) syntax—that is, the syntax of clause combining. Complementation is discussed in §6.3.1; the syntax of verb phrases is covered in §6.3.2; and the syntax associated with combinations of larger clausal units (up to and including sentences) is covered in §6.3.3.

6.3.1 Complementation

This section looks at complementation, which can be described as “the syntactic situation that arises when a notional sentence or predication is an argument of a predicate” (Noonan, 1985). There are a number of predicates that license full clause arguments.

For example, the verb *tavi* “tell” can take an entire clause as an argument, in which case it is marked by the particle *oisio* “as”, as illustrated in (433), where the complement clause reports an impending event; in (434), where the embedded clause is direct speech; and in (435), where the embedded clause consists of a non-verbal predicate.

- (433) *oirao-pa-vira visii tavi-pa-a-voi oisio kansol urio-pa*
 true-DERIV-ADV PRO.2.PL tell-CONT-1SG_β-PRES_β COMP council -CONT
vigei=pa reo vate-sia
 PROG.1.PL.INCL talk give-DEP.SEQ
 I tell you truthfully that the council is coming to talk to us.

- (434) *Vare igei tavi-re-vo oisio o-vuuta-vu epao oa=ia*
 Vare PRO.1.PL.EXCL tell-3SG.M_β-IP_β COMP ALT-time-ALT ∃ RPRO.3.SG.N=LOC
vore-ra-vere visii keke-sia
 return-1SG_α-NF PRO.2.PL see-DEP.SEQ
 Vare told us that on another occasion, I will come back to see you guys.

- (435) *vii tavi-pa-a oirao-pa-vira oisio vori-a-aro vuri-to kopi-a*
 PRO.2.SG tell-CONT-1SG_β true-CONT-ADV COMP buy-SG.N-POSS bad-SG.M die-SG.N
raga
 only
 I tell you truly that the wages of sin is death.

In some cases, the complement clause is marked only by *oisio*. However, in other cases, *oisio* co-occurs with the coordinator *ra*. This is primarily restricted to cases where the meaning of the verb *tavi* is “to instruct” or “to tell”—i.e., directive or jussive contexts.

- (436) *Rutu Siko tavi-e-voi oiso ra raverave-vira rarau ua pore-e-ve*
 Rutu Siko tell-3SG.F_β-PRES_β COMP and weaken.RDP- flower CLASS turn-3SG.F_β-SUB
 Ruth told Siko to gently bend the flower.

- (437) *kakae-to tavi-e-voi aako-va oiso ra goro-ara sii-ere-ve*
 child-SG.M tell-3SG.F_β-PRES_β mother-SG.F COMP and snot-PL.N wipe-3DL.F-SUB
 Mother is telling the child that they should wipe away the snot.

The co-occurrence of *oisio* and *ra* is not specific to the verb *tavi* or to complementation, since *oisio* and *ra* co-occur outside of the context of complementation, as in (438) through (440).

- (438) *eto tara-pa-ro-e* *Siape oisio ra eto kasi-ro*
 fire seek-CONT-3SG.M_α-IP_α Siape COMP and fire burn-3SG.M_α
 Siape was searching for fire in order to make a fire.
- (439) *Samuel=ia vootu-a-epa oisio ra voea=pa tore-pa-ro eisi*
 Samuel=LOC vote-3PL_α-RP_α COMP and PRO.PL.M=BEN stand_up-CONT-3SG.M_α LOC
pareveri
 parliament
 They voted for Samuel in order for him to stand up in parliament.
- (440) *Ruben sikuru-sia ava-ro-e eisi sikuru-a oisio ra tarai-a-vai*
 Ruben school-DEP.SEQ go-3SG.M_α- LOC school-SG.N COMP and learn-SG.N-INDEF
ou-re-ve
 get-3SG.M_β-SUB
 Ruben went to school so that he would obtain knowledge.

On the basis of examples such as (436) or (437), one might conclude that *oisio ra* has a purposive meaning, and that the common thread between the various usages is purposive semantics. However, there are clearly instances where the first clause and the second clause are conjoined with *oisio ra* but the situation described does not display clear purposive semantics—i.e., it would be difficult to interpret a sentence such as (441) with a purposive reading (hence the strangeness of a gloss such as "Raki is unconscious with the purpose of dying").

- (441) *Raki kokopeko-pa-ro-i* *oisio ra kopii-ro*
 Raki unconscious.RDP-CONT-3SG.M_α-PRES_α COMP and die-3SG.M_α
 Raki is unconscious and about to die.

The conjunction *ra* also occurs by itself, without *oisio*, as illustrated in (442) and (443).

- (442) *tupa kapu-pie-a goru-vira rutu ra viapau ira-i va*
 door tight-CAUS-1SG_β strong-ADV very and NEG RPRO.3.SG.N-? PRO.3.SG.N
karu-re-ve
 open-3SG.M_β-SUB
 I close the door very strongly and nobody can open it.
- (443) *aue koetaova-pa-re aite-to ra ora-tuutuuko-a-ve*
 hey arrange_marriage-CONT-3SG.M_β father-SG.M and RR-repay-3PL_α-SUB
riako-rirei=ia
 woman-DL.F=LOC
 Hey, father arranged things and they will make a payment exchange for the two women.

For a general overview of clause combining in Rotokas, and further discussion of *ra*, see §6.3.3.

6.3.2 Verb Phrases

There are two constructions that involve more than one verb in a clause without explicit coordination in the form of a coordinator such as *ora*: dependent verbs (previously discussed in §5.2.2.5) and aspectual verbs.

6.3.2.1 Dependent Verbs

In §5.2.2.6, two patterns of inflection were described: independent and dependent. Independent verbs are fully inflected for person, number, and gender as well as tense, aspect, and mood whereas dependent verbs are inflected for neither. The order of independent and dependent verb relative to one another is fairly flexible. Although independent verbs generally precede dependent verbs, as in (444), the reverse situation is also found, as in (445).

(444) *toupievira urio-ra-vere* *vii* *keke-sia*
 still come-1SG_α-NF PRO.2.SG see-DEP.SEQ
 I will still come to see you.

(445) *vii* *keke-sia* *vore-pa-ra-i* *vokipavira*
 PPRO.2.SG see-DEP.SEQ return-CONT-1SG_α-PRES_α tomorrow
 I'll return to see you tomorrow.

The subject is the only argument that is necessarily shared between the independent verb of a clause and any dependent verbs. Co-reference between two non-subjects requires the use of a pronoun, as in (446) and (448), where the patient/theme of the independent verb is co-referential with the patient/theme of the dependent verb and the independent verb's patient/theme is realized as a full NP while the dependent verb's patient/theme takes the form of a coreferential pronoun.

(446) *poris-irara* *oira-to* *ou-i-voi* *rera* *tuuke-sia* *uvare*
 police-HUM.PL man-SG.M get-3PL_β-PRES_β PPRO.3.SG.M lock.up-DEP.SEQ because
riako-va *kopii-pie-re-vora*
 woman-SG.F die-CAUS-3SG.M_β-PRES_β
 The police are getting the man to jail him because he killed a woman.

(447) *Raviata Terita ruvaru-re-voi* *rera* *aavito-oro*
 Raviata Terita treat.with.medicine-3SG.M_β-PRES_β PRO.3.SG.M cure-DEP.SIM
 Raviata treated Terita with medicine, curing him.

Argument sharing does not occur, even between multiple dependent verbs with the same patient/theme, as in (448), where the object of the dependent verb *peopeopaoro* is coreferential with the object of the dependent verb *vikipiesia* (i.e., realized as a coreferential pronoun in its second occurrence as a direct object rather than simply being shared by the two verbs).

- (448) *oira-to peopeo-pa-oro utu-a-e rera viki-pie-sia*
 man-SG.M push-CONT-DEP.SIM follow-3PL_α-IP_α PPRO.3.SG.M fall-CAUS-DEP.SEQ
eisi uuko vaga-pa
 LOC water fall-DERIV
 They followed behind the man pushing him in order to make him fall off the waterfall.

6.3.2.2 Aspectual Verbs

The verb roots *rovo* “start, precede” and *ovoi* “finish” both take a single argument and show α agreement by default, as can be seen in (449) and (450).

- (449) *vosia parura-to rovo-pa-ro ra rera rata aue=ia*
 if blister-SG.M start-CONT-3SG.M_α and PPRO.PER.3.SG.M heat_up CONN=LOC
viivi=ia
 betel_nut_husk=LOC
 If a blister starts, heat it up with a betel nut husk.

- (450) *ovoi-ra-i ari riro-vira rutu aio-a-voi uva vukuu-ra-i*
 finish-1SG_α-PRES_α but big-ADV very eat-1SG_β-PRES_β and fill_up-1SG_α-PRES_α
 I’m finished but I ate a lot and I filled up.

These verbs also serve to provide aspectual information in a clause, in which case they are able to co-occur either with a bare verb stem, as in (451), or with a dependent verb, as in (452).

- (451) *Ibu iava aapaapau rovo-ro-epa*
 Ibu POST visit start-3SG.M_α-RP_α
 He came first from Ibu to visit.

- (452) *koko-a rovo-pa-i karu-pa-oro*
 flower-SG.N start-CONT-PRES_α open-CONT-DEP.SIM
 The flower is starting to open up.

The form of verbal agreement found on aspectual verbs is dependent upon the classification of the verb with which they co-occur. Aspectual verbs are α if they occur alone, as already seen in (449) and (450) or if they occur with a dependent verb, as in (453).

- (453) *ragai rovo-pa-ra-i kiro-pa-oro vukua=ia*
 PPRO.PER.1.SG start-CONT-1SG_α-PRES_α write-CONT-DEP.SIM book=LOC
 I am starting to write in the book.

However, when aspectual verbs occur with bare verb stems, they take the form of agreement dictated by the bare verb stem. If the aspectual verb occurs with a bare α verb stem, it will show its usual classification, as illustrated in (454) and (455).

(454) *Tesia avai-o-va iria kavau rovo-o-ra*
 Tesia first_born-SG.F RPRO.3.SG.F be_born start-3SG.F $_{\alpha}$ -DP $_{\alpha}$
 Tesi the first-born was born first.

(455) *voea rutu koova rovo-pa-a-vere pupi-pa-oro*
 PRO.3.PL very sing_and_dance start-CONT-3PL $_{\alpha}$ -NF play_pipe-CONT-DEP.SIM
 All of them will start dancing, blowing the pipes and singsing. [Firchow (1984)]

However, the aspectual verb shows β agreement when it occurs with any verb root or stem that shows β agreement—for example, a bare verb root, such as the monovalent verb root *tou* “be” in (456); a labile verb root that takes a direct object, such as *aio* “eat” in (457); and a causative verb stem, such as *atepie* “make wait” in (458).

(456) *oire uva rera=re voreri-vira keera-a-epa roo ira*
 okay and PRO.3.SG.M=ALL return-ADV call-3PL $_{\alpha}$ -RP $_{\alpha}$ DEM.3.SG.M RPRO.3.SG.M
voosi-vira tou rovo-pa-re-ve
 blind-ADV be start-CONT-3SG.M $_{\beta}$ -HAB
 So for the second time they called the man who had been blind [John 9:24]

(457) *Rarairi varu-ara=ia ovoi-pa-ro-i uvare upiriko-ara aio*
 Rarairi meat-PL.N=LOC finish-CONT-3SG.M $_{\alpha}$ -PRES $_{\alpha}$ because sweet.potato-PL.N eat
rovo-re-voi
 start-3SG.M $_{\beta}$ -PRES $_{\beta}$
 Rarairi is last when it comes to the meat because he started eating sweet potato.

(458) *oira-to ate-pie rovo-ri osia kovo-re-ve*
 man-SG.F wait-CAUS precede-2SG $_{\beta}$ as work-3SG.M $_{\beta}$ -SUB
 Wait for the man while he works.

6.3.3 Coordination

Coordination in Rotokas is accomplished by means of various particles discussed previously in §4.2.9. The most basic form of coordination (that is, the coordination of non-clausal constituents—nouns, adverbs, verbs) is accomplished by means of the conjunction *ora*, which is illustrated in (459), where two nouns are coordinated; in (460), where two oblique adjuncts are coordinated; in (461), where two adverbs are coordinated; in (462), where two temporal nouns are coordinated; and in (463), where two dependent verbs are coordinated.

6.3.3.1 Coordination of NPs

(459) *sigo-a ora torara oarea vearo-vira tou-pa-i*
 knife-SG.N and axe RPRO.3.PL.N good-ADV be-CONT-3PL $_{\beta}$
 The knife and the axe, they are fine.

6.3.3.2 Coordination of Obliques

- (460) *avaraosi kare oea voo tou-pa-i-veira*
type_of_grasshopper FP RPRO.3.PL.M here be-CONT-3PL_β-HAB
tego-ara=ia ora vo-garavesi-ara=ia tapo
wild.banana-PL.N=LOC and SPEC-pandanus-PL.N=LOC also
Avaraosi grasshoppers, they live on wild banana and also on pandanus.

6.3.3.3 Coordination of Adverbs

- (461) *kaakauko kore kare iava oira iria iava vara ua*
type_of_beetle insect FP POST PPRO.3.SG.F RPRO.3.SG.F POST body CLASS
vurivuri-vira ora kaapo-vira tou-pa-i-veira
brown-ADV and white-ADV be-CONT-3PL_β-HAB
The bodies of kaakavuko insects are brown and white.

6.3.3.4 Coordination of Temporal Nouns

- (462) *kaku-va iria gau-pa-e-veira ovaiaro-vi ora avitoava*
frog-SG.F RPRO.3.SG.F cry-CONT-3SG.F_β-HAB evening-DIM and afternoon
The frog cries in the afternoon and at night.

6.3.3.5 Coordination of Dependent Verbs

- (463) *avata-pa-to tugara-to ira oisioa keera-pa-i-ve*
spirit_house-DERIV-SG.M ghost-SG.M RPRO.3.SG.M always beckon-CONT-3PL_β-SUB
upo pura-pa-sia ora aio kovo-ro pura-pa-sia
war make-CONT-DEP.SEQ and food garden-PL.CL make-CONT-DEP.SEQ
The ghosts of the spirit house always call to make war and to make gardens.

Whereas *ora* is primarily used to conjoin noun and verb phrases, *ra* (an apparent phonological reduction of *ora*) is used to conjoin clauses. Loosely speaking, it functions to conjoin clauses that are tightly connected (see previous discussion in §6.3.1). This includes conditionals and complement clauses as well as quasi-conditional clauses, where there is some sort of causal dependency between the first clause and the second, such as (464) or (465). In both cases, the first clause is an imperative and the second clause is a description of the state of affairs that will result if the addressee accomplishes the action encouraged by the imperative.

- (464) *ao-a rukue-ri ra aviavi-ve*
light-SG.N turn_on-2SG_β and shine-SUB
Turn on the light and it will shine.

(465) *sipito, oira-ra oara rutu areii-ri ra vearo-vira*
 chief man-HUM.PL RPRO.3.PL.M very organize-2SG_β and good-ADV
kareke-a-ve
 appear-3PL_α-SUB
 Chief, organize all the people and they will look good.

Sentences such as (464) and (465) are very similar to conditionals, in which the protasis (if-clause) and apodosis (then-clause) are conjoined by *ra*, as illustrated in (466) and (467).

(466) *vosia kakae-to gau-pa-re-ve ra rera tavi-pa-e-ve*
 if child-SG.M cry-CONT-3SG.M_β-SUB and PPRO.3.SG.M tell-CONT-3SG.F_β-SUB
aako-va oisio tape
 mother-SG.F COMP shush
 If a boy cries, his mother will tell him to be quiet.

(467) *vosia Erava poko-viro ra vigei rutu raku-e-ve voo Togarao*
 if Balbi erupt-RES and PPRO.1.PL.INCL very cover-3SG.F_β-SUB here Togarao
 If Mt. Balbi erupts, it will cover all of us here in Togarao.

There is another conjunction found in Rotokas, *uva*, which is used exclusively for conjunction at the sentential level. It is typically found in topic chains, where numerous sentences sharing a single topic are strung together in sequential order, as exemplified in (468) and (469).

(468) a. *riro kaekae-vira pau-ra-e*
 big long.RDP-ADV sit-1SG_α-IP_α
 I sat down for a long time

b. *uva asisoe-ra-i*
 and sore-1SG_α-PRES_α
 and I'm sore.

(469) a. *ragai vaisi-i-vo oiso pirati kaviru-a-vo Siku oira-aro*
 PRO.1.SG call-3PL_β-IP_β COMP peanut steal-3PL_α-IP_α Siku PRO.3.SG.F-POSS
 They called me out as I stole Siku's peanuts.

b. *uva ragai kotu-i-voi oira=pa*
 and PRO.1.SG court-3PL_β-PRES_β PRO.3.SG.F=BEN
 and they took me to court for it

c. *uva ragai=pa roroveara-ro-e Sepiri*
 and PRO.1.SG=BEN clarify-3SG.M_α-IP_α Sepiri
 and Sepiri straightened things out for me.

- d. *uvare vegei rutu tou-pa-ve-vorao*
 because PRO.1.DL very be-CONT-1DL-NP_β
 because the two of us were both there.

In both (468) and (469), there happens to be a causal relationship between the clauses conjoined with *uva*, but this does not seem to be a necessary condition, judging from sentences such as (470), where there is no causal relationship between the first clause and the second one conjoined with *uva* (i.e., the fact that a particular individual was in reality beaten up did not cause the misapprehension that he had been pelted with stones).

- (470) *vavae vuvuko=ia rera tatu-re-vo uva kea-a-e oiso*
 hand fist=IA PRO.3.SG.M beat-3SG.M_β-IP_β and think_mistakenly-3PL_α-IP_α COMP
aveke=ia rera tatu-re
 stone=LOC PRO.3.SG.M beat-3SG.M_β
 He hit him with his fists and they thought mistakenly that he hit him with a stone.

Although sentences conjoined by *uva* typically share a subject, subject-sharing is not a strict necessity, as shown by (471), where co-reference occurs between the patient in (a) and the (notional) possessor in (b), or (472), where the subject of (a) and (b) are distinct individuals.

- (471) a. *Raki aau-pie-re-vo ravireo*
 Raki blinded_by_light-CAUS-3SG.M_β-IP_β sun
 The sun blinded Raki
- b. *uva osirei-to voosi-ro-e*
 and eye-SG.M be_blind-3SG.M_α-IP_α
 and his eyes are blind.
- (472) a. *Sipi asige-o-e*
 Sipi sneeze-3SG.F_α-IP_α
 Sipi sneezed
- b. *uva oisio pura-o-e Vitera pauto-vi virako-pa-re*
 and COMP say-3SG.F_α-IP_α Vitera God-DIM bless-CONT-3SG.M_β
 and Vitera said bless you

The conjunction *uvare* “because” is potentially analyzed morphologically as *uva* plus the enclitic *=re*, perhaps via the goal semantics associated with the enclitic (see Figure 4.3). There is, however, a risk of engaging in confabulation when reading too much into cases of similarity in form when a language possesses a phonemic inventory as small as that of Rotokas (especially when it is known to have arisen by collapsing voicing distinctions—cf. §3.1.2), and in this thesis *uvare* is cautiously treated as a single unanalyzed form.

(473) *gae-o-e revasi-va oira-to iava uvare rera toe-i-vo*
 run-3SG.F_α-IP_α blood-SG.F man-SG.M POST because PPRO.3.SG.M cut-3PL_β-IP_β
 The man's blood ran because they cut him.

(474) *tarausisi ragai=ia garo-pa-ro-e uvare riro-toa*
 trousers PPRO.1.SG=LOC loose-CONT-3SG.M_α-IP_α because big-SG.M
 The trousers were loose on me because they're big.

Another coordinator that appears to be derived from *uva* is *ovusia* “while”, which is illustrated in (475) and (476).

(475) *oira-to reoreo-pa-ro-e ovusia viovoko-pa-irara rera*
 man-SG.M talk.RDP-CONT-3SG.M_α-IP_α while teenage-DERIV-HUM.PL PPRO.3.SG.M
gori-pie-pa-i-vo vuri reo-ro raga pura-pa-oro
 turn_from-CAUS-CONT-3PL_β-IP_β bad word- only make-CONT-DEP.SIM
 The man talked while the teenagers just talked back with bad talk.

(476) *Rorisi agara-pie-e-voi Kepi ovusia ito-va ou-pa-e*
 Rorisi be.startled-CAUS-3SG.F_β-PRES_β Kepi while banana-SG.F get-CONT-3SG.F_β
 Kepi startled Rorisi while she was getting a banana.

The particle *teapi* is used to conjoin a clause that describes an undesirable situation of some sort. Such clauses have been variously labelled in the literature as “apprehensional” (Dixon, 1977) or “timitive” (Palmer, 2001:22). In Rotokas, they are associated with the subjunctive mood (see §5.2.2.7.2).

(477) *avuki-vira monia tovo-a-vo benk=ia teapi va kaviru-i-ve*
 secure-ADV money put-1SG_β-IP_β bank=LOC lest PPRO.3.SG.N steal-3PL_β-SUB
 I am putting money in the bank so that they don't steal it.

(478) *roe-vira koie kuvu-ro tovo-ri teapi kaakau vara aio-e-ve*
 above-ADV pig CLASS-PL.N put-2SG_β lest dog PPRO.3.PL.N eat-3SG.F_β-SUB
 Put the pig-filled bamboo containers above so that the dogs don't eat them.

There is another particle, *ari*, used to conjoin clauses whose meaning is less clear-cut than the previously-mentioned ones. In most cases, it would be naturally translated as *but* in English—for example, in (479) and (480).

(479) *aite vao ou-pa-re ari vii eva evoa*
 father PRO.PROX.SG.N get-CONT-3SG.M_β but PRO.2.SG - there
 Dad is getting this one but you (are getting) that one.

(480) *Tomas vareo ou-pa-re vuku-arei ari ragai katai-vai*
 Tomas DEM.PROX.DL.N get-CONT-3SG.M_β book-DL.N but PRO.1.SG one-INDEF
ou-pa-a
 get-CONT-1SG_β
 Thomas is buying these two books but I'm going to just get one.

Part II

Verb Classes in Rotokas

Chapter 7

Verb Classes in Rotokas

In §5.2.2.6.1, it was established that the form of verbal subject agreement and of tense/mood marking consists of two classes, which were labelled simply α and β . These labels were chosen for their neutrality; they do not presuppose any particular analysis of what these two inflectional classes represent. The analysis of these two classes of verbal inflection is the central concern of this thesis and the remaining chapters will examine the issue in greater detail.

In this chapter, the basic problem will be formulated. In §7.1, the formal nature of the distinction will be more firmly established and a clear set of diagnostics for its recognition will be provided. In §7.2, the basic problem is stated and a tentative hypothesis concerning its solution is put forward, which will be refined in later chapters as the facts of the matter are established.

7.1 Two Verb Classes: α and β

The distinction between α and β agreement and TAM marking imposes a two-way classification on all verb stems for the purposes of verbal inflection. This classification is observable for individual tokens of a verb root or stem, in the sense that most instances of an independent verb (as opposed to a dependent verb—see §5.2.2.5) can be unambiguously assigned to one of these two classes. The morphological diagnostics that can be used to identify a particular token as α or β will be discussed in §7.1.1. Although the classification of a particular token is generally straightforward, there are a few complications and exceptions, which will also be discussed in §7.1.1.

7.1.1 Morphological Diagnostics

Since the primary concern of this part of the thesis is the distinction between two forms of verbal agreement, it pays to be clear about how that distinction is established. What form does it take and what conditions are involved? The distinction between α and β verbs is not simply a

property of verbal subject agreement, since it divides into two classes not only the verbal subject agreement markers but also the tense/mood markers. Each will be discussed in turn.

7.1.1.1 Verbal Subject Agreement

The two classes of verbal subject agreement were already introduced in §5.2.2.6 and are repeated below for convenience.

Person	Number	Gender	α	β
1st Person	Singular		-ra	-a
	Dual		-ve	
	Plural Inclusive		-vio	
	Plural Exclusive		-io	
2nd Person	Singular		-u	-ri
	Dual	M	-si	
		F	-ere	
	Plural		-ta	
3rd Person	Singular	M	-ro	-re
		F	-o	-e
	Dual	M	-si	
		F	-ere	
	Plural		-a	-i

Figure 7.1: Subject Agreement Suffixes

As Table 7.1 (cf. Table 5.2) shows, the distinction between α and β agreement is not found in all configurations of person, number, and gender. In fact, it is found only in the singular and the third person plural. For example, verbs with a first person singular subject can be easily identified as α or β , as illustrated by (481) and (482).

(481) *ava-ra-i eisi uuko-vi sisiu-sia*
 go-1SG α -PRES α LOC water-DIM bathe-DEP.SEQ
 I'm going to the river to bathe.

(482) *ragai raga asiko-vira tou-pa-a-voi kepa=ia*
 PRO.1.SG only alone-ADV be-CONT-1SG β -PRES β house=ENC
 I am alone in the house.

If a verb occurs with a subject that is not singular or third personal plural, only TAM marking reveals the class of the verb. For example, the form of subject agreement is the same in (483) and (484) since the subject is third person masculine dual in both cases, but the difference in classification is nevertheless identifiable on the basis of TAM marking: *-ei* for α in the case of (483) and *-voi* for β in the case of (484).

(483) *Pita vaio ora Kariri ava-si-ei voka-sia*
 Pita DL.ANIM and Kariri go-3DL.M-PRES_α walk-DEP.SEQ
 Peter and Kariri are going for a walk.

(484) *vaea-vira vaiterei=a keke-pa-si-voi kuvupa-toarei*
 same-ADV PRO.3.DL.M=TOP look-CONT-3DL.M-PRES_β shirt-DL.M
 These two shirts look the same.

On the basis of (485) or (486) alone, for example, it would not be possible to determine which class the verb stem *tou* “be” belongs to since tense/mood marking is absent (thanks to the possibility of zero-marking for the present realis).

(485) *Tasia ora Vitera tou-pa-ere aore-pa-vira*
 Tasia and Vitera be-CONT-3DL.F different-DERIV-ADV
 Tasia and Vitera are different (i.e., belong to different clans).

(486) *vo oisioa tou-pa-io voari tuariri igei aao opo*
 here always be-CONT-1PL.EXCL long ago PRO.1.PL.EXCL PRO.POSS.1.SG taro
kovo toki-pa-oro
 garden care_for-CONT-DEP.SIM
 Long ago we were here caring for our taro gardens.

There are three ways in which subject agreement may be lacking on a verb stem. First, dependent verbs always lack subject agreement, as illustrated in (487) and (488). The lack of agreement is one of the two criteria for their identification (the other being the lack of tense/mood markers—see §5.2.2.5).

(487) *Tasia aivaro-sia ava-o-e Vitera=va*
 Tasia meet-DEP.SEQ go-3SG.F_α-IP_α Vitera=COM
 Tasia went to meet with Vitera.

(488) *Vaeako riro-vira pupuraki-o-i eisi=va kare-pa-oro sikuru-a*
 Vaeako big-ADV sweat-3SG.F_α-PRES_α LOC=ABL return-CONT-DEP.SIM school-SG.N
 Vaeako sweats a lot returning home from school.

Second, verbs with neuter subjects normally show null agreement (though see §7.1.1.2 on the use of third person plural agreement with neuter subjects), as illustrated in (489) and (490).

(489) *rerio vori-a-aro apepa-∅-voi rutu*
 radio pay-SG.N-POSS expensive-3SG.N-PRES_β very
 The price of a radio is very high.

(490) *kikisi kukuuku-pa-∅-voi*
 ball hit_ground-CONT-3SG.N-PRES_β
 The ball is hitting the ground.

The third case is when verbs lack both subject marking and TAM marking, which appears to be restricted to verbs with a third person singular subject (regardless of gender) in the present realis, as in (491) and (492).

(491) *vovokio kakau vori-pa-to urio-pa varao rutu vori-sia*
 today cocoa buy-DERIV-SG.M come-CONT DEM.PROX.PL.N very buy-DEP.SEQ
kakau-ara vigei vara-aro
 cocoa-PL.N PRO.PER.1.INCL PPRO.3.SG.N-POSS
 Today the cocoa buyer is coming to buy all of our cocoa.

(492) *viapau oira-to uvui-pa ra va iava kopii-ro*
 NEG man-SG.M be_able-CONT and PPRO.3.SG.N POST die-3SG.M_α
vao-ia kuva oa pura-pa-i-veira
 DEM.PROX.3.SG.N=LOC sorcery RPRO.3.SG.N make-CONT-3PL_β-HAB.ANIM
vo-evao iava
 SPEC-tree POST
 A man wouldn't die from the poison that they would always make from the tree.
 [(Firchow, n.d.)]

In cases where subject agreement on the verb is uninformative with respect to the classification of a verb, the marking of TAM marking is usually more revealing.

7.1.1.2 Tense/Aspect/Mood

Rotokas has a number of verbal suffixes marking various categories of tense, aspect, and mood (TAM), and these are also sensitive to the distinction between α and β verbal inflection, as shown in Table 7.1 (see §5.2.2.7 for discussion).

Tense	Verb Classification	
	α	β
Present	-ei	-voi
Immediate Past	-e	-vo
Near Distant	-era	-vora
Distant Past	-erao	-vorao
Remote Past	-epa	-va

Table 7.1: Realis Tense Markers By Verb Classification (α vs. β)

TAM in fact provides a better diagnostic of the distinction between the two classes than verbal agreement, given that it is found for all TAM categories whereas in verbal subject agreement, the distinction is restricted to a subset of the available categories. This can be seen in (493) and (494), where verbal subject agreement is uninformative but the classification of the verb stem is nevertheless identifiable on the basis of TAM.

(493) *asi evoa tou-pa-si-voi*
of_course there be-CONT-3DL.M-PRES_β
Why of course the two of them are over there!

(494) *Tavi vaio ora Rake tetevu tutaa-pa-si-ei Rake vo-kepa-aro iare*
Tavi ANIM.DL and Rake sago sew-CONT-3DL.M-PRES_α Rake SPEC-house-POSS POST
Tavi and Rake are sago-sewing for Rake's house.

In some cases, there is ambiguity concerning the proper segmentation of the agreement and TAM suffixes, as illustrated in (495) and (496), where the same verb form is found but arguably possess different underlying morphemes. The suffix *-i* is a verbal agreement marker for the third person plural in (495) and (496).

(495) *kokio kare eraerao-vira tou-pa-i evao-va=ia*
bird FP two.RDP-ADV be-CONT-3PL_β tree-SG.F=LOC
The birds are on the tree in pairs.

(496) *tugitugi-ara tou-pa-i kepa=ia riro-ara*
room.RDP-PL.N be-CONT-3PL_β house=LOC big-PL.N
Many rooms are in the house.

In (497) and (498), however, the analysis of the suffix *-i* is unclear; it could be analyzed as a marker of plural subject agreement or the present tense realis marker *-ei* (which reduces to *-i* according to productive morphophonemic rules—see (335)).

(497) *Teokon urui oa tou-pa-i Wakunai=ia ruvara=ia*
Teokon village RPRO.3.SG.N be-CONT-? Wakunai=LOC near=LOC
Teokon village is close to Wakunai.

(498) *sirovie-vira rutu tou-pa-i veeta kou*
striped-ADV very be-CONT-? bamboo CLASS
Bamboo is striped.

Since (497) and (498) both have singular neuter subjects, the analysis of *-i* as a marker of the present tense realis seems reasonable; however, examples of third person neuter subjects with plural agreement, such as (499) and (500), suggest otherwise.

(499) *veveto-vira rutu tou-pa-i-voi* *sigo-a*
 sharp-ADV very be-CONT-3PL_β-PRES_β knife-SG.N
 The knife is very sharp.

(500) *kasirao-vira tou-pa-i-voi* *uuko rovu*
 hot-ADV be-CONT-3PL_β-PRES_β water CLASS
 The water is really hot.

Further evidence in favor of analyzing the suffix *-i* in (497) and (498) as an agreement marker (as opposed to the present tense realis) comes from the agreement patterns observed for other β verbs, such as *paru* “flow”, as in (501) and (502).

(501) *uuko-vi* *oa* *arasi-vira rutu paru-pa-i-veira*
 water-DIM RPRO.3.SG.N nice-ADV very flow-CONT-3PL_β-HAB
 The water flows very nicely.

(502) *viarora kou raga tuvua tupa-vorao oa iava viapau vearo-pie-vira*
 wild_pitpit CLASS just mud-SG.N cover-NP_β therefore NEG good-CAUS-ADV
paru-pa-i-veira *uuko-a*
 flow-CONT-3PL_β-HAB water-SG.N
 Wild pitpit covers the mud and therefore the water doesn’t flow well.

Further support for the interpretation of the suffix *-i* as an agreement marker in (495) and (500) comes from instances of the same verbs with null subject agreement but β TAM marking, as in (503) and (504).

(503) *siopai-vira rutu tou-pa-∅-voi* *evo* *reo-pa-a*
 unfamiliar-ADV very be-CONT-3SG.N-PRES_β DEM.???.SG.N talk-DERIV-SG.N
 That talk is very unfamiliar.

(504) *katokato-vira paru-∅-voi* *uuko-vi*
 black-ADV flow-3SG.N-PRES_β water-DIM
 The river is flowing black now.

Finally, not all TAM markers are sensitive to the distinction between α and β verbs. The suffix *-pa* is invariant in form, as can be seen in (505) and (506), where it is invariant in form despite the fact that it occurs with an α verb in (505) and a β verb in (506).

(505) *Reari ira akoro-a=ia aasi aio-pa-ro-i*
 Reari RPRO.3.SG.M lime-SG.N=LOC betel_nut eat-CONT-3SG.M_α-PRES_α
 Reari is chewing betel nut with lime.

(506) *Rarasori kakapiko-a aio-a aio-pa-re-voi* *uva*
 Robinson small_amount-SG.N food-SG.N eat-CONT-3SG.M_β-PRES_β and
rera=pa *sirao-pa-ro-e* *Pita*
 PPRO.3.SG.M=BEN feel_sorry-CONT-3SG.M_α-IP_α Peter
 Robinson was eating little food and Peter feels sorry for him.

7.2 Firchow's Problem: What is the α/β Distinction?

The basic problem that will be addressed here could be called Firchow's Problem, given that it was originally recognized by Firchow (1987), who observes that the analysis of the distinction between α and β verb morphology poses a number of analytical challenges due to its imperfect correlation with transitivity. There are essentially two main issues. First, Firchow (1987:22) observes that the notion of transitivity is somewhat slippery:

The root of the problem is the notion of "transitiveness" (which is even unclear in the analysis of English verbs). What are the parameters of transitiveness? Can the verb "to walk" be transitive because there is some goal or direction involved? Why is "to walk" considered transitive in Rotokas when the verb "to return" is never transitive and a goal or direction is more obviously implied in the latter?

What Firchow (1987) had in mind with this observation is that verbs with no obvious difference in transitivity are nevertheless classified differently. In other words, if transitivity determines verb classification, why do verbs with the same transitivity show different classification? For example, the verb *kare* "return" is α whereas the *voka* "walk" is β . Yet neither takes an object and no goal needs to be made explicit, as can be seen in (507) and (508).

(507) *kupero-vira raga voka-pa-a-voi*
unaware-ADV just walk-CONT-1SG β -PRES β
I have been walking around unaware.

(508) *kare-pa-ra-i atoi iare*
return-CONT-1SG α -PRES α village POST
I am going back to the village.

Second, Firchow (1987) also observes that intransitive and transitive verbs alike show unexpected classification:

The problem is that some verbs such as *voka* 'to walk' are also inflected by the "transitive" sets of markers (*voka-re-va* 'he walked years ago'), while some verbs such as *ruipa* 'to desire (something)' are inflected by the "intransitive" sets of markers (*ruipa-ro-epa* 'he desired (it) years ago').

This is illustrated for the two verb stems mentioned by Firchow (1987): *voka* "walk" in (509) and *ruipa* "want, like" in (510). The contrast between the classification of the two verbs is readily observable, given that both occur with first person singular subjects and in the present tense realis.

(509) *kupero-vira raga voka-pa-a-voi*
clueless-ADV just walk-CONT-1SG β -PRES β
I was just walking around clueless.

- (510) *oari=pa* *ruipa-pa-ra-i* *riako=va*
 DEM.3.SG.F=BEN like-CONT-1SG_α-PRES_α woman-SG.N
 I like that woman.

On the basis of these considerations, Firchow (1987) suggests that either transitivity is not the relevant parameter or it must interact with other (not yet identified) parameters. Although Firchow’s basic worry is justified, he fails to define transitivity as clearly as one would wish in order to state definitively that it is not the relevant distinction governing verbal classification, nor does he identify other parameters that could potentially do so. In the following section, the notion of transitivity will be explored in greater depth, contrasting it with the related notion of valency, in order to provide a full account of Rotokas verb classification.

7.3 Transitivity and Valency

This section distinguishes between transitivity and valency in order to set the stage for the in-depth discussion of valency and valency-changing derivations provided in Chapter 8 and Chapter 9, respectively.

7.3.1 Transitivity

The notion of “transitivity” held by Firchow (1987) is somewhat rough-and-ready, and there has been considerable work done in refining the notion cross-linguistically (Lakoff, 1977; Hopper and Thompson, 1980; Givón, 1984; Kittilä, 2002; Lazard, 2003). This literature helps explain why a verb such as *ruipa* “to want” deviates from the transitive pattern, but there is still a good deal in need of explanation. In this section, the notion of valency will be pinned down more precisely and integrated into the typology of argument types.

Before discussing valency, it is worthwhile to draw a distinction between “transitivity” and “valency”. The term ‘transitivity’ is used ambiguously in the literature. On the one hand, transitivity refers to a syntactic notion, usually the number of (core) arguments taken by a verb. According to this sense of the term, it is more or less synonymous with the term ‘valency’. On the other hand, transitivity refers to a more general semantic notion, which has to do with the extent to which an action carries over from agent to patient (Hopper and Thompson, 1980; Frawley, 1992), in which case it is a gradient notion, influenced by a number of different factors, such as those listed in Table 7.2.

The majority of the transitivity features discussed in Hopper and Thompson (1980) are relatively self-explanatory and do not require additional discussion, but a few merit elaboration—namely, agency and the affectedness and individuation of O.

The parameter of agency refers to the nature of the agent that initiates an action. Although Hopper and Thompson (1980) do not clarify what is meant by A being high or low in “potency”,

	Parameter	High	Low
A	participants	two or more	one
B	kinesis	action	non-action
C	aspect	telic	atelic
D	punctuality	punctual	non-punctual
E	volitionality	volitional	non-volitional
F	affirmation	affirmative	negative
G	mode	realis	irrealis
H	agency	A high in potency	A low in potency
I	affectedness of O	O totally affected	O not affected
J	individuation of O	O highly individuated	O non-individuated

Figure 7.2: Semantic Parameters of Transitivity (Hopper and Thompson, 1980:252)

it appears from their discussion of the parameter that animacy is the main dimension and that a human or animate A is considered higher in “potency” than an inanimate one.

The parameter of “Affectedness of O” refers to the extent to which O is changed as a result of the situation described in a clause. While some transitive verbs entails a readily identifiable change of state in the patient/theme (e.g., *break*), others do not (e.g., *hit*). For example, in English, this distinction has been invoked to account for which verbs participate in the “conative” alternation or form middles (Fillmore, 1970; Levin and Hovav, 1995b). Verbs that involve a change of state can form middles whereas predicates that involve only a causally affected O do not, as illustrated in (511).

(511) a. * The table hits easily.

b. The table breaks easily.

Conversely, verbs that involve a causally affected O participate in the “conative” alternation, whereas verbs that do not involve a causally affected O or that entail a change of state in O do not, as illustrated in (512).

(512) a. The judge hit/hit at the table with his gavel.

b. * The judge broke/broke at the table with his gavel.

According to Hopper and Thompson (1980), the parameter of “Individuation of O” refers to the distinctness of O from A and from its own background. The specific contrast to which it refers are listed below in Table 7.2.

More Individuated	Less Individuated
proper	common
human, animate	inanimate
concrete	abstract
singular	plural
count	mass
referential, definite	non-referential, indefinite

Table 7.2: Individuation of O: Relevant Features

For example, in Tongan, non-referential objects undergo “noun incorporation” and the subject takes absolutive rather than ergative agreement, as illustrated in (513).

(513) a. *na'e kai 'e Sion 'a e ika*
 PAST eat ERG John ABS DEF fish
 John ate the fish.

b. *na'e kai ika 'a Sione*
 PAST eat fish ABS John
 John ate fish. [Hopper and Thompson (1980:257-258)]

As Hopper and Thompson (1980) observe, a prototypical transitive situation will have high transitivity values for most, if not all, of the parameters identified in Table 7.2. In other words, these parameters cluster to define a prototypical transitive situation (Lakoff, 1977; Givón, 1984; Kittilä, 2002; Lazard, 2003), and a transitive clause is a simple underived clause that describes such a situation (Næss, 2006):

a transitive situation is one in which an agent acts upon a patient, where the agent is volitionally involved in the event, causes or instigates the event, and is not affected by the event; while the patient is not volitionally involved, does not participate in the instigation of the event, but is affected by it.

There is some controversy concerning the nature of the prototypical transitive clause which hinges upon what is taken to be the prototypical object (Næss, 2006). (This is an issue that will be discussed again later, in Chapter 11.) We turn now to valency.

7.3.2 Valency

In the previous section, ‘transitivity’ was discussed and established as a semantic notion that concerns the degree to which an action carries over from agent to patient. Here it is distinguished from valency, which is a strictly syntactic notion (Tesnière, 1959; Somers, 1987; Mosel, 1991; Payne, 1997). Mosel (1991:241) characterizes valency in the following terms:

Valency is the property of the verb which determines the obligatory and optional number of its participants, their morphosyntactic form, their semantic class membership (e.g., \pm animate, \pm human), and their semantic role (e.g., agent, patient, recipient). The valency inherently gives information on the nature of the semantic and syntactic relations that hold between the verb and its participants.

Valency is an essentially verb-centered notion since it is primarily the verb that determines the number of arguments present in a clause. The number of possible arguments taken by a verb is stated to be the verb's valency, possible values ranging from zero to three (avalent=0, monovalent=1, bivalent=2, and trivalent=3). Unlike core arguments, the number of circumstantials is unlimited, ranging from zero to n . Examples of sentences with varying numbers of circumstantials are provided in (514) through (516).

- (514) *Rave, vii ori-pa-u-ei oira-ra=pa ovusia vii=pa*
 Rave, PRO.2.SG cook-CONT-2SG $_{\alpha}$ -PRES $_{\alpha}$ man-HUM.PL=BEN while PRO.2.SG=BEN
kovo-i-ve
 work-3PL $_{\beta}$ -SUB
 Rave, you cook for the men while they work for you.

- (515) *ragai sipuru=ia aio toke-pa-ra-i kakae vure=pa*
 PRO.1.SG spoon=LOC food serve-CONT-1SG $_{\alpha}$ -PRES $_{\alpha}$ child FP=BEN
 I serve food to the children with a spoon.

- (516) *toisikova=ia ava-pa-a-veira raiva=ia eisi-re Asitaipa*
 mountainous.area=LOC go-CONT-3PL $_{\alpha}$ -HAB road-LOC LOC=ALL Aistaipa
 They went on the road to Asitaipa.

Crucial to the notion of valency is the distinction between core and non-core arguments on the one hand, and between arguments and adjuncts on the other.¹ The distinction between a core argument and a non-core argument is recognized in most grammatical theories, although its instantiation may differ according to the dictates of a particular framework. Dixon (1994:6) claims that the distinction between verbs with one core argument and verbs with two core arguments is fundamental and universal:

All languages distinguish between clauses that involve a verb and one core noun phrase (intransitive clauses [monovalent]) and those that involve a verb and two or more core NPs (transitive clauses [bivalent], including ditransitive as a subtype).

¹ Although some authors use alternative terminology (e.g., actant vs. circumstantial), the basic concept remains largely the same.

On the basis of the distinction between verbs with one or two core arguments, Dixon (1979, 1994) argues for a three-way division of core arguments into S, the single core argument of an intransitive clause; A, the core argument of a transitive clause that it is prototypically associated with the agent; and O, the core argument of a transitive clause that it is prototypically associated with the patient (see Andrews (2007) for discussion and justification).²

In order to discuss valency sensibly, it is necessary to establish a core set of basic argument types. The main source for this discussion is Andrews (2007), which is summarized in Figure 7.3.

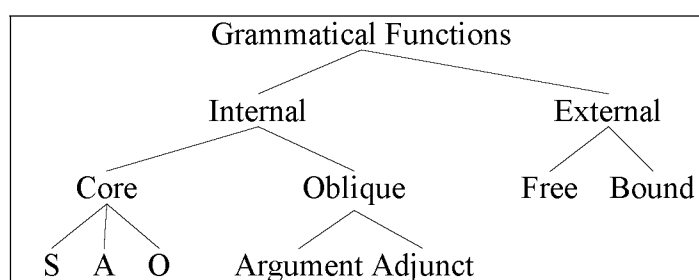


Table 7.3: Inventory of Grammatical Functions of the NP

The first major division in his classification is between internal (inner) and external (outer) functions. This distinction is recognized in some way by most theories of grammar—for example, in Role and Reference grammar, there is a similar distinction made between core and periphery (Van Valin Jr. and LaPolla, 1997; Van Valin Jr., 2005). Within internal functions, core and oblique functions are distinguished. The core functions are further broken down into S, A, and O, which are defined, respectively, as the single argument of an intransitive verb, the argument of a transitive verb prototypically associated with the agent, and the argument of a transitive verb prototypically associated with the patient.

S The single core argument of a one-place predicate—e.g., *The giant is sleeping.*

A The core argument associated with the actor/agent of a prototypical transitive predicate—e.g., *The enraged drunk killed the innocent man.*

O The core argument associated with the undergoer/patient/theme of a prototypical transitive predicate—e.g., *The plumber smashed the PVC pipe with a monkey wrench.*

Oblique Adjunct A non-core argument licensed by general semantics—e.g., *Geeks program computers for the fun of it.*

Oblique Argument A non-core argument licensed by the predicate—e.g., *France supplied Iraq with missiles.*

²The universality of S, A, and O has, however, been called into question on various grounds (Durie, 1988; Bhat, 1991; Dryer, 1997; Mithun, 1999) but in Rotokas there is good evidence for the existence of these distinctions, as will be seen in Chapter 8. The universality of S is addressed in Chapter 10.3.

Using these grammatical primitives, a more precise statement of the relationship between grammatical roles and the two forms of verbal agreement can be formulated and evaluated on the basis of the evidence. In the following section, a preliminary hypothesis is put forward for evaluation.

7.4 First Hypothesis

Firchow's observed correlation between verb classification and transitivity can be reformulated in terms of Dixon's three primitive core argument types. The hypothesis would be that subject agreement is simply sensitive to the type of subject: the S of an intransitive verb takes α agreement whereas the A of a transitive verb takes β agreement, as in (517).

- (517) a. $S \rightarrow \alpha$
 b. $A \rightarrow \beta$

According to this hypothesis, there would be a one-to-one relationship between the primitive grammatical roles of Dixon (1979, 1994) and the classification imposed by the distinction between α and β verbs. This is of course only one of a number of logically possible mappings between the two, which are shown diagrammatically in Figure 7.4.

Possible Configuration	Role	Inflection
One-to-One	S	α
	A	β
Split-S	S	α
	A	β
Split-A	S	α
	A	β
Many-to-Many	S	α
	A	β

Table 7.4: Grammatical Roles and Verb Inflection

The organization of the second part of this thesis is as follows: In the following chapter, the nature of valency in Rotokas will be examined in depth, and it will be shown that the simple hypothesis in (517)—which posits a one-to-one relationship between grammatical roles and the two forms of agreement—cannot be maintained since verbs with a single core argument (S) are split between the two forms of agreement. Although the majority of verbs with a single core argument take α agreement, there is a sizeable minority of verbs with a single core argument that take β agreement. This eliminates the one-to-one and split-A mappings, leaving only the split-S and many-to-many mappings as viable hypotheses.

Chapter 8

Valency in Rotokas

This chapter examines the nature of valency in Rotokas in an attempt to evaluate the hypothesis that verbal inflection in Rotokas is sensitive simply to the grammatical role of the subject, such that S shows α agreement while A shows β agreement. Underived verb roots represent the default mappings of semantic roles and grammatical relations in the argument structure of the language and therefore are a natural starting point for investigation. Here it is established that there are two main valency types in Rotokas: monovalent verb roots (“intransitive”), which take a single argument, and bivalent verb roots (“transitive”), which take two (or possibly three) core arguments. If a clause possesses two core arguments, it will show β agreement; however, the reverse does not hold true. If a verb shows β agreement, it will not necessarily take two core arguments. This asymmetry owes to the fact that monovalent verb roots are split according to their form of verbal inflection: most show α inflection but some show β .

Crucial to the concept of valency is the distinction between core and oblique arguments (see §7.3.2). In Rotokas, core arguments can be distinguished from oblique arguments on the basis of a few different considerations. First, verbal agreement for person, number, and gender is sensitive to (i.e., controlled by) the subject. The core argument that plays the role of subject determines the choice of agreement marking on the verb and the presence of a second core argument (a direct object) automatically triggers β agreement. Second, core arguments are relatively more restricted in their constituent ordering than other types of arguments or adjuncts (e.g., adverbs) (see §6.2.1). Third, core arguments are necessarily present either by way of verbal agreement in the case of subjects or by way of realization as a nominal (a pronoun or a lexical NP) in the case of direct objects. Finally, core arguments are unmarked (i.e., occur as bare NPs) whereas non-core arguments take some form of oblique marking. As Andrews (2007:153) observes, “Languages in which the core/oblique distinction corresponds to that between bare NPs and those carrying a marker are not uncommon.”

The term predicate type is used here to describe the number of subcategorized arguments taken by a verb, which may exceed the valency of a verb since valency includes only core arguments while some verbs are subcategorized for oblique arguments—i.e., some two-place predicates are considered monovalent here. For example, the verb stem *tara* “search for, seek”

requires (i.e., is subcategorized for) two arguments, but it is not bivalent, since one of its arguments is an oblique, which is marked by the role-marking enclitic =*re*, as in (518) and (519).

(518) *Agiosi aakova=re tara-pa-e-vo*
 Agiosi mother=ALL look_for-CONT-3SG.F β -IP β
 Agiosi looked for (her) mother.

(519) *oira-ra ava-pa-a-i varu kare-vai=re tara-sia eisi vegoaro*
 man-PL.N go-CONT-3PL α -PRES α meat FP-INDEF=ALL look_for-DEP.SEQ LOC jungle
 The men are going to look for game in the jungle.

Given the distinction between predicate type, valency, and verbal inflection (α vs. β), six different verb root classes can be distinguished, as shown in Table 8.1.

Predicate Type	Valency	Agreement	Example
1-Place	1	α	<i>uusi</i> “sleep”
1-Place	1	β	<i>gau</i> “cry”
2-Place	1	α	<i>ruipa</i> “want”
2-Place	1	β	<i>tara</i> “look for”
2-Place	2	β	<i>upo</i> “strike”
3-Place	2/3	β	<i>vate</i> “give”

Table 8.1: Predicate Types, Valency, and Subject Agreement in Rotokas

An extensive listing of verb roots in Rotokas is provided in Appendix A, which classifies all of the known verb roots in the Rotokas lexicon. This data comes from a lexical database of Rotokas under development by the author which contains a wide variety of information, including the valency, number and type of non-core arguments, and the form of agreement for verb roots and stems. It is based on a Shoebox dictionary developed by Irwin Firchow (Firchow, 1973, 1984) and substantially refined during the course of my own fieldwork, on the basis of native speaker consultation and the analysis of interlinearized texts.

The relative proportion of verb roots according to their valency type and the overall number of α versus β verb roots are provided as a bar graph in Figure 8.1 (see Appendix A for more information concerning the Shoebox/Toolbox dictionary from which this data was obtained as well as an exhaustive list by class of verb roots and verb stems found in the dictionary).

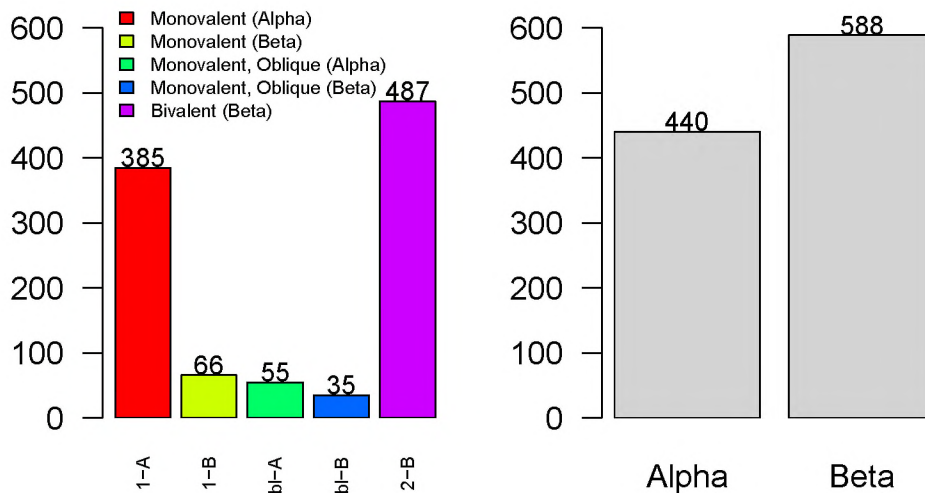


Figure 8.1: Distribution of Valency Classes (left) and Inflection Classes (right) in Rotokas Lexicon

8.1 Background

In Rotokas, verb roots can be broadly grouped into two main valency types: monovalent roots, which take a single core argument (and possibly a second oblique argument marked by one of the case-marking enclitics described in §8.3.3), and bivalent roots, which take two core arguments. The difference between the two valency types concerns objecthood. While both monovalent and bivalent verb roots require a subject, with which they agree in terms of person, number, and gender, only bivalent verb roots take an additional core argument, a direct object, which occurs in a fixed position (see §6.2.1) and cannot be freely elided.

For example, the verb root *uusi* “sleep” is monovalent and takes only a single core argument, as in (520). It cannot take an object, except through valency-changing derivations, as illustrated in (521).

(520) *Avaisisi ira kei kepa=ia uusi-pa-ro-veira vegoaro*
 Avaisisi RPRO.3.SG.M leaning house=LOC sleep-CONT-3SG.M_α-HAB jungle
 Avaisisi is sleeping in a lean-to in the jungle.

(521) *aako-va kakae-to uusi-pie-e-voi evao ruvaru-va rero-aro*
 mother-SG.F child-SG.M sleep-CAUS-3SG.F_β-PRES_β tree relief-SG.F underneath-POSS
oiso ra kovo-e-ve
 COMP and work-3SG.F_β-SUB
 The mother put her son to sleep underneath the tree so that she could work (in the garden).

By contrast, the verb root *tario* “chase” is bivalent. It takes two arguments: a subject and an object. The verb agrees in person, number, and gender with the subject but not with the object. The subject can be elided when contextually inferrable and/or non-emphatic, as in (523), but the object is obligatory and cannot be freely elided. It occurs in a relatively fixed preverbal position (see §6.2.1), either as a noun phrase, as in (522), or as a pronoun, as in (523).

(522) *Pita gapu-to oira-to tario-re-voi*
 Peter naked-SG.M man-SG.M chase-3SG.M_β-PRES_β
 Peter is chasing the naked man.

(523) *sora-to isisio kou puri-oro tori-re-vo uvare rera*
 poisoner-SG.M grass CLASS lay_down-DEP.SIM flee-3SG.M_β-IP_β because PRO.3.SG.M
tario-i-vo eisi Rarova
 chase-3PL_β-IP_β LOC Rarova
 The poison man fled, making the grass lie down, because they chased him in Rarova.

Some verb roots are compatible with more than one syntactic frame (i.e., valency or sub-categorization frame). For example, the verb stem *reoreo* “talk” (the reduplicated form of *reo*) occurs with a varying number of arguments. In (524), it occurs with only a single core argument—namely, the subject.

(524) *Alice gae-o-ra uva viapau reoreo-pa-o-ra*
 Alice be_startled-3SG.F_α-NP_α and NEG talk-CONT-3SG.F_α-NP_α
 Alice was startled and couldn’t talk.

In (525) through (527), the verb stem *reoreo* occurs with an additional argument, a non-core (i.e., oblique) argument, but the presence of this additional argument has no effect on the form of agreement. It shows α agreement even when it occurs with an addressee marked by =*re* in (525) or with an interlocutor marked by =*va* in (526). The same is true when the topic of conversation is marked by =*ia* in (527).¹

Addressee

(525) *teapi ragai=va voroko-pa-u osia vii=re reoreo-pa-ra*
 PROH PPRO.1.SG=ABL arrogant-CONT-2SG_α as PPRO.2.SG=ALL talk-CONT-1SG_α
 Don’t be arrogant with me as I’m talking to you.

Interlocutor

(526) *viapau reoreo-o-e igei=va uvare oira tavi-i-vo*
 NEG talk-3SG.F_α-IP_α PRO.1.PL.EXCL=COM because PPRO.3.SG.F tell-3PL_β-IP_β
 She didn’t talk with us because they told her (not to).

¹It is questionable whether “interlocutor” is the best characterization for the argument marked by =*va* in (526). A better gloss may be “conversational partner”. This raises the issue of the number and nature of thematic roles, which is addressed in §10.2.

- (527) *viapau rorio-ra-e* *ovusia* ^{Topic} *va=ia* *reoreo-pa-ro-e* *uva*
 NEG be_clear-1SG_α-IP_α while PPRO.3.SG.N=LOC talk-CONT-3SG.M_α-IP_α and
rera *ake-a-vo*
 PPRO.3.SG.M ask-1SG_α-IP_β
 I was unclear about it while he was talking about it and I asked him.

Neither the number of non-core arguments nor the form of oblique marking in (524) through (527) has an effect on the form of verbal inflection. This can be further illustrated with the verb root *tavi* “tell”, which is labile (see §9.1.1). It takes a single core argument and shows α agreement in (528).

- (528) *Potaki=va* *kuara-pa-i-vo* *ovusia tavi-pa-ro-e*
 Potaki=COM yell.at-CONT-3PL_β-IP_β while tell-CONT-3SG.M_α-IP_α
 They are yelling at Potaki while he talks.

In (529) through (531), however, *tavi* shows β agreement when it occurs with an object, as in (529); with an object and a dependent verb phrase, as in (530); and an object and complement clause, as in (531) and (532).²

- (529) *vavae-ara itoro-pie-i-vo* *kakae vure uvare* ^{Addressee} *voea* *tavi-e-vo*
 hand-PL.N raise-CAUS-3PL_β-IP_β child FFP because PPRO.3.PL.M tell-3SG.F_β-IP_β
tisa-va
 teacher-SG.F
 The children raised their hands because the teacher told them to.

- (530) *Pita* ^{Addressee} *Jon* *tavi-pa-re-va* *kokotoa rupu-pie-sia*
 Peter John tell-CONT-3SG.M_β-RP_β leg be.submerged-CAUS-DEP.SEQ
 Peter told John to stick his leg in the water.

- (531) *tisa-to* ^{Addressee} *kakae vure* *tavi-pa-re-va* *oisio opeita taku-vira*
 teacher-SG.M child FFP tell-CONT-3SG.M_β-IP_β COMP PROH bend_over-ADV
pau-pa-ta *ovusia reoreo-pa-ra*
 sit-CONT-2PL while talk.RDP-CONT-1SG_α
 The teacher told the children not to sit bent over while he’s talking.

²The complement clause is marked by the complementizer *oisio* in (531) and by *oisio ra* in (532).

Addressee

- (532) *sipito oira-ra tavi-re-vo oisio ra ava-a-ve vuruko-a taroro-sia*
 chief man-HUM.PL tell-3SG.M β -IP β COMP go-3PL α -SUB log-SG.N pry_out-DEP.SEQ
 The chief told people that they should go pry out the logs.

Some verbs select very specific subcategorization frames that are not found among other verb roots. For example, the verb root *kea* “mistake for, think mistakenly” selects two oblique arguments: the thing mistaken for something else, marked by the benefactive enclitic =*pa* (see §4.3 for discussion of its semantics) and the thing it is mistaken for, marked by *oisio* (which also functions as a complementizer—see §6.3.1). The verb is illustrated with both of its oblique arguments in (533) and with only the thing mistaken for something else in (534).

- (533) *votoue-toa=pa kea-ra-e evao rao=ia oisio koora-to*
 ant_nest-SG.M=BEN mistake-1SG α -IP α tree branch=LOC COMP possum-SG.M
ira pau-pa evao rao=ia
 RPRO.3.SG.M sit-CONT tree branch=LOC
 I mistook the ant nest on that tree for a possum sitting on a branch.

- (534) *riako-va aveke-va peka-e-vo uva rakoru keke-e-vo uva*
 woman-SG.F stone-SG.F turn_over-3SG.F β -IP β and snake see-3SG.M β -IP β and
kea-o-e oisio uo-va
 mistake-3SG.F α -IP α COMP eel-SG.F
 The woman turned over the stone and saw a snake but mistakenly thought it an eel.

The examples in (524) through (532) underscore a number of important points regarding the nature of verbal inflection in Rotokas. First, the classification of a verb as α or as β is not determined exclusively by the verb root. There is an interaction between the syntactic construction (“subcategorization frame”) in which a verb appears and its form of verbal inflection. Second, some syntactic constructions are consistently associated with a particular form of verbal inflection. For example, if a verb takes a direct object, its inflectional form is entirely predictable—viz., it will be β . This relationship is, however, unidirectional, since the reverse does not hold true—i.e., if a verb shows β inflection, it may not possess a direct object, as we will see in the following section when we consider the behavior of monovalent verbs.

8.2 Monovalent One-Place Predicates

A monovalent verb root is one that takes only a single core argument—namely, the subject, with which the verb agrees in terms of person, number, and gender. The subject is normally realized as either a full NP or it is elided when contextually retrievable. For example, the verb root *uusi* “sleep” takes a single core argument, which takes the form of a full NP in (535) but is elided in (536).

- (535) *atuu koto-vira uusi-pa-o-i*
 flying_fox hang-ADV sleep-CONT-3SG.F_α-PRES_α
 The flying fox sleeps hanging.
- (536) *kakae-to karavuru-ro-e uvare poupou=ia uusi-pa-ro-e*
 child-SG.M get_dusty-3SG.M_α-IP_α because dust=LOC sleep-CONT-3SG.M_α-IP_α
visiko-pa-oro
 play-CONT-DEP.SIM
 The child got dusty because he slept in dust while playing.

8.2.1 Agreement

Monovalent verbs can be divided into two classes on the basis of their form of agreement: α or β . The majority of monovalent verb roots belong to α . In Table 8.2, a partial list of α monovalent verb stems is provided—see Appendix A for a complete listing.

Stem	Gloss	Notes
<i>ava</i>	go	
<i>era</i>	sing	
<i>gapu</i>	be naked	
<i>goagoara</i>	be boiling	inherently reduplicated
<i>kokoro</i>	crazy, foolish	
<i>ogoe</i>	be hungry	
<i>opesi</i>	end, finish	
<i>revasi</i>	bleed	
<i>riro</i>	grow up	
<i>upia</i>	in pain, sick	
<i>urio</i>	come	
<i>uusi</i>	sleep	
<i>uvagi</i>	be deaf	
<i>vearo</i>	be good, fine, well	
<i>vioro</i>	ripen, mature	literally: be green
<i>voosi</i>	blind	
<i>vuri</i>	be bad, spoiled, wrong	

Table 8.2: Some Monovalent Verb Roots that Show α Inflection

All of the verbs in Table 8.2 show the same pattern of agreement, as illustrated for the verb root *uusi* “sleep” in (537) and (538).

(537) *upia-pa-ra-i* *kukue iava oa iava uusi-pa-ra-i*
hurt-CONT-1SG_α-PRES_α head POST therefore sleep-CONT-1SG_α-PRES_α
uru-a=ia
bed-SG.N=LOC
My head hurts and that's why I'm sleeping in bed.

(538) *uva uusi-ro-epa ovi-toa tapo urua=ia*
so sleep-3SG.M_α-RP_α offspring-SG.M also bed=LOC
So he slept with his son in bed. [Firchow and Akoitai (1974:50)]

Although the majority of monovalent verbs show α agreement, there is also a class of monovalent verbs that show β agreement. These verb stems are fewer in number than the α monovalent verbs (see Figure 8.1). A few of these are listed in Table 8.4 (see Appendix A for a complete inventory).

Stem	Gloss	Notes
<i>aata</i>	swim	generic
<i>gau</i>	cry	
<i>ikau</i>	run, speed	
<i>kapere</i>	swim	on the water's surface
<i>opoko</i>	defecate	generic term used for humans
<i>puu</i>	fart	
<i>roko</i>	go inside	
<i>viviko</i>	urinate	
<i>voka</i>	walk	
<i>vusi</i>	rush out, erupt	

Table 8.3: Some Monovalent Verb Roots with β Subject Agreement

The verbs in Table 8.4 show the same form of agreement—namely, β , as illustrated for the verb root *gau* “cry” in (539) and (540).

(539) *kuuo iria gau-pa-e-veira vokiario*
owl PPRO.REL.3.SG. cry-CONT-3SG.F_β-HAB night
The owl, he cries at night.

(540) *avi ua=ia kokai kare gau-i-vo*
light CLASS=LOC chicken PL cry-3PL_β-IP_β
In the morning the roosters cried out.

Monovalent verb roots cannot take a direct object without recourse to derivational morphology. This is true for those that show α agreement as well as those that show β agreement.

For example, the monovalent verb roots *uusi* “sleep” and *gau* “cry” can only take a direct object using the morphological causative *-pie* (see §9.1.2 for more detailed discussion). This is illustrated for *uusi* “sleep” in (541) and for *gau* “cry” in (542).

- (541) *Rua sikeo uusi-pie-pa-e-voi*
 Rua infant sleep-CAUS-CONT-3SG.F_β-PRES_β
 Rua put the child to sleep.

- (542) *kakae-to oaa gau-pie-pa-ri-veira rutu rera=va*
 child-SG.M PPRO.1.SG cry-CAUS-CONT-2SG_β-HAB very PRO.3.SG.M=COM
ugaa-pa-oro
 kiss-CONT-DEP.SIM
 You make our child cry by kissing him. [Firchow and Akoitai (1974:80)]

8.2.2 Constituent Order

Monovalent verbs show the same possibilities of constituent ordering regardless of their classification as α or β . The subject of a α monovalent verb occurs either before the verb, as in (543a), or after the verb, as in (543b).

- (543) a. *oira-to uusi-ro-epa*
 man-SG.M sleep-3SG.M_α-RP_α
 The man went to sleep.
- b. *uusi-ro-epa oira-to*
 sleep-3SG.M_α-RP_α man-SG.M
 The man went to sleep.

Similarly, the subject of a β monovalent verb occurs either before the verb, as in (544a), or after the verb, as in (544b).

- (544) a. *Patiriki gau-pa-re-voi*
 Patrick cry-CONT-3SG.M_β-PRES_β
 Patrick is crying.
- b. *gau-pa-re-voi Patiriki*
 cry-CONT-3SG.M_β-PRES_β Patrick
 Patrick is crying.

8.3 Monovalent Two-Place Predicates

Monovalent two-place predicates are verb roots whose meaning involves two participants (i.e., have two actants in their logical structure) but take only a single core argument. The two participants of these verb roots are realized as a subject and as an oblique argument marked by one of the role-marking postpositional enclitics described in §4.2.7. A given verb root selects for a particular postposition, and the choice of postposition is not fully predictable (see §8.3.3). For example, the verb root *tara* “seek, find, search for, look for” selects for =*re*, as illustrated in (545), and its oblique argument cannot be marked by another enclitic, such as =*ia*, =*va*, or =*pa*, as illustrated by the ungrammaticality of (546a) through (546c). (It is possible for the oblique marking to be absent in the case of noun incorporation—see §9.2.2.)

(545) *Patriki sigo-a=re tara-pa-re-vo*
 Patrick knife-SG.N=ALL look_for-CONT-3SG.M_β-IP_β
 Patrick looked for (his) knife.

(546) a. * *Patriki sigo-a=ia tara-pa-re-vo*

b. * *Patriki sigo-a=va tara-pa-re-vo*

c. * *Patriki sigo-a=pa tara-pa-re-vo*
 Patrick knife-SG.N=COM look_for-CONT-3SG.M_β-IP_β
 Patrick looked for (his) knife.

A few roots permit more than one type of marking for their oblique arguments (as already seen for *reoreo* “talk” in §8.1). For example, Firchow (1984) furnishes two possible forms of oblique marking for the verb root *tagava* “salute”, either the postpositional enclitic =*re* or =*va*, as in (547).

(547) a. *Kukurai keapi=va tagava-re-voi*
 Kukurai kiap=COM salute-3SG.M_β-PRES_β
 Kukurai salutes the kiap.³

b. *Kukurai keapi=re tagava-re-voi*
 Kukurai kiap=ALL salute-3SG.M_β-PRES_β
 Kukurai salutes the kiap.

In some cases, it is not clear whether an oblique constituent associated with a verb represents a subcategorized argument, rather than an adjunct. For example, the verb root *voki* “get dark” normally takes only a single argument, as in (548), but it also occurs with a second argument, as in (549).

³The word *keapi* is a borrowing into Rotokas from Tok Pisin, where the word *kiap* refers to the patrol officers who served as travelling police officers during the period when Papua New Guinea was under Australian administration (Sinclair, 1981; Kituai, 1998).

(548) *Rasii roro-pa-va ruku-e-voi uvare voki-ei*
 Rasii light-DERIV-SG.F light-3SG.F_β-PRES_β because night-PRES_α
 Rasii lit the lamp because it was getting dark.

(549) *uva voki-epa waiterei=re*
 and night-IP_α PRO.3.DL=ALL
 The night fell on the two of them. [Firchow (1984)]

8.3.1 Agreement

Monovalent two-place predicates are not uniform with respect to verbal inflection. Although most of these verbs show α inflection, there are also quite a few that show β inflection.

Inflection	Verb Stem	Oblique Marking
α	<i>vari</i> “threaten”	= <i>re</i>
	<i>roroo</i> “suckle on”	= <i>ia</i>
	<i>kaureo</i> “disagree with”	= <i>va</i>
	<i>taea</i> “deceive”	= <i>pa</i>
β	<i>tara</i> “seek, find, look for, search for”	= <i>re</i>
	<i>oruo</i> “diligent about”	= <i>ia</i>
	<i>veku</i> “bark at”	= <i>va</i>
	<i>vato</i> “respect, honor”	= <i>pa</i>

Table 8.4: Illustrative Monovalent Two-Place Predicates with β Inflection

8.3.1.1 α -Agreement

Monovalent two-place predicate verbs that show α agreement are exemplified in (550) through (553). Each verb stem that takes an oblique argument selects for a specific type of postposition, and all four enclitics are attested: =*re* in (550), =*ia* in (551), =*va* in (552), and =*pa* in (553).

(550) *ragai=re vari-ro-i torara=ia*
 PPRO.1.SG=ALL threaten-3SG.M_α-PRES_α axe=LOC
 He threatens me with an axe.

(551) *kakae-to aakova=ia roroo-pa-ro-i*
 child-SG.M mother-SG.F=LOC suckle-CONT-3SG.M_α-PRES_α
 The child is suckling on his mother.

(552) *riri-vira oisoa rera=va kaureo-pa-a-ve*
 big-ADV always PPRO.3.SG.M=ABL disagree-CONT-3PL_α-SUB
 They were always in much disagreement with him.

- (553) *voea=pa taea-ro-epa*
 PPRO.3.PL=BEN accuse-3SG.M_α-RP_α
 He accused them.

8.3.1.2 β -Agreement

Monovalent two-place predicate verbs that show β agreement are exemplified in (554) through (557). Each verb stem that takes an oblique argument selects for a specific case-marking enclitic, and all four enclitics are attested: =*re* in (554), =*ia* in (555), =*va* in (556), and =*pa* in (557).

- (554) *Agiosi aako-va=re tara-pa-e-vo*
 Agiosi mother-SG.F=ALL seek-CONT-3SG.F_β-IP_β
 Agiosi looked for mother.

- (555) *rera vo-kovo-aro=ia oruo-pa-re*
 RPRO.3.SG.M SPEC-work-POSS=LOC be_satisfied-CONT-3SG.M_β
 He is satisfied with his work.

- (556) *kakau kare ragai=va veku-i-vo eisi Sikoriara*
 dog FFP PPRO.1.SG=COM bark-3PL_β-IP_β LOC Sikoriara
 Dogs bark at me in Sikoriara.

- (557) *ragai vato-pa-a-veira ragai taataa-irara-aro=pa*
 RPRO.1.SG respect-1SG_β-HAB RPRO.1.SG brother-HUM.PL-POSS=BEN
 I always respect my brothers.

8.3.2 Constituent Order

The oblique arguments of monovalent two-place predicate verbs are fairly free with respect to constituent ordering (regardless of their form of verbal inflection), and in this respect they differ significantly from direct objects, whose constituent order is fixed. (Direct objects can be extracted from their fixed position in the clause, but only through specific grammatical devices—see §6.2.2.)

The oblique arguments of α verb roots are fairly free with respect to constituent ordering, occurring in a wide variety of positions, although an immediately preverbal position is the most common. For example, the oblique argument of *kasipu* “angry” occurs before the verb in (558) and after the verb in (559).

(558) $\overbrace{\text{Raratuiri oirara=re}}^{\text{OBL}}$ $\overbrace{\text{kasipu-ro-erao}}^{\text{V}}$ *uvare aue-ro*
 Raratuiri people=ALL angry-3SG.M β -HAB because DEM.???-PL.CL
poko-pie-pa-i-veira
 explode-CAUS-CONT-3PL β -HAB
 Raratuiri is angry at everyone because they blew things up.

(559) *riako-va ora-kaa-o-pa* $\overbrace{\text{kasipu-pa-oro}}^{\text{V}}$ $\overbrace{\text{vatura-toa=re}}^{\text{OBL}}$
 woman-SG.F RR-hang-3SG.F α -RP α angry-CONT-DEP.SIM husband-SG.M=ALL
 The woman hanged herself while she was mad at her husband.

The oblique arguments of β verb stems are also fairly free with respect to constituent ordering, occurring in a wide variety of positions, although an immediately preverbal position is the most common. For example, the oblique argument of *koroto* “meet” occurs before the verb in (560) and after the verb in (561).

(560) *ragai ava-pa-ra-i* $\overbrace{\text{Pita=re}}^{\text{OBL}}$ $\overbrace{\text{koroto-sia}}^{\text{V}}$ *eisi raivaro*
 PPRO.1.SG go-CONT-1SG α -PRES α Peter=ALL meet-DEP.SEQ LOC road
 I’m going to meet Peter on the road.

(561) *vii* $\overbrace{\text{koroto-pa-ri}}^{\text{V}}$ $\overbrace{\text{Sera=re}}^{\text{OBL}}$
 2.SG meet.with-CONT-2SG β Sera=ALL
 You’re going to meet with Sera.

8.3.3 Oblique Marking

Although verb roots that select an oblique argument are mixed with respect to their form of agreement (i.e., some show α agreement while others show β), the form of agreement does not appear to be predictable simply on the basis of the form of oblique marking. In other words, verb roots with α agreement co-occur with the same set of oblique markers as verb roots with β agreement. In the following sections, each of the four postpositional enclitics that verb roots select for will be examined and shown to be completely orthogonal to verb root agreement classification, as illustrated in Table 8.5.

Verbal Agreement	Form of Oblique Marking			
	= <i>ia</i>	= <i>va</i>	= <i>re</i>	= <i>pa</i>
Class α	✓	✓	✓	✓
Class β	✓	✓	✓	✓

Table 8.5: Verbal Agreement and Oblique Marking in Monovalent Verb Roots

The choice of postpositional enclitic is not obviously predictable on semantic grounds. If the choice of postpositional enclitic were made on purely semantic grounds, one might expect similar roles in verbs with similar meanings to select the same postpositional enclitic, but this is not always the case. For example, the verb root *koroto* “meet” selects the postpositional enclitic =*re* while *aivaro* “meet” selects the postpositional enclitic =*va*, despite having very similar meanings.

8.3.3.1 Verbs that Select the Enclitic =*ia*

A number of verb roots that take an oblique argument select for the postpositional enclitic =*ia*. A few representative examples of these verbs are listed in Table 8.6.

Class	Verb Stem	Gloss
α	<i>erava</i>	“sing”
	<i>kavorou</i>	“covet, keep something intended for another, intercept”
	<i>vui_{pa}</i>	“think, visualize something continually”
β	<i>avea_{vero}</i>	“incite to anger”
	<i>kuga</i>	“bump into, nudge”
	<i>tu</i>	“fasten, strap on the back”

Table 8.6: Verbs that Select the Postpositional Enclitic =*ia*

Some of the verbs that select =*ia* show α subject agreement, as illustrated for the verb root *kavorou* “keep, hold on to” in (562) and the verb root *vui* “think about, visualize” in (563).

(562) *eake=re ragai va-aro=ia kavorou-u-ei monia*
 what=ALL PPRO.1.SG PPRO.3.SG.N-POSS=LOC keep-2SG α -PRES α money
 Why are you keeping my money? [Firchow (1984)]

(563) *rera=ia vui-pa-u*
 PRO.3.SG.M=LOC visualize-CONT-2SG α
 You are constantly visualizing him thinking about him. [Firchow (1984)]

Other verbs that select =*ia* show β subject agreement, as illustrated for the verb root *kuga* “bump into” in (564) and the verb root *tuu* “fasten” in (565).

(564) *vii=ia kuga-pa-a-voi*
 PRO.2.SG=LOC bump_into-CONT-1SG β -PRES β
 I am bumping into you. [Firchow (1984)]

(565) *ora-vaiterei=ia garo-a=va tuu-si-va*
 RR-PRO.3.DL.M=LOC rattan_vine-SG.N=COM fasten-3DL.M-RP β
 The two of them fastened themselves together with rattan vine. [Firchow (1984)]

8.3.3.2 Verbs that Select the Enclitic =re

A number of verb roots that take an oblique argument select for the postpositional enclitic =re. A few representative examples of these verbs are listed in Table 8.7.

Class	Verb	Gloss
α	<i>aite</i>	“call father”
	<i>isiva</i>	“turn back towards”
	<i>kasipu</i>	“be angry”
β	<i>keerapa</i>	“signal for meeting”
	<i>koroto</i>	“meet together”
	<i>tara</i>	“look for, search for”

Table 8.7: Verbs that Select the Postpositional Enclitic =re

Some of the verbs that select =ia show α subject agreement, as illustrated for the verb root *kasipu* “be angry with” in (566) and the verb root *isiva* “turn back towards” in (567).

- (566) *Areipiri kasipu-pa-ro-i* *oira-ra=re* *ora riako-ra*
 Areipiri be_angry-CONT-3SG.M α -PRES α man-HUM.PL=ALL and woman-HUM.PL
 Areipiri is angry at the men and women.

- (567) *ragai=re* *isiva-u* *ava-oro*
 PPRO.1.SG=ALL turn_back-2SG α go-DEP.SIM
 You turn your back towards me as you go.

Other verbs that select =re show β subject agreement, as illustrated for the verb root *uvui* “measure” in (568) and the verb root *tara* “seek, look for, find” in (569).

- (568) *uva uvui-si-epa* *kovo pitupitu-aro=re*
 and measure-3DL.M-RP α work custom-POSS=ALL
 The two of them measured the work. [Firchow and Akoitai (1974:27)]

- (569) *Agiosi aako-va=re* *tara-pa-e-vo*
 Agiosi mother-SG.F=ALL look_for-CONT-3SG.F β -IP β
 Agiosi is looking for (his) mother.

8.3.3.3 Verbs that Select the Enclitic =pa

A number of verb roots that take an oblique argument select for the postpositional enclitic =pa. A few representative examples of these verbs are listed in Table 8.8.

Class	Verb	Gloss
α	<i>agigio</i>	“respect”
	<i>koruou</i>	“sacrifice”
	<i>tauo</i>	“offer in ceremony”
β	<i>kaviko</i>	“love intensely”
	<i>vato</i>	“respect (treat in the appropriate way according to custom)”

Table 8.8: Verb Roots that Select the Postpositional Enclitic =*pa*

Some of the verbs that select the case marker =*pa* show α subject agreement, as illustrated for the verb root *agigio* “respect” in (570) and the verb root *avivike* “honor” in (571).

(570) *oira-ra rutu pautoa=pa agigio-pa-a-veira*
 man-PL.N very God=BEN respect-CONT-3PL α -HAB
 Everyone respects God.

(571) *tuariri-pa-irara oisoa tugara kare=pa koruou-pa-a-ve aue=ia koie*
 long_ago-DERIV- always spirit FP=BEN sacrifice-CONT-3PL α -SUB CONN=LOC pig
 People of long ago would always sacrifice to the bush spirits with pigs.

Other verbs that select the case marker =*pa* show β subject agreement, as illustrated for the verb root *kaviko* “to love” in (572) and the verb root *vato* “to respect, pay honor” in (573).

(572) *ira ovii-toa=pa oisoa kaviko-irao-pa-re-ve*
 RPRO.3.SG.M offspring-SG.M=BEN always love-INTEN-CONT-3SG.M β -SUB
 He always intensely loved his son. [Firchow (1984)]

(573) *eera=pa avue vato-pa-a-veira uva viapau rera*
 DEM.3.SG.M=BEN in-law respect-CONT-1SG β -HAB and NEG PRO.3.SG.M
vaisi-pa-a
 call-CONT-1SG β
 I always respect my in-law here and I don’t say his name.⁴

8.3.3.4 Verbs that Select the Enclitic =*va*

A number of verb roots that take an oblique argument select for the postpositional enclitic =*va*. A few representative examples of these verbs are listed in Table 8.9.

⁴There is a name avoidance taboo in Rotokas culture which applies to in-laws as well as cross-sex siblings. The cross-sex sibling taboo is even stronger, since it militates against usage of the second person singular form, requiring substitution of the second personal plural.

Class	Verb Stem	Gloss
α	<i>kaureo</i>	“contradict, disagree, be stubborn or rebellious”
	<i>keri</i>	“make enemies with, reject friendship”
	<i>oive</i>	“shout, yodel, yell”
β	<i>aivaro</i>	“meet with, bump into”
	<i>kuara</i>	“yell at”
	<i>veku</i>	“bark at”

Table 8.9: Verb Roots that Select for the Postpositional Enclitic =*va*

Some of the verbs that select the case marker =*va* show α subject agreement, as illustrated for the verb root *kaureo* “be stubborn or arrogant” in (574) and the verb root *oive* “shout to” in (575).

(574) *riro-vira oisoa rera=va kaureo-pa-a-ve*
 big-ADV always PPRO.3.SG.M=COM stubborn-CONT-3PL α -SUB
 They were always so stubborn with him.

(575) *Terita Salome=va oive-pa-ro-e*
 Terita Salome=COM yell-CONT-3SG.M α -IP β
 Terita is yelling to Salome.

Some of the verbs that select the case marker =*va* show β subject agreement, as illustrated for the verb root *aivaro* “meet, bump into” in (576) and the verb root *veku* “bark at” in (577).

(576) *Ruri=va aivaro-a-vo eisi raivaro*
 Ruri=COM meet-1SG β -IP β LOC road
 I met Ruri on the road.

(577) *kakau kare ragai=va veku-i-vo eisi Sikoriara*
 dog FP PPRO.1.SG=COM bark-3PL β -IP β LOC Sikoriara
 Dogs bark at me in Sikoriara.

8.4 Bivalent Two-Place Predicates

Bivalent verb stems take two core arguments, a subject and an object, both of which are realized as noun phrases or pronouns (i.e., they do not take oblique marking). The bivalent verb stems can be further subdivided into two subclasses on semantic grounds: two-place predicates and three-place predicates. The vast majority of bivalent verbs are two-place predicates (as opposed to three-place predicates). Their agreement pattern and constituent order will be discussed in turn.

8.4.1 Agreement

Bivalent verb roots invariably show β inflection, as illustrated by (578) and (579).

(578) *vii* ***upo-pa-a-voi***

PPRO.2.SG strike-CONT-1SG β -PRES β

I'm going to hit you. [Firchow and Akoitai (1974:52)]

(579) *uva rakoru upo-re-voi-va* *oira-to* *eira* *raga rasi-to*
so snake strike-3SG.M β -PRES β -RP β person-SG.M DEM.MED.SG.F only ground-SG.M
vuripie-e-va
ruin-3SG.F β -RP β
So that man killed the snake that screwed up the ground. [Firchow and Akoitai
(1974:82)]

8.4.2 Constituent Order

There are two permissible constituent orders for a transitive clause. The canonical constituent order is AOV, as illustrated in (580), but postverbal subjects are relatively common, giving rise to OVA constituent order, as illustrated in (581). This canonical constituent order is the same regardless of which normal subtype A and O belong to (pronoun, proper noun, common noun, classifier, etc.).

(580) *oira-to* *riako-va* *upo-re-vo*
man-SG.M woman-SG.F hit-3SG.M β -IP β
The man hit the woman.

(581) *riako-va* *upo-re-vo* *oira-to*
woman-SG.F hit-3SG.M β -IP β man-SG.M
The man hit the woman.

8.5 Three-Place Predicates: Bivalent or Trivalent?

Rotokas has a number of verbs that are generally characterized as ditransitives in the typological literature, such as “give” or “put”. These verbs subcategorize for an oblique argument. The verb root *vate* “give” selects for an oblique argument marked by the benefactive, as in (582), while the verb root *tovo* “put” selects for an oblique argument marked by the locative, as in (583).

(582) *Rosiovi ira* *akuku-vira kokai* ***vate-re-vo*** ***ragai=pa***
Rosiovi RPRO.3.SG.M free-ADV chicken give-3SG.M β -IP β PRO.1.SG=BEN
Rosiovi gave me a chicken for free.

- (583) *Savia veeta tou poko-pie-e-voi uvare vo-tou tovo-e-voi*
 Savia bamboo CLF explode-CAUS-3SG.F_β-PRES_β because SPEC-CLF put-3SG.F_β-PRES_β
tuitui kasi sovara=ia
 fire inside=LOC
 Savia is making the bamboo explode because he put it in the fire.

This oblique argument of these three-place predicates is optional, as illustrated for the verb root *vate* “give” in (584) and for the verb root *tovo* “put” in (585).

- (584) *ravireo riro-a rutu aau-a vate-pa-re*
 sun big-SG.N very light-SG.N give-CONT-3SG.M_β
 The sun gives strong light.

- (585) *kaveakapie-vira aveke tovo-i-vo uva kove-o-e*
 insecure-ADV stone put-3PL_β-IP_β and fall-3SG.F_α-IP_α
 They placed the stone insecurely and it fell down.

The three-place predicate *vate* “give” potentially takes three arguments: the giver, the gift, and the recipient. The number of core arguments associated with three-place predicates is debatable, at least in the case of *vate* “give”. The recipient is optional, as shown by sentences such as (584) or (586).

- (586) *Tatu gare-pa-visivi moni-a vate-re-voi*
 Tatu small-DERIV-ADV money-SG.N give-3SG.M_β-PRES_β
 Tatu is giving a small amount of money.

The optionality of the recipient suggests that the recipient is not a core argument and that there is no need to posit the existence of trivalent verb roots in Rotokas. On this assumption, three-place predicates would represent a subtype of bivalent verb stems in Rotokas, in keeping with the observation of Dixon (1994:6): “All languages distinguish between clauses that involve a verb and one core noun phrase (intransitive clauses) and those that involve a verb and two or more core NPs (transitive clauses, including ditransitive as a subtype).” There are two construction types associated with three-place predicate verbs: the indirect object construction, discussed in §8.5.3, and the double object construction, discussed in §8.5.4.

8.5.1 Agreement

The form of agreement found on trivalent verb stems is β -agreement, the same type found on bivalent stems with a direct object, as can be seen from (587) and (588).

- (587) *sirao-vira rutu uvare aako upo-ri-voi*
 pity-ADV very because mother strike-2SG_β-PRES_β
 Sadly, you killed my mother. [Firchow and Akoitai (1974:80)]

- (588) *sirao-vira rutu uvare viapau ragai=pa kakae-toa-vai*
 pity-ADV very because NEG PPRO.1.SG=BEN child-SG.M-INDEF
vate-pa-ri-veira
 give-CONT-2SG_β-HAB
 Sadly, you have not given me children. (Behold, thou hast given me no offspring.)
 [Genesis 15:3]

8.5.2 Constituent Order

The canonical three-place predicate is *vate* “give”, which shows two patterns of constituent ordering, depending on whether or not the recipient is case-marked. We will simply refer to these two patterns as constructions and set aside temporarily the question of which is basic and which derived.

For ease of discussion, we will describe the arguments of a trivalent predicate in terms of their semantic roles in a dative verb (e.g., *give*): donor (the agent, the giver), the gift (the person or thing given), and recipient (the person or thing the theme is given to).

8.5.3 Indirect Object Construction

When the recipient is case-marked with the suffix *-pa*, constituent order is more flexible. The theme occurs in its usual fixed preverbal position, as shown by the grammaticality of (589), where the theme occurs immediately before the verb, and the ungrammaticality of (590), where the theme occurs immediately following the verb.

- (589) *Raratuiri kaakau=pa opita isi vate-re-vo*
 name dog=BEN coconut CLASS give-3SG.M_β-IP_β
 Raratuiri gave a coconut to the dog.

- (590) **Raratuiri kaakau=pa vate-re-vo opita isi*
 name dog=BEN give-3SG.M_β-IP_β coconut CLASS
 Raratuiri gave a coconut to the dog.

There is considerable flexibility in the position of the recipient, as shown by the grammaticality of the alternative constituent orderings found in (591) through (593). Although these constituent orders are deemed grammatical by speakers, they are infrequent and texts show few departures from the order found in (589).

- (591) *kaakau=pa Raratuiri opita isi vate-re-vo*
 dog=BEN name coconut CLASS give-3SG.M_β-IP_β
 Raratuiri gave a coconut to the dog.

(592) *Raratuiri opita isi kaakau=pa vate-re-vo*
 name coconut CLASS dog=BEN give-3SG.M_β-IP_β
 Raratuiri gave a coconut to the dog.

(593) *Raratuiri opita isi vate-re-vo kaakau=pa*
 name coconut CLASS give-3SG.M_β-IP_β dog=BEN
 Raratuiri gave a coconut to the dog.

The rightward displacement of the subject is possible, as in (594), but the occurrence of a postverbal theme remains ungrammatical with rightward displacement of A, as in (595) and (596).

(594) *kaakau=pa opita isi vate-re-vo Raratuiri*
 dog=BEN coconut CLASS give-3SG.M_β-IP_β name
 Raratuiri gave me a coconut.

(595) **kaakau=pa vate-re-vo opita isi Raratuiri*
 dog=BEN give-3SG.M_β-IP_β coconut CLASS name
 Raratuiri gave a coconut to the dog.

(596) **vate-re-vo kaakau=pa opita isi Raratuiri*
 give-3SG.M_β-IP_β dog=BEN coconut CLASS name
 Raratuiri gave a coconut to the dog.

8.5.4 Double Object Construction

When the recipient appears as a bare NP (i.e., without oblique marking), it occupies the position normally held by the object, and the theme occurs postverbally, as illustrated by (597) and (598).

(597) *Raratuiri ragai vate-re-vo opita isi*
 name PRO.1.SG give-3SG.M_β-IP_β coconut CLASS
 Raratuiri gave me a coconut.

(598) *uva aako-va vate-e-va rera ovii-to*
 so mother-SG.F give-3SG.F_β-RP_β PRO.PER.3.SG.M son-SG.M
 He gave the boy to his mother. [Firchow and Akoitai (1974:79)]

Elicitation confirms that the theme cannot occur preverbally, as in (599).

(599) **Raratuiri ragai opita isi vate-re-vo*
 name PRO.1.SG coconut CLASS give-3SG.M_β-IP_β
 Raratuiri gave me a coconut.

The rightward displacement of the subject is possible with three-place predicates, as in (600). A preverbal recipient and theme remain ungrammatical with rightward displacement of the subject, as illustrated by (601).

(600) *ragai vate-re-vo opita isi Raratuiri*
 PRO.1.SG give-3SG.M β -IP β coconut CLASS name
 Raratuiri gave me a coconut.

(601) **ragai opita isi vate-re-vo Raratuiri*
 PRO.1.SG coconut CLASS give-3SG.M β -IP β name
 Raratuiri gave me a coconut.

There is mixed evidence with respect to the status of the postverbal theme. Although the lack of oblique marking suggests that it is a core argument, there is evidence in favor of its oblique status—see §9.1.2 on three-place predicates derived from two-place predicates through causativization.

8.6 Conclusion

In this chapter, the valency of verb roots in Rotokas was overviewed. On the basis of a number of cross-cutting distinctions (the number of participants, the number of core arguments, and the form of verbal inflection), six verb classes were recognized. These five classes are the product of the interaction between these various factors. The relationship between predicate type (i.e., the number of actants/participants in a verb’s logical structure) and the number of core arguments (i.e., the number of core arguments a verb requires) is summarized in Table 8.10.

Core Arguments	Participants		
	1	2	3
1	✓	✓	–
2	–	✓	✓

Table 8.10: Relationship Between Predicate Type and Valency

Table 8.10 shows that the number of core arguments is only weakly predictable on the basis of the number of participants associated with a predicate. The number of core arguments is always less than or equal to the number of participants and there is very little evidence in favor of positing the existence of clauses involving more than two core arguments.

The relationship between valency and verbal inflection (α versus β) is summarized in Table 8.11.

Core Arguments	Verbal Inflection	
	α	β
1	✓	✓
2	–	✓

Table 8.11: Relationship Between Valency and Verbal Inflection

Table 8.11 shows that verbal inflection is partially predictable on the basis of the number of core arguments, but not necessarily vice-versa: if a verb takes two core arguments, it necessarily shows β inflection, but if a verb shows β inflection, it does not necessarily take two core arguments.

The findings described in this chapter do not support the simple hypothesis that there is a one-to-one relationship between valency and verbal agreement. Verb roots that take two core arguments consistently shows β agreement whereas verb roots that take a single core argument are split: some show α agreement while others show β agreement. The evidence from underived verb roots therefore rules out a one-to-one relationship, which leaves three possibilities for the mapping between grammatical roles and verbal agreement, as shown below in Table 8.12.

Possible Configuration	Role	Inflection
One-to-One	S — α A — β	
Split-S	S \searrow α A \searrow β	
Split-A	S \swarrow α A \swarrow β	
Many-to-Many	S \swarrow α A \searrow β	

Table 8.12: Grammatical Roles and Verb Inflection

Before attempting to formulate a generalization that correctly predicts the distribution of α and β agreement on verbs, it is necessary to examine valency-changing operations—that is, the various mechanisms available in Rotokas for changing (or simply re-arranging) the default valency pattern of verb stems. The behavior of valency-changing derivations provides further evidence of a tight relationship between valency and verb classification, since valency-decreasing derivations typically derive α verb stems whereas valency-increasing derivations typically derive β verb stems, but it also introduces a number of complexities that must be resolved before a comprehensive statement of the distribution of verbal inflection can be formulated.

Chapter 9

Valency-Changing Derivations

In the previous chapter, the valency of verb roots in Rotokas was described and a number of different verb root classes were identified. It was established that verbal inflection is partially predictable from valency, in the sense that bivalent verb roots (which take two core argument) uniformly show β agreement. However, if a verb shows β agreement, it will not necessarily be bivalent, since monovalent verbs (which take a single core argument) are split into two classes—those that take α agreement and those that take β agreement. Furthermore, verbal inflection is also not predictable on the basis of the number of participants (i.e., subcategorized obliques), since two-place monovalent predicates are split between α and β inflection.

In this chapter, we overview the devices for increasing or decreasing the default valency of verb roots. Valency-increasing derivations are discussed in §9.1 and valency-decreasing derivations are discussed in §9.2. Valency changing derivations provide little evidence for an underlying syntactic difference between α and β monovalent verb roots, since the various valency-changing derivations are not sensitive to the distinction; however, they do provide additional evidence in favor of a tight relationship between valency and verbal inflection, since a decrease in valency is associated with α inflection and an increase in valency with β inflection.

9.1 Valency-Increasing Derivations

There are two means of increasing the valency of verb roots in Rotokas: either through zero derivation in the case of labile verbs (§9.1.1) or through suffixation of *-pie* in the morphological causative construction (§9.1.2). In both cases, the derived bivalent verb stem invariably shows β agreement.

9.1.1 Ambivalent Verb Roots

The majority of verb roots show only a single pattern of valency—that is, a given verb root can function only as a monovalent verb stem or as a bivalent verb stem. However, a minority of

verb roots are capable of functioning either as monovalent stems or as bivalent stems, and these will be labelled “ambivalent”. Although the term ‘ambitransitive’ is more commonly used to describe such verbs, the term is eschewed here due to the insistence on a distinction between transitivity (a semantic notion) and valency (a syntactic notion), as previously discussed in §7.3.

9.1.1.1 Labile Ambivalent Verb Roots

Labile verbs are of two types: those where the S of the monovalent verb corresponds to the A of the bivalent verb and those where the S of the monovalent verb corresponds to the O of the bivalent verb. Following Dixon (1994), the former will be referred to as S=A verbs and the latter as S=O verbs.

The verb stem *kavau* “be born/give birth” is representative of the S=O variety, as illustrated in (602), where it takes only one core argument and shows α agreement, and in (603), where it takes two core arguments and shows β agreement.

- (602) *uva riro tarai-irara aaviko keke-i-va ovusia Jisu kavau-ro-epa*
 and big know-HUM.PL star look.at-3PL β -RP β while Jisu be_born-3SG.M α -RP α
 The wisemen looked at the star when Jesus was born.

- (603) *Kivui kaakau kare kavau-e-voi tupereo-vira*
 Kivui dog FFP give_birth-3SG.F β -PRES β one_after_another-ADV
 Kivui gave birth to puppies one after another.

The verb stem *sisiu* “wash, bathe” is representative of the S=A variety, as illustrated by (604), where it takes only one core argument and shows α agreement, and (605), where it takes two core arguments and shows β agreement..

- (604) *aavu-va gapu-vira sisiu-pa-o-i eisi Ivitu*
 grandparent-SG.F naked-ADV wash-CONT-3SG.F α -PRES α LOC Ivitu
 Grandmother is bathing naked in the river Ivitu.

- (605) *riako-va kakae-to sisiu-pa-e-voi uukovi=ia*
 woman-SG.F child-SG.M wash-CONT-3SG.F β -PRES β water=LOC
 The woman is washing the child in the river.

Table 9.1 provides a partial listing of labile verb roots in Rotokas, broken down in terms of the distinction between S=A and S=O. Verbs belonging to the S=O type predominate.

Type	Verb Stem	Monovalent (α)	Bivalent (β)
S=A	<i>agesi</i>	‘laugh’	‘laugh at’
	<i>aio</i>	‘eat’	‘eat’
	<i>oe</i>	‘vomit’	‘vomit’
	<i>sisiu</i>	‘wash, bathe’	‘wash’
	<i>tavi</i>	‘tell’	‘tell’
	<i>vura</i>	‘look, see’	‘look, see’
	<i>uvu</i>	‘hear, listen, smell’	‘hear, listen, smell’
S=O	<i>aku</i>	‘be salted’	‘cook with salt’
	<i>kaa</i>	‘gag’	‘strangle’
	<i>kaki</i>	‘be cracked open’	‘crack open’
	<i>kasi</i>	‘build fire’	‘burn’
	<i>kavau</i>	‘be born’	‘give birth’
	<i>ori</i>	‘cook’	‘cook’
	<i>papu</i>	‘be extinguished’	‘extinguish’
	<i>pau</i>	‘sit’	‘plant, build’
	<i>pura</i>	‘say’	‘make’
	<i>rovo</i>	‘precede’	‘start’
	<i>uvui</i>	‘be able’	‘measure, enable’
	<i>vatatopo</i>	‘ready’	‘prepare’
	<i>vera</i>	‘leave’	‘remove’

Table 9.1: Labile Ambivalent Verb Roots

The general rule is for these verbs to show α agreement when they behave as monovalent verb stems and to show β agreement when they behave as bivalent verb stems.

9.1.1.2 Fixed Ambivalent Verb Roots

There is one class of verb roots that are an exception to the general rule that ambitransitives show α inflection as monovalents and β inflection as bivalents. These ambivalent verb roots show a fixed pattern of inflection, in the sense that they uniformly show β inflection. For example, the verb root *vura* ‘look, see’ is labile, but consistently shows β agreement. In other words, as we would expect, it shows β agreement when it occurs with two core arguments, as in (606) and (607).

- (606) *ora-ruvu-ro-e* *uvare* *rakoru vura-re-vo*
RR-jump-3SG.M α -IP α because snake see-3SG.M β -IP β
He jumped because he saw the snake.

- (607) *tuuta vura-pa-a-voi* *poori-vira* *oa* *tovo-re-vo* *Vaisiri*
 post look_at-CONT-1SG_β-PRES_β crooked-ADV RPRO.3.SG.N place-3SG.M_β-IP_β Vaisiri
va=ia *kepa pura-sia*
 PRO.3.SG.N=LOC house make-DEP.SEQ
 I am looking at the post that crookedly Vaisiri put up to make the house.

However, *vura* also shows β agreement when it occurs with a single core argument, as in (608) and (609).

- (608) *kaaki-to* *katai-toa iava osirei-to vura-pa-re*
 one_eye-SG.M one-SG.M POST eye-SG.M see-CONT-3SG.M_β
 A one-eyed man sees out of one eye.

- (609) *voosi-to* *vearo-pie-re-va* *Jisu voari tuariri oa* *iava*
 blind-SG.M good-CAUS-3SG.M_β-RP_β Jesus long ago RPRO.3.SG.N POST
vura-re-va
 see-3SG.M_β-RP_β
 Jesus healed a blind man long ago and he could see.

This appears to be a property of verbs of perception, to the extent that it is also true of the verb roots *uvu* “hear, smell” and *siovo* “feel”. For example, the verb root *uvu* “hear, smell, taste” functions as a monovalent verb stem in (610) and as a bivalent verb stem in (611), but shows β agreement in both cases.

- (610) *vii-a* *kaureo-to* *viapau uvu-pa-ri-veira*
 PRO.2.SG-SUB stubborn-SG.M NEG hear-CONT-2SG_β-HAB
 You’re stubborn, you don’t listen.

- (611) *pokopoko-ara* *uvu-pa-a-vo* *uvare Patriki pitokava*
 explode.RDP-PL.N hear-CONT-1SG_β-IP_β because Patrick saucepan
ragiragi-pa-re-vo
 beat.RDP-CONT-3SG.M_β-IP_β
 I heard the banging because Patrick beat repeatedly on the saucepan.

9.1.2 Morphological Causative

The causative construction has received a great deal of attention within morphosyntactic typology and has been the subject of numerous studies (Dixon, 2000; Comrie, 1975; Shibatani, 1976; Comrie, 1976, 1985b, 1989; Song, 1996). The prototypical causative construction conforms to the definition provided by Dixon and Aikhenvald (2000) in (612).

- (612) • applies to an underlying intransitive [monovalent] clause and forms a derived transitive [bivalent] clause;

- the argument in underlying S function goes into O function in the causative;
- a new argument is introduced, in A function;
- there is some explicit formal marking of the causative construction

Rotokas has a morphological causative construction that fits the profile provided in (612) to the extent that:

- it applies to underlying monotransitive verb root to derive a bivalent verb stem;
- the original subject of the monotransitive verb root plays the role of O in the derived stem;
- a new argument, the causer, is added to the clause and takes over the role of subject;
- the verb root is marked by the suffix *-pie* (which occurs in Slot 1—see §5.2.2.1)

The alternation can be illustrated using the verb stem *uriri* “be frightened”, a monovalent α verb stem whose base form is illustrated in (613). A morphological causative stem which shows β agreement can be derived from it with the suffix *-pie*, as illustrated in (614).

(613) *uva rei-vira uriri-ra-epa*
 so large-ADV be_scared-1SG $_{\alpha}$ -RP $_{\alpha}$
 I was really scared. [Firchow and Akoitai (1974:19)]

(614) *rera uriri-pie-re-va aue=ia kuuvu-va rakoru*
 PRO.3.SG.M be_scared-CAUS-3SG.M $_{\beta}$ -RP $_{\beta}$ CONN=LOC fake-SG.F snake
 He frightened him with a pretend snake. [Reader, “Ahu”]

Causativization applies to a wide variety of verb root types. In fact, it applies to all of the various predicate types identified in Table 8.1, with the exception of *vate* “give”. In other words, it is not restricted either by valency (monovalent vs. bivalent) or by agreement types (α vs. β). Some examples of bivalent verb stems derived from monotransitive verb roots with *-pie* are provided in Table 9.2.

Inflection	Monovalent Verb Root	Derived Causative Verb Stem (β)
α	<i>kopii</i> “die”	<i>kopiipie</i> “kill”
	<i>tarai</i> “understand”	<i>taraipie</i> “teach”
	<i>kare</i> “return, go back”	<i>karepie</i> “return something”
	<i>agasi</i> “be full”	<i>agasipie</i> “fill up”
β	<i>aata</i> “swim”	<i>aatapie</i> “make swim”
	<i>papa</i> “fly”	<i>vusipie</i> “fly”
	<i>tugisi</i> “defecate (dog)”	<i>tugisipie</i> “make defecate”
	<i>voka</i> “walk”	<i>vokapie</i> “operate”
	<i>vusi</i> “gush out”	<i>vusipie</i> “make gush out”

Table 9.2: Morphological Causatives Derived From α and β Monovalent Verb Roots

The use of *-pie* with a monovalent α verb root has already been illustrated in (614). Its use with a monovalent β verb root can be illustrated with the verb root *tugisi* “defecate”: its default behavior as a verb root is illustrated in (615) and a bivalent verb stem derived from it with the suffix *-pie* is illustrated in (616).

(615) *kaakau evoa tugisi-e-vo*
 dog there defecate-3SG.F β -PRES β
 The dog pooped there.

(616) *Pita kaakau tugisi-pie-re-voi uvare oira upo-re-voi*
 Pita dog defecate-CAUS-3SG.M β -PRES β because PRO.3.SG.F hit-3SG.M β -PRES β
 Peter made the dog defecate because he hit him.

Use of the causative suffix is not restricted to monovalent verb roots, as can be seen from Table 9.3, which lists a number of bivalent stems that occur with *-pie*.

Bivalent Stem	Causative Stem
<i>aio</i> “eat”	<i>aiopie</i> “feed”
<i>keke</i> “look”	<i>kekepie</i> “show”
<i>kae</i> “carry”	<i>kaepie</i> “lift, hoist, raise”
<i>guvi</i> “reveal”	<i>guvipie</i> “expose, reveal”
<i>pura</i> “make”	<i>purapie</i> “use”
<i>ura</i> “chew”	<i>urapie</i> “make chew betel nut”

Table 9.3: Examples of Causative Suffix *-pie*

The use of the morphological causative with the bivalent verb root *aio* “eat” is illustrated in (617), where the verb stem *aio* “eat” is causativized; the prederivational O (the notional theme) can either be omitted, as in (617a), or appear as an oblique, as in (617b).

(617) a. *kakae vure aio-pie-i-va aako riako*
 child FFP eat-CAUS-3PL β -RP β mother FP
 The mother is feeding the boy.

b. *aako-va kakae-to aio-pie-e-vo itooa=ia*
 mother-SG.F child-SG.M eat-CAUS-3SG.F β -IP β banana=LOC
 The mother is feeding the boy banana.

As Comrie (1989) observes, cross-linguistically, there are three basic possibilities for the syntactic treatment of causativized bivalent verbs, listed below in (618).

(618) 1. the original O retains its status and the causee is peripheral

2. the original O is peripheral and the causee functions as O
3. two objects are permitted: the causee and the original O

The four logical possibilities for the remapping of the arguments of a bivalent verb in a causative construction are listed below in Table 9.4.

	Label	Causer	Causee	Theme
1	Double object	A	O	O
2	Double oblique	A	OBL	OBL
3	Causee-as-O	A	O	OBL
4	Theme-as-O	A	OBL	O

Table 9.4: Mappings of Arguments in Causatives Derived from Bivalent Verb Stems

Rotokas appears to possess two of these four types. It has the causee-as-O construction, where the causee is O and the theme is oblique, as well as a second construction, where the causee is O and the theme is less clearly oblique. The two construction types are illustrated using the causative verb stem *aivaropie* “to introduce”, which is derived from the monovalent verb root *aivaro* “to meet”, a monovalent verb root that takes an oblique argument marked by the postpositional enclitic =*va*, as illustrated in (619).

- (619) *oira-to riako-va=va aivaro-re-vo uva oira piiuu-re-vo*
 man-SG.M woman-SG.F=COM meet-3SG.M_β-IP_β and PRO.3.SG.F grab-3SG.M_β-IP_β
oira=va vuri-a pura-sia
 PRO.3.SG.M=COM bad-SG.N make-DEP.SEQ
 The man met up with the woman and grabbed her in order to do bad with her.

When a bivalent verb stem is derived from *aivaro* “meet” with the causative suffix *-pie*, the causee plays the role of O and the patient/theme occurs as an oblique, marked either by the postpositional enclitic that it normally selects for (*-va* in this case) or by the postpositional enclitic =*ia*, as in (620).

- (620) a. $\overbrace{\text{A=Causer}}{\text{aite-to}} \quad \overbrace{\text{O=Causee}}{\text{ovii-va}} \quad \text{aivaro-pie-re} \quad \overbrace{\text{OBL=Theme}}{\text{oira-toa=ia}}$
 father-SG.M daughter-SG.F meet-CAUS-3SG.M_β man-SG.M=LOC
 The father introduces his daughter to the man.
- b. $\overbrace{\text{A=Causer}}{\text{aite-to}} \quad \overbrace{\text{O=Causee}}{\text{ovii-va}} \quad \text{aivaro-pie-re} \quad \overbrace{\text{OBL=Theme}}{\text{oira-toa=va}}$
 father-SG.M daughter-SG.F meet-CAUS-3SG.M_β man-SG.M=COM
 The father introduces his daughter to the man.

It is also possible for the patient/theme to occur in a postverbal slot, where it normally (though not necessarily) is followed by *tapo* “also”, as in (621).

- (621) $\overbrace{\text{A=Causer}}$ $\overbrace{\text{O=Causee}}$ $\overbrace{\text{O=Theme}}$
aite-to *ovii-va* *aivaro-pie-re* *oira-toa* *tapo*
 father-SG.M daughter-SG.F introduce-3SG.M β man-SG.M also
 The father introduces his daughter to the man.

The status of the postverbal argument in the this second construction is somewhat equivocal, but probably best qualifies as a double object construction. On the one hand, *tapo* “also” could be analyzed as an oblique marker, given that it is often found introducing adjunct noun phrases into the clause, as illustrated in (622) through (624).

- (622) *ruve-pa-i* *arua* *tai* *uvare* *ruve* *tai* *tapo* *vara* *ori-a-vo*
 slimy-CONT-PRES α vegetable CLF because aibika CLF also PRO.3.PL.N cook-1SG β -IP β
 The vegetables are slimy because I cooked them with aibika. [Firchow (1984)]

- (623) *kakae vure* *tou-pa-i-vo* *aite-to* *tapo* *osia* *aako-va* *kopii-o-e*
 child FP be-CONT-3PL β -IP β father-SG.M also as mother-SG.F die-3SG.F α -IP α
 The children were with father when mother died.

- (624) *Rarasori-a* *pogarapa-to* *oira-to* *ira* *tapo* *kovo-pa-e-veira*
 Robinson-SUB white-SG.M man-SG.M RPRO.3.SG.M also work-CONT-3SG.F β -HAB
Sera
Sera
 Robinson is a whiteman who Sera works with.

However, *tapo* is optional for a causative’s postverbal argument, which differs from other oblique arguments by occupying a fixed position in the clause. Any deviations from its postverbal position give rise to ungrammaticality, as in (625).

- (625) * *aite-to* *ovii-va* *oira-toa* *tapo* *aivaro-pie-re*
 father-SG.M daughter-SG.F man-SG.M also introduce-3SG.M β
 The father introduces his daughter to the man.

There is a certain symmetry here, in that direct objects occupy a preverbal position whereas second objects occupy a postverbal position. Also note that the position occupied by the theme in the double object construction resembles the position occupied by the theme in the double object construction of three-place predicate verb roots (e.g., *vate* “give”) (see §8.5.4) and could arguably be considered a single construction.

9.2 Valency-Decreasing Derivations

There are three valency-changing derivations in Rotokas that derive verb stems that show α agreement: the reflexive/reciprocal construction (§9.2.1), noun incorporation (§9.2.2), and the resultative construction (§9.2.3).

9.2.1 Reflexives/Reciprocals

There is no formal distinction between reflexives and reciprocals in Rotokas, as can be seen from (626), where the reciprocal marker *ora-* derives a reflexive/reciprocal verb from the causative verb stem *kopiipie* ‘to kill’ (derived from the verb root *kopii* ‘die’). It is ambiguous between a reflexive and a reciprocal reading.

- (626) *ora-kopii-pie-pa-a-i*
RR-die-CAUS-CONT-3PL $_{\alpha}$ -PRES $_{\alpha}$
They are killing themselves./They are killing each other.

The only explicit means of distinguishing formally between a reflexive and a reciprocal is through use of the adverb *oisiaropavira* (for some speakers, *oisiopavira*), which means ‘mutually’ or ‘reciprocally’.¹

- (627) *oisiaropavira ora-kopii-pie-pa-a-i*
reciprocally RR-die-CAUS-CONT-3PL $_{\alpha}$ -PRES $_{\alpha}$
They are killing each other. (\neq They are killing themselves.)

There are three main reciprocal constructions in Rotokas, which differ formally according to where the prefix *ora-* occurs in the clause. We will look at each separately.

9.2.1.1 Construction 1: Verb Marking

The primary reflexive/reciprocal construction in Rotokas involves the prefixation of *ora-* to the verb stem. This reciprocal construction shows α subject agreement and can be characterized as a valency-decreasing derivation to the extent that it is available for all bivalent verb roots and stems (i.e., verbs with two core arguments, a subject and a direct object). By way of illustration, compare the bivalent clause in (628a) with the derived reciprocal clause in (628b).

- (628) a. *oira kakae-ro riako kakae-ro tario-pa-i-voi*
male child-PL.CL female child-PL.CL chase-CONT-3PL $_{\beta}$ -PRES $_{\beta}$
The little boys are chasing the little girls.

¹The reciprocal adverb *oisiaropavira* is morphologically complex and consists of three morphemes: the base form *oisio* or *oisiaro*, which appears to be related to the complementizer for comparisons of manner; the derivational suffix *-pa*; and the adverbial suffix *-vira*.

- b. *oira kakae-ro ora riako kakae-ro ora-tario-pa-a-i*
 male child-PL.CL and female child-PL.CL RR-chase-CONT-3PL_α-PRES_α
 The little boys and girls are chasing each other.

The verb-marking reciprocal construction also occurs with verbs that are associated with three participants, such as *vate* “give”, as illustrated in (629). Note that the verb shows α inflection and that the object has been demoted to an oblique argument. This can be understood as a consequence of the fact that the reciprocal construction is intransitive and permits only one core argument, forcing any others into the periphery.

- (629) *rotokasi-pa-irara ora aita-pa-irara (oisiaropavira)*
 Rotokas-DERIV-HUM.PL and Aita-DERIV-HUM.PL reciprocally
ora-vatevate-pa-a-i aasi-ara=ia
 RR-give.RDP-CONT-3PL_α-PRES_α belet.nut-PL.N=LOC
 The Rotokas and Aita men are giving each other betel nut.

The demotion of the theme in ditransitive-derived reciprocals resembles the demotion of the theme in ditransitive-derived morphological causatives, already observed in §9.1.2.

The verb-marking reciprocal construction applies productively to bivalent roots/stems, but it does not occur exclusively with such verb stems. There are also a number of monovalent verb roots that enter into it. These verbs can occur with or without the reflexive/reciprocal prefix *ora-* with no obvious change in meaning. For example, the reduplicated verb stem *tupetupereo* “line up” can occur with or without *ora-*, as in (630).

- (630) *balusi-ara (ora)tupetupereo-pa-i rere-pa-oro rasito-a=ia*
 plane-PL.N RR-line.up.RDP-CONT-PRES_α land-CONT-DEP.SIM ground-SG.N=LOC
 The planes lined up (with each other) as they landed on the ground.

A number of verb stems of this type are listed below in Table 9.5.² Some of these would arguably qualify as “natural reciprocals” (Haiman, 1985) or “symmetric predicates” (Langendoen, 1992).

²This list is not exhaustive and simply lists those verbs stems that were readily identifiable in the author’s lexical database of Rotokas (Robinson and Mon, 2006).

Verb Stem	Gloss	Notes
<i>paupau</i>	race	
<i>pekapekara</i>	line up	
<i>riga</i>	spread, scattered	
<i>sekari</i>	shake hands	Tok Pisin loan
<i>takato</i>	argue	
<i>tava</i>	sun bathe	
<i>topogo</i>	be reckless or careless	
<i>tupetupereo</i>	in pairs	
<i>uugaa</i>	kiss	
<i>virato</i>	segregated, refined	
<i>viru</i>	move	

Table 9.5: Monovalent Verb Roots Capable of Occuring with the Reflexive/Reciprocal Marker

9.2.1.2 Construction 2: Pronoun Marking

There is a second reflexive/reciprocal construction type that differs from the first to the extent that the prefix *ora-* occurs on an oblique-marked pronoun, and not on the verbal complex. For example, in (631), reciprocal marking occurs on the third person plural masculine pronoun, which is an oblique argument of the verb stem *reasi* ‘dislike’.

- (631) *oira kakae-ro ora riako kakae-ro (oisiaropavira) ora-voea=pa*
 male child- and female child- reciprocally RR-3.PL.M=BEN
reasi-pa-a-i
 dislike-CONT-3PL_α-PRES_α
 Little boys and girls dislike each other.

Prefixation of *ora-* to the verb stem is not possible for the verb *reasi*, as shown by the ungrammaticality of (632).

- (632) **oira kakae-ro ora riako kakae-ro ora-reasi-pa-a-i*
 male child- and female child- RR-dislike-CONT-3PL_α-PRES_α
 Little boys and girls dislike each other.

The difference between verb and pronoun marking reciprocal constructions has to do with the distinction between core and oblique argument (Andrews, 2007). The prefix *ora-* occurs on the verb when a verb takes a direct object (core argument) but on an oblique-marked pronoun when a verb takes an oblique argument. It does not matter whether the verb with an oblique argument shows α or β agreement. For example, the verb root *tara* ‘look for’ also takes an oblique argument but shows β agreement, as illustrated in (633). Yet reciprocals based on this verb are pronoun marking, as can be seen in (635).

- (633) *oira-ra riako-ra=re tara-pa-i-voi*
 man-HUM.PL woman-HUM.PL=ALL seek-CONT-3PL_β-PRES_β
 The men are looking for the women.
- (634) * *oira-ra ora riako-ra oisiaropavira ora-tara-pa-a-i*
 man-HUM.PL and woman-HUM.PL reciprocally RR-look-CONT-3PL_α-PRES_α
 The men and women are looking for each other.
- (635) *oira-ra ora riako-ra (oisiaropavira) ora-voea-re*
 men-HUM.PL and women-HUM.PL reciprocally RR-PRO.3.PL.M=ALL
tara-pa-a-i
 seek-CONT-3PL_α-PRES_α
 The men and women are looking for each other.

As we might expect given the previously described core/oblique distinction, the prefix *ora-* also occurs on pronominal adjuncts, as in (636).

- (636) *vo-vokiaro uva oisoa ora-vaiterei ruvara=ia uusi-pa-si*
 SPEC-night and always RR-PRO.3.DL.M near=LOC sleep-CONT-3DL.M
 During the night they slept next to each other.

9.2.1.3 Construction 3: Noun Marking

Whereas the difference between the two previous constructions has to do with the distinction between core and oblique arguments, this third reciprocal construction type is more semantically restricted. It is only found when the reflexive or reciprocal action is performed on body parts, as illustrated in (637).

- (637) *riako-va ora oira-to aitereia pau-pa-si-ei paupaa=ia uva*
 woman-SG.F and man-SG.M PPRO.3.DL.M sit-CONT-3DL.M-PRES_α chair=LOC and
ora-vavae-aro tapatapa-pa-si-ei
 RR-hand-POSS hit.RDP-CONT-3DL.M-PRES_α
 A man and a woman, the two of them sit in a chair and hit each other's hands. [RR:#54, TT]

Although it may seem that this construction involves the incorporation of a body part term into the verbal complex, much like object incorporation (see §9.2.2), there are good reasons to reject such an analysis. First, incorporated objects are bare stems, devoid of any morphology, as shown by the contrast between the transitive clause (638a) and its counterpart with object incorporation in (638b), which lacks the classifier and postpositional enclitic.

- (638) a. *ragai opita isi-re tara-pa-a-voi*
 PRO.1.SG coconut CLASS=ALL seek-CONT-1SG_β-PRES_β
 I'm looking for a coconut.

- b. *ragai opita tara-pa-ra-i*
 PRO. 1.SG coconut seek-CONT-1SG_α-PRES_α
 I'm looking for coconuts.

However, in the noun marking reciprocal constructions, body part nouns take possessive morphology (-*aro*), as already seen in (637).

Second, whereas noun incorporation consistently displays α inflection, the noun marking reciprocal construction does not show a consistent form of agreement, as can be seen in (639), where either α or β agreement is possible. (It is unclear at present whether there is any semantic or syntactic difference between the α and β noun marking reciprocals.)

- (639) a. *ora-kagave-aro upo-pa-si-ei*
 RR-face-POSS hit-CONT-3DL.M-PRES_α
 They are hitting each other in the face.
- b. *ora-kagave-aro upo-pa-si-voi*
 RR-face-POSS hit-CONT-3DL.M-PRES_β
 They are hitting each other in the face.

Third, whereas adverbials cannot intervene between an incorporated noun and the incorporating verb stem, as in (640), no such constraint operates with body-part reciprocals, as shown by the contrast between object incorporation in (640) and noun-marked reciprocals in (641).

9.2.1.3.1 Incorporation

- (640) a. *ikau-vira opita kuri-pa-ra-i*
 run-ADV coconut scrape-CONT-1SG_α-PRES_α
 I am quickly coconut-scraping.
- b. **opita ikau-vira kuri-pa-ra-i*
 coconut run-ADV scrape-CONT-1SG_α-PRES_α
 I am quickly coconut-scraping.

9.2.1.3.2 Reflexive/Reciprocal

- (641) a. *ora-kagave-aro oisiaropavira upo-pa-si-ei*
 RR-face-POSS reciprocally hit-CONT-3DL.M-PRES_α
 They are hitting each other in the face.
- b. *oisiaropavira ora-kagave-aro upo-pa-si-ei*
 reciprocally RR-face-POSS hit-CONT-3DL.M-PRES_α
 They are hitting each other in the face.

The distribution of reciprocal construction types in Rotokas is predicted by a combination of factors. Unless the reciprocal action in the clause is performed on a body part, in which case the noun marking construction will be found, the general rule is: a reciprocal situation described by a verb with two core arguments will be verb marking whereas one described by a verb with a single core argument will be pronoun marking. However, there are unexplained exceptions to the general rule. For example, the verb *reo* “talk” is a monovalent verb root which takes α subject agreement and encodes the addressee as an oblique argument, as in (642).

- (642) *pisipisia-vira Rarasiore reo-pa-ro-e kakae vure=re*
 different-ADV Robinson talk-CONT-3SG.M α -IP α child FP=ALL
 Robinson speaks differently to the children.

Although we would expect the prefix *ora-* to occur on a pronominal oblique argument, this is not in fact what happens, as can be seen from (643), which shows verb-marking.

- (643) *Pita vaio ora Jon oavuavu=ia ogaoga-vira ora-reo-pa-si-e*
 Pita ANIM.DL and Jon something=LOC whisper.RDP-ADV RR-talk-CONT-3DL.M-IP α
 Peter and John are whispering to one another about something.

This could be treated as a lexical idiosyncrasy, thereby preserving the general rule; however, this raises some questions concerning the nature of the difference between verb marking and pronoun marking reciprocals. It may prove to be the case that a grammatical generalization couched in terms of the distinction between core and oblique can be derived from lexical semantics via some sort of linking algorithm (Levin and Hovav, 2006; Van Valin Jr., 2005), and a full account of this mapping might better explain the distribution of construction types. Whatever the final analysis proves to be, these considerations underscore the challenges reciprocals pose for an account of transitivity and argument structure not just in Rotokas but also cross-linguistically (Evans et al., 2007).

9.2.2 Noun Incorporation

Noun incorporation is a phenomenon where a noun occurs tightly bound or attached to the verb, rather than in its canonical position (Anderson, 1985; de Reuse, 1964; Mithun, 1984, 1986; Rosen, 1989; Sadock, 1986; Sapir, 1911). In Rotokas, both direct objects and oblique arguments are capable of being incorporated. The incorporation of a direct object is illustrated with the bivalent verb root *ou* “get” in (644) and the incorporation of an oblique argument is illustrated with the monovalent verb root *tara* “search, look for find” in (645).

- (644) *Raupeto oisoa rasi-va kasi-pa-re-ve oiso=re ra revasi-vira*
 Raupeto always dirt-SG.F burn-CONT-3SG.M β -SUB COMP=ALL and red-ADV
kareke-pa-o ra oira=ia vori ou-pa-ro
 appear-CONT-3SG.F α and PRO.3.SG.F=LOC money get-CONT-3SG.M α
 Raupeto cooks dirt in order to turn it red and he gets money from it.

- (645) *eto tara-pa-ro-e* *Siape oisio ra eto kasi-ro*
 fire search_for-CONT-3SG.M_α-IP_α Siape COMP and fire burn-3SG.M_α
 Siape was searching for fire in order to make a fire.

Verb stems that have incorporated arguments consistently show α inflection, regardless of the form of verbal inflection they would normally take with non-incorporated arguments. A bivalent verb root with an incorporated object is illustrated in (646) and a labile verb root with an incorporated object is illustrated in (647). Although these verb stems would normally show β agreement when they take a direct object (a second core argument), they show α agreement when they have incorporated objects.³

- (646) *teapi varo ou-pa-u vao=ia moni-a ari araisi*
 lest clothing get-CONT-2SG_α DEM.PROX.SG.N=LOC money-SG.N but rice
ou-sia eva moni-a
 get-DEP.SEQ DEM.MED.SG.N money-SG.N
 Don't go clothes-buying with this money, because that money is for getting rice.

- (647) *Sirikoiri ratao pura-ro-i kepa=ia aire-pa kepa rera*
 Sirikoiri door make-3SG.F_α-PRES_α house=LOC new-DERIV house PRO.3.SG.M
vo-kepa-aro ra va=ia uusi-ro
 SPEC-house-POSS and PRO.3.SG.N=LOC sleep-3SG.F_α
 Sirikoiri is door-making for his new house, the house in which sleeps.

Incorporated arguments have a number of semantic properties that are identified in Hopper and Thompson (1980) as features of less individuated objects (see §7.3.1 for discussion). The specific features discussed in Hopper and Thompson (1980) are listed below in Table 9.6.

Parameter	Free Nouns	Incorporated Nouns
Specificity	specific	generic
Referentiality	referential	nonreferential
Definiteness	definite	indefinite
Properness	proper	common
Animacy	animate	inanimate
Humanness	human	nonhuman
Volitionality	volitional	nonvolitional
Control	control	non-control

Table 9.6: Properties Relevant to the Individuation of O (Hopper and Thompson, 1980:253)

³It might be argued that the verb root *pura* is not really labile (see §9.1.1) in the sense that its monovalent and bivalent usages do not have a systematically-related meaning (as e.g. *aio* “eat” or *kavau* “give birth” clearly do). It is therefore possible to claim that there are simply two verb roots that happen to be homophonous: one that functions as a monovalent verb stem and shows α agreement and another that functions as a bivalent verb stem and shows β agreement—i.e., *pura*₁ [α] “to say” versus *pura*₂ [β] “to make, do”. However, the prevalence of this type of homophony in the region suggests that there may be a systematically-related meaning.

- (652) *Rarasori kakapiko-a aio-a aio-pa-re-voi uva rera=pa*
 Robinson little-SG.N food-SG.N eat-CONT-3SG.M_β-PRES_β and PRO.3.SG.M=BEN
sirao-pa-ro-e Pita
 feel_sorry-CONT-3SG.M_α-IP_α Peter
 Robinson is eating little food and Peter feels sorry for him.

However, verbs with an incorporated object invariably show α agreement, as illustrated for the incorporated objects in (653) and (654).

- (653) *avuka-va iria atope=ia arua aio-pa-o-i*
 beach-SG.F PRO.3.SG.M coconut_shell=LOC greens eat-CONT-3SG.F_α-PRES_α
 The old woman is eating greens from a coconut shell.

- (654) *Reari ira akoroa=ia aasi aio-pa-ro-i*
 Reari RPRO.3.SG.M betel_net=LOC betel.nut eat-CONT-3SG.M_α-PRES_α
 Reari is chewing betel nut with lime. [(506)]

Noun incorporation is difficult to identify in dependent verbs since dependent verbs lack subject agreement or tense/mood marking (see §6.3.2.1). It is, however, identifiable with verbs that normally take oblique arguments, since they occur as bare nominals (i.e., without classifiers or postpositional role-marking enclitics—see §8.3.3).

9.2.2.2 No Intervening Material Between Verb and Incorporated Noun

Adverbials are normally free to occupy a wide variety of positions within a clause, even intervening between a verb and its direct object (see §6.2.1), as shown in (655) or (656).

- (655) *oira-to koie ikau-vira kaviru-re-vo*
 man-SG.M pig quick-ADV steal-3SG.M_β-RP_β
 The man quickly stole the pig. [(394)]

- (656) *Savere takei pariparikou-vira pura-re-voi rera*
 Savere wall crossed-ADV make-3SG.M_β-PRES_β PRO.3.SG.M
vo-kepa-aro=ia
 SPEC-house-POSS=LOC
 Savere made criss-crossed the wall on his house.

However, the tight association of incorporated nouns and their associated verbs is evident from the fact that adverbials cannot intervene between them (cf. (655)), as shown by the ungrammaticality of (657).

- (657) * *oirato koie ikau-vira kaviru-pa-ro-epa*
 man pig quick-ADV steal-CONT-3SG.M_α-RP_α
 The man quickly stole the pig. [(394)]

9.2.2.3 No Morphology or Oblique Marking on Incorporated Nouns

Another indication of the tight association between incorporated objects and their associated verbs is that arguments that normally appear case-marked appear as bare noun roots when incorporated. For example, the verb root *tara* “search for, look for” normally shows β agreement, as illustrated in (658); however, when the oblique argument is incorporated, oblique marking is not found, as shown by (659). (Also note the absence of a classifier with the incorporated noun.)

(658) *ragai opita isi=re tara-pa-a-voi*
 PRO.1.SG coconut CLASS=ALL seek-CONT-1SG β -PRES β
 I’m looking for a coconut.

(659) *ragai opita tara-pa-ra-i*
 PRO.1.SG coconut seek-CONT-1SG α -PRES α
 I’m looking for coconuts.

It is more difficult to identify noun incorporation with verbs that normally take α agreement since there is no tell-tale change in verbal inflection; however, the lack of oblique marking provides a subtle clue, as can be illustrated with the the verb stem *ruipa* “want”, which normally takes an oblique argument marked by the enclitic =*pa*, as illustrated in (660) and (661).

(660) *oari=pa ruipa-pa-ra-i riako-va*
 DEM.DIST.SG.F=BEN want-CONT-1SG α -PRES α woman-SG.F
 I like that woman.

(661) *pepa-ara=pa ruipa-pa-a-veira oira-ra rutu voeao*
 paper-PL.N=BEN want-CONT-3PL α -HAB man-HUM.PL very DEM.PROX.PL.M
oa sivuka-pa-a-veira
 RPRO.3.SG.N smoke-CONT-3PL α -HAB
 They always want paper, those men who smoke.

When the oblique arguments of verbs are incorporated, they occur as bare nominals without oblique marking. For example, the verb root *ruipa* “want” normally selects for the benefactive postpositional enclitic =*pa*, but no such oblique marking is found in (662) and (663).

(662) *uva riro-vira uuko ruipa-pa-ra-i*
 and big-ADV water want-CONT-1SG α -PRES α
 I really want water.

(663) *ragai kavori-pa-ra-i uuko-va sirova uvare riro-vira kavori*
 PRO.1.SG crayfish-CONT-1SG α -PRES α water-SG.F behind because big-ADV crayfish
ruipa-pa-ra-i
 want-CONT-1SG α -PRES α
 I am crayfish-hunting on the water’s edge because I really want crayfish.

Thanks to the absence of case marking on incorporated nouns, object incorporation is identifiable even in dependent clauses with no person/number/gender marking, provided the verb stem takes an oblique argument marked by a particular postpositional enclitic. For example, the verb root *tara* “seek, search for, look for” shows β agreement and selects for the allative postpositional enclitic *=re*, as illustrated in (664).

- (664) *Agiosi aako-va=re tara-pa-e-vo*
 Agiosi mother-SG.F=ALL look_for-CONT-3SG.F β -IP β
 Agiosi is looking for mother.

When *tara* functions as a dependent verb, it shows no agreement for person/number/gender but its oblique argument still occurs with the usual enclitic (*=re*), as illustrated in (665).

- (665) *oisio ruipa-pa-ra-i ra vore-ta sigo-a=re tara-sia*
 COMP want-CONT-1SG α -PRES α COMP return-2PL knife-SG.N=ALL find-DEP.SEQ
oa viki-ta-vo
 RPRO.3.SG.N lose-2PL-IP β
 I want you guys to return and find the knife that I lost.

However, when the verb root *tara* “seek” functions as a dependent verb with an incorporated object, no oblique marking is present, as illustrated in (666) and (667), where the patient/theme *atari* “fish” occurs as a bare nominal without the enclitic *=re*.

- (666) *vegei roko-pa-ve eisi-re avaka-va atari tara-sia*
 PRO.1.DL go_inside-CONT-1DL LOC=ALL beach-SG.F fish seek-DEP.SEQ
 We’ll go to the beach to seek fish.

- (667) *kakae vasie varu tara-sia ava-a-e vo-vegoaro*
 child CLASS meat seek-DEP.SEQ go-3PL α -IP α SPEC-jungle
 The boy are going meat-finding in the jungle.

9.2.3 Resultatives

In addition to the various constructions that clearly qualify as valency-changing derivations, there is another derivational suffix, *-piro* or *-viro*, that also systematically affects verb classification.⁴ It is illustrated in (668) and (669). The form *-piro* is found with neuter subjects, as in (668), whereas the form *-viro* is found with non-neuter subjects, as in (669) (see §5.2.2.4).

- (668) *epusi ragai gagarike-e-vo uva gagoago-ara pura-piro*
 cat PRO.1.SG scratch-3SG.F β -IP β and scratch-PL.N make-RES
 A cat scratched me and left a sore.

⁴Firchow (1987) describes the two forms as *-(u)viro* and *-piro*. It is unclear why he attributes *u* to the suffix since there is no evidence of its presence in Firchow’s materials or my own.

- (669) *Rusire perete gaveru-e-voi uva pege-o-viro-i*
 Rusire plate lose_grip-3SG.F_β-PRES_β and break-3SG.F_α-RES-PRES_α
 Rusire lost her grip on the plate and it is broken.

Firchow (1987) characterizes the suffix that marks this construction as the “completive” suffix but this characterization is questionable given that the form co-occurs with the continuous suffix (see §5.2.2.3), as illustrated in (670) and (671).

- (670) *gesio-pie-vira rutu aio-pa-piro-i arua tai uvare va*
 taste-CAUS-ADV very eat-CONT-RES-PRES_α vegetable CLASS because PRO.3.SG.N
kuvu-e-vo aue=ia veeta
 pack-3SG.F_β-IP_β CONN=LOC bamboo
 The vegetables are tasty (literally, eat tastily) because he packed them in bamboo.

- (671) *kakae vure kosikosi-pa-viro-i kepa sovara iava*
 child FP come_out.RDP-CONT-RES-PRES_α house inside POST
 The children have come outside of the house.

These suffixes are consistently associated with α verbal inflection. The effect of the suffix on verbal inflection can be illustrated with the labile verb root *ori* “cook” (see §9.1.1). It shows α agreement when it takes a single core argument, as in (672) and β verb agreement when it takes two core arguments, as in (673).

- (672) *Vitera okote-sia ava-o-e igei=re kasipu-pa-oro*
 Vitera crab-DEP.SEQ go-3SG.F_α-IP_α PRO.1.PL.EXCL=ALL angry-CONT-DEP.SIM
uvare viapau ori-i-e
 because NEG cook-1PL.EXCL-IP_α
 Vitera went to collect crabs, mad at us because we didn’t cook.

- (673) *Ireviri koorato siare-aro ori-re-voi*
 Ireviri possum innards-POSS cook-3SG.M_β-PRES_β
 Ireviri is cooking the possum’s innards.

Because *ori* “cook” is a labile verb of the S=A type, its subject corresponds to the semantic role of actor/agent. However, when the verb root occurs with the resultative suffix, its subject corresponds to the semantic role of patient/theme and the verb shows α agreement, as illustrated in (675).

- (674) *Rusire arua tai ori-e-vo akurovu=ia uva vearo-pie-vira rutu*
 Rusire vegetable CLASS cook-3SG.M_β-IP_β salt=LOC and good-CAUS-ADV very
ori-piro
 cook-RES
 Rusire cooked vegetables in salt and they cooked well.

- (675) *araisi tovure-vira ori-o-viro-i*
 rice soggy-ADV cook-3SG.F_α-RES-PRES_α
 The rice was cooked soggy.

Because of the remapping of semantic roles that occurs with this suffix, it is tempting to analyze it as an agentless passive. However, the characterization of this suffix as a valency-decreasing derivation is questionable, given that the objective resultative construction also occurs with monovalent verb stems. For example, the verb *kare* “return” normally shows α agreement, as in (676), and this does not change when it is used in the objective resultative construction, as in (677).

- (676) *Pera turituri-vira kare-ro-e eisi=va sikuru-a*
 Pera direct.RDP-ADV return-3SG.M_α-IP_α LOC=ABL school-SG.N
 Pera returned directly from school.

- (677) *riuriu-vira raga Saro kare-ro-viro-i vo=va vegoaro*
 dirty-ADV only Saro return-3SG.M_α-RES-PRES_α SPEC=ABL jungle
 Saro returned from the jungle dirty.

The occurrence of the resultative suffix with monovalent verb stems is not simply an idiosyncrasy that could be explained away in terms of lexicalization, since it occurs with a number of other monovalent verb stems in addition to *kare* “return”. For example, it occurs with the α monovalent root *kosi* “come out” in (678) and with the β monovalent root *pou* “arrive” in (679).

- (678) *avavarao-pa-vira raga kosi-ro-viro kove-sia vo-garasi ivara=ia*
 dizzy-CONT-ADV only come.out-3SG.M_α-RES fall-DEP.SEQ SPEC=grass above=LOC
 He went outside dizzily and fell down on top of the grass.

- (679) *Riki ora-vikiviki-irao-ro-i roru-pa-oro ovusia aite-to*
 Riki RR-jump.RDP-INTEN-3SG.M_α-PRES_α happy-CONT-DEP.SIM while father-SG.M
pou-ro-viro-i kotokoto-ara=va
 arrive-3SG.M_α-RES-PRES_α cargo-PL.N=COM
 Riki jumped up and down happy when father arrived with cargo.

This construction is also found with bivalent verbs. Its use with the bivalent verb stem *ori* “cook” was already provided in (675). Since *ori* “cook” is labile (see §9.1.1), it is useful to provide a less equivocal example, such as the verb stem *poroporo* “shatter”. It is a bivalent stem which normally shows β agreement, as in (680), but shows α agreement when used in the objective resultative construction, as in (681).

- (680) *Pita siveri poroporo-pa-re-voi torara=ia*
 Peter cement shatter-CONT-3SG.M_β-PRES_β axe=LOC
 Peter is shattering the cement with a rock.

- (681) *Pita siveri vuro-re-voi avike=ia uva poroporo-o-viro-i*
 Peter cement throw_at-3SG.M_β-PRES_β rock=LOC and shatter-3SG.F_α-RES-PRES_α
 Peter threw rocks at the cement and it shattered.

Although the resultative suffix is found with bivalent verb roots, it does not occur with bivalent verb stems derived with the causative suffix *-pie*. In this respect, the resultative differs from other valency-reducing suffixes (e.g., the reflexive/reciprocal), which can be “fed” by the causative suffix (cf. (626)).

The verb forms marked by *-piro* and *-viro* would be characterized as “objective resultatives”: “the underlying subject of the state (which is expressed by the surface object of the stative predicate) is co-referential with the underlying subject of the preceding action, while in the case of the objective resultative it is co-referential with the underlying object of the latter” (Nedjalkov and Jaxontov, 1988:9). Nedjalkov and Jaxontov (1988:6) characterize resultatives as “verb forms that express a state implying a previous event”, distinguishing them from statives as follows: “the stative expresses a state of a thing without any implication of its origin, while the resultative expresses both a state and the preceding action it has resulted from”.

The objective resultative does not co-occur with other valency-changing derivations. It is incompatible with the causative suffix and the reflexive suffix.

9.3 Conclusion

Although one of the strongest generalizations made concerning verbal inflection in verb roots—i.e., that a verb stem that has a direct object will show β agreement—is couched in terms of valency, the evidence from valency-changing derivation is more equivocal. The behavior of valency-increasing derivations supports this generalization and the reflexive/reciprocal construction provides additional evidence for a fundamental distinction between monovalent and bivalent verb stems, but noun incorporation and the resultative construction are not as obviously syntactic. In fact, the distinction between core and non-core arguments does not appear to be relevant to noun incorporation, since both direct objects and oblique arguments are able to incorporate and the reflexive/reciprocal and resultative construction do not apply exclusively to bivalent verb roots.

	Default Inflection		Valency Arguments	Causative	Reflexive/Reciprocal	Noun Incorporation	Resultative
1	α	1	S, –	✓	✓	–	✓
2	β	1	S, –	✓	–	–	✓
3	α	1	S, Oblique	✓	–	✓	?
4	β	1	S, Oblique	✓	–	✓	?
5	β	2	A, O	✓	✓	✓	✓
6	β	2	A, O, Oblique	–	✓	✓	?

Table 9.7: Relationship Between Verb Root Classes and Valency-Changing Derivations

In the following chapter, more in-depth analysis of semantic roles and their realization in Rotokas will be provided in order to pursue the idea that the distinction between α and β agreement cannot be formulated in terms of simple grammatical roles, but requires reference to a more articulated semantic event structure.

Chapter 10

The Semantics of Split Intransitivity in Rotokas

In Chapter 8 and Chapter 9, valency in Rotokas was described and found to be an imperfect predictor of verbal inflection. Derived verb stems show a fairly consistent pattern of verbal inflection: with the exception of reflexives/reciprocals, derived monovalent verb stems take α inflection while derived bivalent verb stems take β inflection. However, monovalent verb roots (underived by definition) are split between two classes: those that take α inflection and those that take β inflection. Since verbal inflection is not predictable on the basis of valency alone, it remains to be seen whether it can be predicted on semantic grounds. The semantic basis of Rotokas split intransitivity is discussed in §10.1 and the semantic roles associated with the various grammatical roles found in Rotokas are examined in §10.2. In the following chapter, these results are situated within a broader typological context and the wider implications of the split intransitivity found in Rotokas are discussed.

10.1 Semantic Classes of Split Intransitivity

There are four broadly-defined semantic classes where the distinction between α and β monovalent verb roots emerges more clearly: verbs of motion (§10.1.1), verbs of bodily process (§10.1.2), verbs of sound emission (§10.1.3), and (for want of a better label) verbs of “inferred causation” (§10.1.4). Each is discussed in turn.

10.1.1 Motion

Verbs of motion are verbs that lexicalize a motion event—i.e., “a situation containing movement or the maintenance of a stationary location” (Talmy, 1985). Talmy (1975, 1985, 2007) distinguishes between various components in the semantics of motion, listed in (682).

(682) **figure** “a moving or conceptually movable object whose path or site is at issue”

- ground** “a reference-frame, or a reference object stationary within a reference-frame, with respect to which the Figure’s path or site is characterized” (Talmy, 2007:71)
- source** the start point of the moved object
- path** “the path followed or site occupied by the Figure object with respect to the Ground object” (Talmy, 2007:70)
- goal** the end point of the moved object
- manner** the particular way in which the movement occurs
- cause** the cause of the motion event (a human actor, an event, or simply gravity)

These various components of a motion event can be illustrated with a few sentences from Rotokas. In (683) through (685), three different motion events are described that involve rolling objects. In (683) and (684), the motion event is encoded as an intransitive verb. In (683), the downward trajectory (the path) is inferred from context and the manner is lexically specified by the verb; in (684), the downward trajectory is explicitly specified by the main verb while the manner is specified by the dependent verb. In (685), the motion event is encoded as a transitive verb, where the cause plays the role of subject and the moved object plays the role of object.

(683) *pukui-a iava peri-piro-i opita isi uva Tate upo-voi kukue iava*
 mountain-SG.N POST roll-RES-PRES_α coconut CL and Tate hit-PRES_β head POST
 The coconut has rolled down from the mountain and hit Tate on the head.

(684) *oira-to periko-pa-oro pukui-a iava kove-ro-e uvare*
 man-SG.N roll-CONT-DEP.SIM mountain-SG.N POST fall-3SG.M_α-IP_α because
rera rita-i-voi
 PPRO.3.SG.M shoot-3PL_β-PRES_β
 The man fell rolling down the mountain because they shot him.

(685) *vuruko-a peri-re-vo Iteirea eisi vaesi-a*
 log-SG.N roll-3SG.M_β-PRES_β Iteirea LOC mountain-SG.N
 Iteirea rolled the log down the mountain.

As can be seen in the contrast between (683) and (684), verbs of motion in Rotokas are not uniform in their verb classification. While some monovalent verb roots denoting motion events take α inflection, others take β inflection. For example, the verb root *ava* “go” is an α verb, as illustrated in (686), while the verb root *voka* “walk” is a β verb, as illustrated in (687).

(686) *Riopeiri kakae vure voka-pie-pa-oro ava-ro-e raiva=ia*
 Riopeiri child FP walk-CAUS-CONT-DEP.SIM go-3SG.M_α-IP_α road=LOC
 Riopeiri went along the road walking the children.

(687) *Jon kovuru-vira voka-pa-re-voi raiva=ia*
 Jon cross-ADV walk-CONT-3SG.M_β-IP_β road=LOC
 John walked across the road.

What appears to distinguish motion of verbs with β agreement from motion verbs with α agreement is that the former lexicalize manner of motion. The verbs of motion that show α agreement are more schematic verbs of motion whereas the verbs of motion that show β agreement are more semantically restricted, having a manner component. This emerges fairly clearly from the list of monovalent verbs of motion provided in Table 10.1.

Class α	Class β
<i>ava</i> “go”	<i>aata</i> “swim”
<i>iipa</i> “ascend”	<i>gosigosi</i> “limp”
<i>ira</i> “go first, precede”	<i>ikau</i> “run, speed”
<i>kare</i> “return”	<i>kapere</i> “swim on surface”
<i>koata</i> “enter”	<i>papa</i> “fly”
<i>kosi</i> “go out, exit”	<i>paru</i> “flow, move, go, run”
<i>kove</i> “fall, drop”	<i>raurau</i> “sway back and forth”
<i>urio</i> “come”	<i>roko</i> “enter jungle”
<i>vara</i> “descend”	<i>tou</i> “be, live, reside”
<i>varu</i> “go up”	<i>viku</i> “go to garden”
<i>vore</i> “return”	<i>voka</i> “walk”
	<i>vusi</i> “rush out, erupt”

Table 10.1: Monovalent Verb Roots of Motion in Rotokas

Although many of the motion verbs that take β inflection typically occur with human subjects, they are not subcategorized as such and do occur with inanimate subjects, as illustrated in (688) and (689).

(688) *uva riro-to kiuvu voea=re vusi-re-voi ovusia*
 and big-SG.M wind PRO.3.PL=ALL emerge-3SG.M α -PRES β while
sipiro-pa-a-i
 play-CONT-3PL α -PRES α
 A big wind is rushing out on them while they play.

(689) *Ivitu paru-pa-e-veira vara-pie-vira eisi=re avakava*
 Ivitu flow-CONT-3SG.F β -HAB.ANIM lower-CAUS-ADV LOC=ALL ocean
 Ivitu [a river near Togarao] runs down to the ocean.

10.1.2 Bodily Process

Verbs describing bodily processes (e.g., coughing, sneezing, breathing, defecating, etc.) have been singled out in many discussions of split intransitivity—e.g., the discussion of “verbs of bodily function and process” in Merlan (1985:350) or the discussion of “processes whose domain is an animate body” in Rosen (1984:64).

In Rotokas, the distinction between α and β inflection cuts across the class of bodily process verbs. Some verbs describing bodily processes show α inflection while others show β inflection. For example, the verb roots *vavau* “breathe”, *voevoe* “belch, burp”, and *eavi* “ooze pus” are α , as illustrated by (690) through (692).

(690) *oearo-vu vuri geesi-vira vavau-pa-a-veira*
 PPRO.3.PL-ALT bad smell-ADV breathe-CONT-3PL $_{\alpha}$ -HAB
 Some people have bad breath (literally: breathe in a bad-smelling manner).

(691) *oira-to voevoe-pa-ro-i*
 man-SG.M belch-CONT-3SG.M $_{\alpha}$ -PRES $_{\alpha}$
 The man is belching.

(692) *sipareo vii iava eavi-pa-o-i*
 finger PRO.2.SG POST ooze_pus-CONT-3SG.F $_{\alpha}$ -PRES $_{\alpha}$
 Your finger is oozing pus.

However, other verbs of bodily process show β agreement. For example, the verb roots *ritoko* “defecate (pig)”, *puu* “fart”, and *opoko* “defecate (generic)” show β agreement, as illustrated in (693) through (694).

(693) *ragai rera-aro koie-to ritoko-pa-re-vora evoa*
 PRO.1.SG PPRO.3.SG.M-POSS pig-SG.M defecate-CONT-3SG.M $_{\beta}$ -DP $_{\beta}$ there
 My pig defecated over the there. [Firchow (1984)]

(694) *Seseva riro-vira puu-e-vo uva oira agesi-i-vo oira-ra*
 Seseva big-ADV fart-3SG.F $_{\beta}$ -IP $_{\beta}$ and PPRO.3.SG.F laugh-3PL $_{\beta}$ -IP $_{\beta}$ man-HUM.PL
 Seseva ripped a big fart and people laughed at her.

(695) *aako-va kakae-to iava takato vera-pa-e-voi uvare*
 mother-SG.F child-SG.M POST dangling_turd remove-CONT-3SG.F $_{\beta}$ -PRES $_{\beta}$ because
opoko-re-vo
 defecate-3SG.M $_{\beta}$ -IP $_{\beta}$
 The mother wiped a dangling turd from the child because he defecated.

There is at least one verb whose classification is unclear. It shows α agreement in an example sentence found in Firchow (1984), provided in (696), but β agreement in (697). It is unclear whether this represents a mistake, a change in classification, or inter-speaker variability; however, it does not represent the norm, which is for a verb to be assigned uniquely to one of the two classes of subject agreement.

(696) *repoo-pa-ro-i*
 hiccup-CONT-3SG.M $_{\beta}$ -PRES $_{\beta}$
 He is hiccupping. [Firchow (1984)]

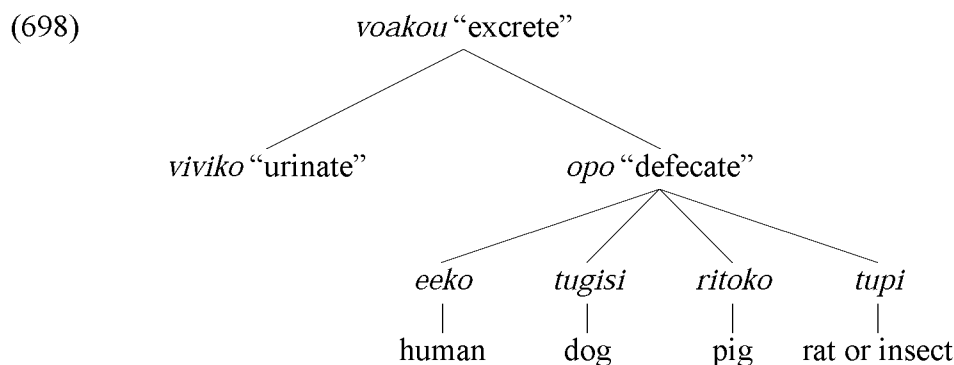
- (697) *Karevaute repoo-re-voi*
 Karevaute hiccup-3SG.M_β-PRES_β
 Karevaute is hiccuping.

A list of verbs of bodily process and their classification as α or β is provided in Table 10.2.

Class α	Class β
<i>asige</i> “sneeze”	<i>opoko</i> “defecate (generic)”
<i>eavi</i> “ooze pus”	<i>eeko</i> “defecate (human)”
<i>kokoisi</i> “sweat, perspire”	<i>pigo</i> “defecate (chicken)”
<i>kuuri</i> “grunt, huff and puff”	<i>puu</i> “fart”
<i>repoo</i> “hiccup”	<i>ritoko</i> “defecate (pig)”
<i>revasi</i> “bleed”	<i>tugisi</i> “defecate (dog)”
<i>vagoto</i> “cough”	<i>tupi</i> “defecate (rat or insect)”
<i>vavau</i> “breathe”	<i>voakou</i> “excrete (urine or feces)”
<i>voevoe</i> “belch”	<i>viviko</i> “urinate”

Table 10.2: Bodily Process Verbs in Rotokas

Table 10.2 shows that verbs of bodily process are not uniform with respect to verb classification in Rotokas. The split appears to be between what might be labelled “verbs of excretion”, which uniformly show β inflection, and all other verbs describing bodily processes, which show α inflection. The verbs of excretion in fact represent a hierarchy of lexical hyponymy (Cruse, 1986), as shown in (698). Elicitation work with informants reveals that the verbs specific to a particular type of animal are not truly subcategorized for the animal in question, but rather reflect the type of feces typically produced by such an animal. It is therefore possible to use one of the animal-excretion verbs with a human actor, but the result is perceived to be humorous, since it attributes an unusual state of affairs to a human being.



It is tempting to account for the difference between the two classes of verbs of bodily process in terms of the notion of “control”, which frequently figures into discussion of split intransitivity

(as we will see later in Chapter 10.3). According to this view, the semantic difference between these two classes is that one class consists of bodily processes that are, from the conventionalized viewpoint of the Rotokas cultural worldview, at least in principle controllable (urinating, defecating, and farting), while the other consists of bodily process that are not (bleeding, sweating, coughing).

10.1.3 Sound Emission

There is another semantic field that is found within the class of β intransitives, and these are verbs of sound emission (Snell-Hornby, 1983; Levin and Hovav, 1995a). Verbs of sound emission are verbs whose primary meaning involves the emission of sound (e.g., *creak*, *groan*, or *rumble* in English). They can be distinguished from speech act verbs, whose primary meaning revolves around a communicative act, which typically involves sound as the medium, but not necessarily. For example, in (699) and (700), there is no involvement of sound as the medium of communication in the use of the speech act verb root *tavi* “tell”.

- (699) *roo iava ito-to vao guru-va vevei oa*
 DEM.PROX.SG.M POST banana-SG.M DEM.SG.N leaf-SG.F yellow RPRO.3.SG.N
ragai tavi-pa-i oiso kopi-pa-i vo-guru-va
 PRO.1.SG tell-CONT-3PL β COMP die-CONT-PRES α SPEC-leaf-SG.F
 The yellow leaf of this banana tells me that the leaf is dying.

- (700) *vuuta keke-pa-to igei tavi-pa-re-veira oiso voki-ei o*
 time look-DERIV-SG.M PRO.1.PL.EXCL tell-CONT-3SG.M β -HAB COMP day-PRES α or
ravire vuuta o avi-ei
 sun time or light-PRES α
 The clock tells us that it is night or daytime or morning.

Verbs of sound emission in Rotokas are split between α and β agreement. While some verbs of sound emission show α agreement (e.g., *era* “sing in a high pitch”), others show β agreement (e.g., *pupi* “sing and dance with wind instruments”).

- (701) *riako-ra karapi-vira era-pa-a-veira era-ara rutu=ia vo-voki-ro*
 woman- high-pitched-ADV sing-CONT-3PL α -HAB song-PL.N very=LOC SPEC-day-
rutu=ia
 very=LOC
 The women sing all of the songs in a high pitch every day.

- (702) *Voitari oisioa riro-va=va avurara pupi-pa-re-ve*
 Voitari always big-SG.F=COM large_axe sing-CONT-3SG.M β -SUB
 Voitari always sings with a big axe.

Table 10.3 provides a listing of various verbs of sound emission, classified according to whether they show α or β agreement.

Class α	Class β
<i>era</i> “sing”	<i>aka</i> “open the mouth, shout”
<i>geuru</i> “snarl and spit”	<i>gau</i> “cry, weep”
<i>giigiirau</i> “groan”	<i>gipugipu</i> “whimper”
<i>karapi</i> “sing soprano”	<i>guruko</i> “make noise”
<i>koi</i> “high pitched sound”	<i>kakupie</i> “shout, yodel”
<i>kokovae</i> “sing”	<i>kapuu</i> “dumb, mute”
<i>koova</i> “sing”	<i>koikoi</i> “groan with pain”
<i>kovokovo</i> “play Jew’s Harp”	<i>kokoroku</i> “crow”
<i>kuuri</i> “grunt, huff and puff”	<i>kukuuku</i> “make footfall”
<i>ogaaga</i> “whisper, talk quietly”	<i>pegu</i> “bark”
<i>oive</i> “shout, yodel, yell”	<i>pupi</i> “play bamboo pipes”
<i>ruvaku</i> “low pitch, bass”	<i>vekaveka</i> “gasp”
<i>siiguru</i> “drum, beat drum”	<i>vauvau</i> “make loud chopping noise”
<i>sirava</i> “hiss”	
<i>utave</i> “blow Triton’s trumpet”	
<i>vepu</i> “yell”	
<i>vikuta</i> “whistle”	
<i>viokeke/viokoko</i> “whistle”	

Table 10.3: Sound Emission Verbs in Rotokas

As observed in Levin et al. (1997), verbs of sound emission have not received much attention in the typological literature, and they are largely absent from discussions of split intransitivity. As a result, there are few obvious candidates for semantic differentiation based on the treatment of this semantic field cross-linguistically. However, it is noteworthy that a large number of the verb roots that take β inflection denote discrete events with a well-defined end point (bounded, telic) (Comrie, 1985a; Chung and Timberlake, 1985). For example, although there are verb roots in both classes whose meaning involve the playing of an instrument, the meanings differ in subtle but important respects. Whereas the verb root *kovokovo* “play Jew’s harp” and *pupi* “play bamboo pipes” both denote the playing of an instrument, the former refers to the general activity whereas the latter refers to a performance in the context of a traditional song and dance performance (known as a *singsing kaur* in Tok Pisin).

- (703) *Uriora vata koova-pa-i pupi-pa-oro*
 Uriora CL sing-CONT-PRES α singsing-CONT-DEP.SIM
 The people of Uriora are singing while performing a singsing.

10.1.4 Inferred Causation

There are a number of monovalent β verbs that do not fit neatly within the semantic domains discussed in the previous sections. For example, the verbs *aviavi* “light up”, exemplified in (704), or *sipokoro* “sprout”, exemplified in (705) (which lacks subject agreement due to the fact that its subject is neuter but can be identified as β from the TAM marking).

- (704) *aviavi-re-voi* *parakau-oro* *uva oira-ra* *ora-sita-a-i*
 light_up-3SG.M β -PRES β spread-DEP.SIM and man-HUM.PL RR-startle-3PL β -PRES β
vaasia-vira
 strong-ADV
 The lightning is lighting up the sky and people are startled.

- (705) *kukara takura-aro sipokoro-voi*
 corn seed-POSS sprout-PRES β
 The corn seed is sprouting.

The semantic commonality of the remaining monovalent verb roots that show β agreement is not as easily pinned down. These verbs denote events that can be conceptualized as arising from inherent properties of the entity participating in the event, such as lightning flashing, seeds growing, fire producing smoke, etc. These verb roots are listed below in Table 10.4.

Verb Root	Meaning
<i>koke</i>	make rain
<i>kovo</i>	work, garden
<i>kukuuku</i>	make footfall
<i>parakau</i>	light up, spread across an expanse
<i>pika</i>	splash
<i>raraka</i>	become light
<i>sikere</i>	streak of light, start to shine, dawn
<i>sipokoro</i>	sprout through surface
<i>sipukao</i>	sprout
<i>sipusipu</i>	grow, shoot up
<i>sirusiru</i>	be shiny
<i>siruvau</i>	be good-looking, nice appearance
<i>sisikore</i>	shine, gleam, glisten
<i>ukauka</i>	swish around, splash around

Table 10.4: β Monovalent Verbs of Internal Causation

This semantic class is not as widely recognized in discussion of split intransitivity as verbs of motion or bodily processes, but it is an interesting class, since—unlike the other semantic

classes discussed in the previous section—the verb roots in it do not denote events that necessarily involve an agent (e.g., *aviavi* “light up brightly” in (704)), and in some cases preclude one (e.g., *sipokoro* “sprout” in (705)).

DeLancey (1985) provides a discussion of these event types and their treatment in languages with split intransitivity in which he observes that some types of predicates can be conceptualized as events which cause discrete results, much like transitive predicates.

We can also easily accommodate the ambiguity of the ‘sparkle’ class of predicates, which according to Rosen’s observation sometimes predicate agentivity of their argument in spite of the fact that volition is not only absent but impossible, for here too there is an aspect of the event—the sparkle, in the case of that predicate—which can be conceptualized as simply the perceptual manifestation of the event denoted by the predicate or as a distinct product of the event of sparkling. (DeLancey, 1985:9)

This provides one way of understanding the “agentivity” of verbs such as those listed in Table 10.4. However, a number of the event types discussed in DeLancey (1985) do not show β inflection in Rotokas. For example, predicates such as “bleed”, “vomit”, and “sweat” do not show β inflection in Rotokas, as already observed in §10.1.2.

10.1.5 Conclusion

In the previous sections, the various monovalent verb roots that show β agreement were grouped into a number of semantic fields. These semantic fields are not exhaustive, in the sense that there are a few monovalent verb roots that show β agreement which do not obviously fit into any of these semantic fields—e.g., the verb root *roru* “be happy”, exemplified in (706) and (707).

(706) *uva roru-a-voi rutu uvare vii ragai tauva-ri*
 and be.happy-1SG β -PRES β very because PRO.2.SG PRO.1.SG help-2SG β
 I am glad, because you helped me. [Firchow (1984)]

(707) *roru-pa-i-vo uvare wiri-a aue=ia vorivoro*
 be.happy-3PL β -IP β because win-SG.N CONN=LOC volleyball
 They were happy because of a win at volleyball.

Likewise, the verb root *tou* “to be, exist” also fails to fit neatly into the previously discussed semantic fields. Although it could be construed as a verb of motion, to the extent that it denotes a lack of motion, there is no manner component, and its meaning is quite general, in many cases effectively serving as a copula, as in (708) or (709).¹

¹Comparative research on the East Papuan languages most closely related to Rotokas might shed light on the grammaticalization of *tou*. It seems likely that it once had a more dynamic meaning but has undergone semantic bleaching but retained its former classification due to its high frequency.

(708) *Tutue pukui kaepie-vira tou-pa-i-voi*
 Tutue mountain high-ADV be-CONT-3PL_β-PRES_β
 Mount Balbi is up high.

(709) *riako-va pugu-pa-vira tou-pa-e-voi uvare kakae-to*
 woman-SG.F pregnant-DERIV-ADV be-CONT-3SG.F_β-PRES_β because child-SG.M
oira kovu-aro sovara=ia tou-pa-re
 PRO.3.SG.F belly-POSS inside=ENC be-CONT-3SG.M_β
 The woman is pregnant because a child is inside of her belly.

Given the diversity of event types denoted by the monovalent verbs that show β inflection in Rotokas, it is difficult to extract a single semantic parameter that is common to all of them. While there is a striking “family resemblance” (Wittgenstein, 1953/2001) among the various monovalent verb roots that show β agreement, it is difficult to articulate a set of necessary and sufficient conditions, and there is a risk of lapsing into ad hoc explanations in order to provide a semantic basis for a formal difference that could very well be arbitrary. In the following section, a number of thematic roles will be examined in order to assess the extent to which they are able to predict the previously described patterns of verbal inflection.

10.2 Thematic Roles

Since many theories of split intransitivity make reference to semantic notions (such as agentivity or affectedness), a proper evaluation of them with respect to Rotokas requires a more detailed examination of the semantic roles associated with verbs in Rotokas.

Andrews (2007) observes that a distinction is typically found in languages, and to varying degrees insisted upon by linguistic theory, between two types of case: semantic case and grammatical case. The distinction is sometimes characterized as the difference between core and oblique grammatical functions (Andrews, 2007:154): “One set of cases, commonly called ‘syntactic’, ‘structural’, or ‘direct’ cases, mark the core functions, another, commonly called ‘semantic’ cases, mark the oblique functions.” Andrews (2007:154) also observes that the distinction between the two boils down to semantic generality: “NPs with syntactic cases tend to express a wide range of semantic functions and to be targetted by rules sensitive to grammatical function, while NPs with ‘semantic’ cases tend not to have these properties.”

The idea that the distinction between semantic case and grammatical case is one of semantic generality is made explicit in Role and Reference Grammar (RRG) (Van Valin Jr. and LaPolla, 1997; Van Valin Jr. and Wilkins, 1996; Van Valin Jr., 2005), where semantic roles are treated according to three levels of generality:

Verb-specific semantic roles Semantic roles that are specific to a particular verb (e.g., killer, hearer, smasher, etc.).

Thematic relations Semantic roles that generalize over verb-specific roles (e.g., Agent, Patient, etc.).

Macro-roles Semantic roles that generalize over thematic relations (e.g., Actor and Undergoer).

The way in which verb-specific semantic roles might be grouped together into thematic relations and thematic relations in turn grouped together into macro-roles is illustrated for Rotokas in Figure 10.5.

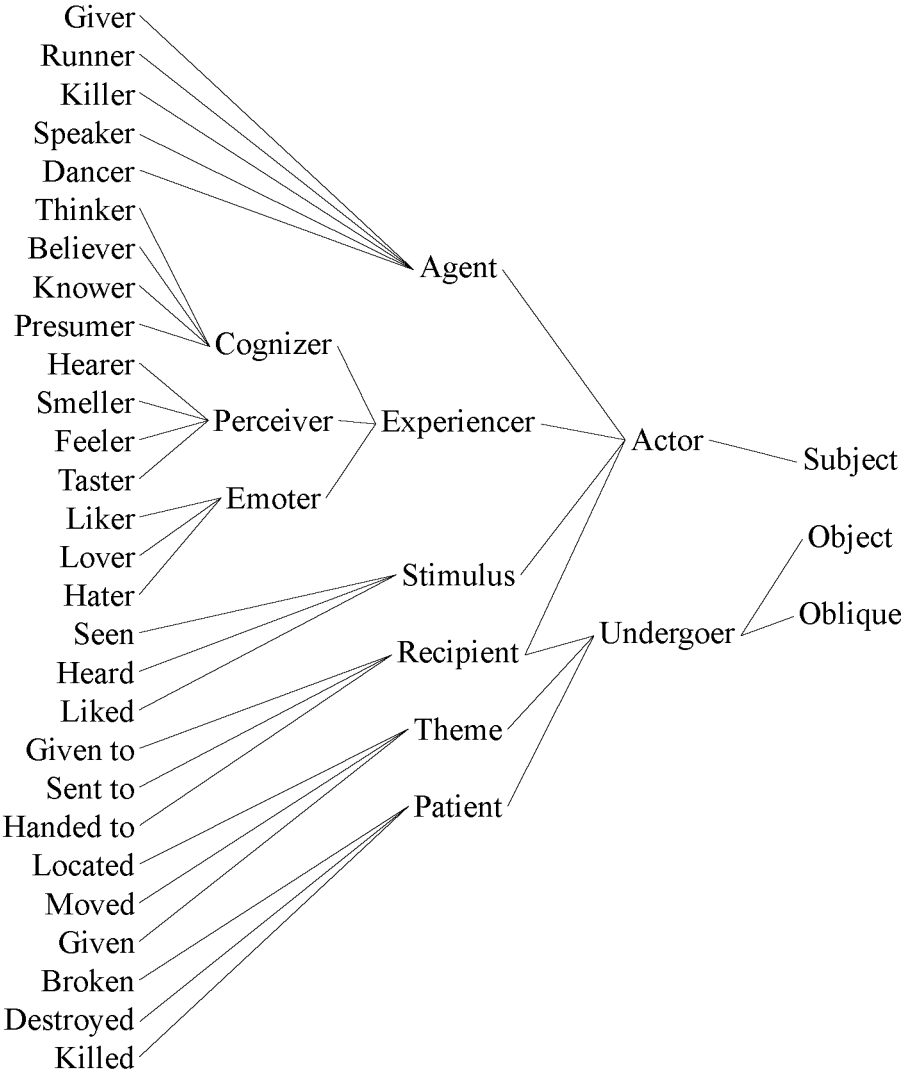


Table 10.5: From Verb-Specific Semantic Roles to Grammatical Relations: Adapted for Rotokas from Van Valin Jr. and Wilkins (1996) and Van Valin Jr. (2005)

In the following section, a handful of the more commonly discussed semantic roles and their encoding in Rotokas, as well as its effect on verbal inflection, will be discussed.

10.2.1 Agent

The thematic role of agent has played a very central role in grammatical theory. Since there have been many different conceptions of agenthood in the literature, it pays to pin down a bit more precisely what is meant by the term. The prototypical agent is human, volitional, and intentional (DeLancey, 1985; Frawley, 1992), and performs an action that brings about an immediate, observable change of state. For this reason, verbs such as *break* or *kill* are typically used for the purposes of illustration. In Rotokas, there are at least three verbs that would be translated as “kill”: *upo* “strike, fight”, as in (710); the causative verb *kopiipie* “kill (literally: make die)”, as in (711); and *tagoro* “assassinate, kill in secret”, as in (712).

- (710) *Tapi araoko-to eaka-re-va viuru-pa-irara vavaea-ro=ia*
 Tapi brother-SG.M hand_{over}-3SG.M_β-RP_β enemy-DERIV-HUM.PL hand-PL.N=LOC
oisio ra rara upo-i-ve
 COMP PPRO.3.SG.M hit-3PL_β-SUB
 Tapi put his brother in the hands of the enemy and they killed him.

- (711) *Kokota sora-to ira oira-ra kopii-pie-pa-re-veira*
 Kokota sorcerer-SG.M RPRO.3.SG.M people die-CAUS-CONT-3SG.M_β-HAB
 Kokota is a sorcerer who kills people.

- (712) *ora-upo-pa-oro ira-vu tagoro-i-vo oa iava koopi-ro-e*
 RR-fight-CONT-DEP.SIM RPRO.3.SG.M-ALT kill-3PL_β-IP_β therefore die-3SG.M_α-IP_α
 While fighting, he killed one man and that’s why he died.

Van Valin Jr. and Wilkins (1996) observe that a verb such as *kill* is not necessarily agentive to the extent that it does not require that the agent act intentionally, whereas a verb such as *murder* does, as illustrated by (713) and (714).

- (713) a. Larry accidentally killed the deer.
 b. * Larry accidentally murdered the deer.

- (714) a. The falling tree killed the camper.
 b. * The falling tree murdered the camper.

This observation has relevance for Rotokas. Although both *kopiipie* and *tagoro* can be translated as “kill”, the latter appears to require intentionality, as discussions with native speakers reveal. Although the verb stem *upo* is translateable as “hit” in some cases and “kill” in others, its semantics are primarily concerned with the manner of action (striking, hitting) rather than its outcome. In (715), the verb stem *kopiipie* “kill” serves as the independent verb while *upo* “fight, strike” plays the role of dependent verb and specifies the manner in which the killing takes place.

- (715) *Tomas Jon kopi-pie-re-vo rera upo-oro*
 Tomas Jon die-CAUS-3SG.M_β-IP_β PPRO.3.SG.M hit-DEP.SIM
 Tomas killed John by hitting him.

Languages vary in the extent to which departures from the prototypical transitive situation require different grammatical treatment. For example, natural forces depart from the prototypical transitive situation to the extent that changes of state caused by them do not involve a volitional human agent. Accordingly, they cannot play the role of subject in a transitive verb in some languages, such as the Papuan language Usan (Reesink, 1984), as illustrated in (716).

- (716) a. *munon eng nam s-orei*
 man the tree cut-3SG.FP
 The man cut a tree.
- b. * *moon âib nam boat-erei*
 wind big tree break-3SG.FP
 A strong wind broke the tree. (Reesink, 1984:131)

In Rotokas, neither animacy nor volitionality are necessary conditions for subjecthood, as both prototypical and non-prototypical agents are able to serve as subjects of bivalent verb roots, as illustrated by the non-prototypical subjects in (717) through (719).

- (717) *uuvau-va Rara kopi-pie-e-va*
 tuberculosis-SG.F Rara die-CAUS-3SG.F_β-RP_β
 Tuberculosis killed Rara.

- (718) *riro kou toru kou opuruva gasigasi-voi*
 big CLASS wave CLASS canoe break.RDP-PRES_β
 A big wave is breaking the canoe.

- (719) *kiuvu erako-va rukeruke-re-voi uvare riro-vira kae-ro-i*
 wind tree-SG.F shake.RDP-3SG.M_β-PRES_β because big-ADV blow-3SG.M_α-PRES_α
 The wind is shaking the tree because it is really blowing.

In addition to the roles of Agent and Instrument, some authors have also postulated a role of Cause or Reason, which differs from the thematic role of Agent to the extent that it is not necessarily human, volitional, or intentional and its involvement in the situation is less direct (Frawley, 1992). In Rotokas, Cause or Reason typically takes the form of an oblique argument marked by the postposition *iava*, as illustrated in (720) and (721).

(720) *vuri-vira kovu-to siovo-a aue iava atu siupu oa*
 bad-ADV stomach-SG.M feel-1SG_β CONN POST flying_fox soup RPRO.3.SG.N
aio-a-vo
 eat-1SG_β-IP_β
 I feel bad in the stomach from the flying fox soup that I ate.

(721) *oira-to ora-karekare-pa-ro-i veruveru iava*
 man-SG.M RR-scratch-CONT-3SG.M_α-PRES_α grille POST
 The man is scratching himself because of the grille (skin disease). [Firchow (1984)]

There is some flexibility in the grammatical realization of Cause or Reason, and it is similar to that of natural forces to the extent that it can also serve as the subject of a bivalent clause, as in (722) or (723).

(722) *kapu-a Pita upia-pie-pa-i-voi uva gau-pa-re-voi*
 sore-SG.N Peter pain-CAUS-CONT-3PL_β-PRES_β and cry-CONT-3SG.M_β-PRES_β
 The sore is causing Peter pain and he is crying.

(723) *sitoka-irao-pa-ra-i kapu-a iava*
 intense_pain-INTEN-CONT-1SG_α-PRES_α sore-SG.N POST
 I'm in intense pain from the sore.

The postulation of a thematic role of Agent and the identification of it with particular verb stems does not provide a good account of the distribution of verbal inflection, either in bare verb roots or derived verb stems. Although the derivation of a bivalent verb stem from a monovalent verb root involves the introduction of a causer role which could be characterized as Agent, and bivalent verb stems uniformly take β inflection, the direct identification of an agentive role with β inflection is problematic, given that the Agent role is not uniformly associated with β inflection in at least three cases. First, as seen in the previous section on the semantic basis of split intransitivity, the monovalent verb roots associated with β inflection are not uniformly associated with an agent role. Second, reflexive/reciprocal constructions involve an Agent but nevertheless show α inflection, as illustrated in (724).

(724) *riako-rirei ora-upo-ere-i-e oira-toa=pa uva vairei*
 woman- RR-fight-3DL.F-EPEN-IP_α man-SG.M=BEN and PRO.DL.F
rite-pie-i-voi oira-ra
 stop-CAUS-3PL_β-PRES_β man-HUM.PL
 The two women fought because of the man, and the men stopped them.

Finally, noun incorporation reveals that the presence of an Agent role does not by itself determine the form of verb inflection, since subject agreement for the actor role takes the form of β inflection in a simple transitive clause but α inflection in a transitive clause with noun incorporation. For example, both (725) and (726) involve an animate, volitional actor, but (725) shows β inflection whereas (726) show α inflection.

(725) *Agiosi aako-va=re tara-pa-e-vo*
 Agiosi mother-SG.F=ALL look_for-CONT-3SG.F β -IP β
 Agiosi is looking for (his) mother.

(726) *eto tara-pa-ro-e Siape oisio ra eto kasi-ro*
 fire look_for-CONT-3SG.M α -IP α Siape COMP fire-PL.CL
 Siape is looking for fire in order to make a fire.

In the case of both reflexive/reciprocal construction and noun incorporation, the properties of the undergoer (patient/theme) are relevant to the alternation between α and β inflection, suggesting that it is a more likely locus of explanation for the alternation between α and β inflection.

10.2.2 Theme/Patient

The roles of ‘theme’ and ‘patient’ have been defined inconsistently in the literature. Although the two terms are frequently used interchangeably, some authors distinguish between them on the basis of animacy: patients are human whereas themes are either non-human (animals) or inanimate (Andrews, 2007:140). The issue is not entirely terminological, since there is real debate concerning the nature of the theme/patient in a prototypical transitive situation (Naess, 2007). In English, for example, a wide variety of semantic roles are associated with objecthood, as demonstrated by the various example sentences in (727) (Levin, 1999).

(727) *The engineer cracked the bridge. [patient]*
The engineer destroyed the bridge. [patient/consumed object]
The engineer painted the bridge. [incremental theme]
The engineer moved the bridge. [theme]
The engineer built the bridge. [effected object/factitive]
The engineer washed the bridge. [location/surface]
The engineer hit the bridge. [location]
The engineer crossed the bridge. [path]
The engineer reached the bridge. [goal]
The engineer left the bridge. [source]
The engineer saw the bridge. [stimulus/object of perception]

The engineer hated the bridge. [**stimulus/target or object of emotion**]

Although it may be worthwhile to distinguish between theme and patient, the distinction does not appear to be particularly relevant as far as the surface coding properties of Rotokas are concerned. Verbs that involve a change-of-state in an affected object behave similarly to verbs that do not, and objecthood encompasses a number of different semantic roles, as illustrated by (728) through (733).

(728) *erako turu pero-re-vo Rausiere torara=ia*
 firewood CLASS split-3SG.M_β-IP_β Rausiere axe=LOC
 Rausiere split the firewood with an axe. [**patient**]

(729) *Kavato aakova=re kasipu-pa-oro itoo kovo teki-re-vo*
 Kavato mother=ALL angry-CONT-DEP.SIM banana garden destroy-3SG.M_β-IP_β
 Kavato, angry with his mother, destroyed the banana garden. [**patient/consumed object**]

(730) *Leo kepa kopuasi-pie-re-vo va kipu-oro uva vearo*
 Leo house restore-CAUS-3SG.M_β-IP_β PPRO.3.SG.N paint-DEP.SIM and good
keke-pa-i
 look-CONT-PRES_α
 Leo restored his house by painting it, and it looks good. [**incremental theme**]

(731) *Ravi kepa pau-re-voi vo-avukarei=pa ra va=ia*
 Ravi house build-3SG.M_β-PRES_β SPEC-couple=BEN and PPRO.3.SG=LOC
uusi-pa-si
 sleep-CONT-3DL.M
 Ravi is building a house for the couple so that they sleep in it. [**effective object/factitive**]

(732) *varo-ara sisiu-ve-vo vokipaua*
 clothing-PL.N wash-1DL-IP_β morning
 We washed the clothes in the morning. [**location/surface**]

(733) *topu-a keke-pa-a-voi kepa siovara=ia*
 hole-SG.N look.at-CONT-1SG_β-PRES_β house inside=LOC
 I'm looking at a hole inside of the house. [**stimulus/object of perception**]

Although a number of potentially distinct semantic roles are found in (728) through (733), there are a few that are systematically absent—namely, source, location, and goal. In Rotokas, these spatial roles are realized as oblique arguments rather than direct objects. There is one apparent exception, and this is the construction illustrated in (734) and (735), where an inalienable possessor is encoded obliquely and an inalienably possessed body part (which could be construed as a location) serves as a core argument.

(734) *kaakau iava porike ua toe-re-vo Poro uvare kookotu kaviru-e-vo*
 dog POST tail CL cut-3SG.M_β-IP_β Paul because chicken steal-3SG.F_β-IP_β
rera oira-aro
 PPRO.3.SG.M PPRO.3.SG.F-POSS
 Paul cut the tail of the dog because he bit his chicken.

(735) *keetaa oirato iava gasi-i-vo ora-upo-pa-oro vokiario*
 jaw man POST break-3PL_β-IP_β RR-fight-CONT-DEP.SIM night
 They broke the man's jaw while fighting at night.

However, examples such as (736) and (737) show that it is not the location encoded as theme in this construction, but rather the affected part of an inalienable possessor, the oblique argument of the postposition *iava*.

(736) *Vepo koie iava arevuo-to ori-re-vo*
 Vepo pig POST tongue-SG.M cook-3SG.M_β-IP_β
 Vepo cooked pig tongue.

(737) *Tovariri votokara iava taea goru-pie-re-voi*
 Tovariri car POST tire strong-CAUS-3SG.M_β-PRES_β
 Tovariri strengthened the tire of the car.

The more general nature of this construction, and its existence outside of the context of a transitive clauses, is further illustrated in (738) and (739), where the subject of a monovalent verb is an inalienably possessed body part: the monovalent verb *kapua* “have sore” has the body part noun *gisipo* “mouth” as subject in (738) while the monovalent verb *kata* “be exhausted” has the body part noun *vara ua* “body” as subject in (739)

(738) *gisipo ragai iava kapua-o-i uvare tavute isi aio-a-voi*
 mouth PPRO.1.SG POST have_sore-3SG.F_α-PRES_α because mango CL eat-1SG_β-PRES_β
kopu-pa isi
 unripe-DERIV CL
 My mouth is sore because I ate a red mango.

(739) *ragai iava vara ua kata-piro uvare riro kaekae-vira voka-a-vo*
 PPRO.1.SG POST body CL exhaust-COMPL because big long-ADV walk-1SG_β-IP_β
 My skin was exhausted because I walked a long way.

10.2.3 Experiencer

The term experiencer is used to describe a number of semantic roles relating to predicates of thought, belief, perception, and emotion. In Rotokas, the experiencer is systematically encoded

as subject; however, the stimulus is encoded as direct object for some verbs and as an oblique argument for others.

In verbs of perception, the subject corresponds to the experiencer and the direct object to the stimulus, as illustrated for the verb root *vura* “look, see” in (740) and (741) and the verb root *siovo* “feel” in (742) and (743) (see §9.1.1.2).

(740) *ora-ruvu-ro-e uvare rakoru vura-re-vo*
 RR-jump-3SG.M_α-IP_α because snake see-3SG.M_β-IP_β
 He jumped because he saw the snake.

(741) *kokopuo-vira rutu Tokii vura-pa-a-voi*
 distant-ADV very Mt.Bagana look_at-CONT-1SG_β-PRES_β
 I’m looking at Mt. Bagana from afar.

(742) *uteo-va siovo-a-vo vokiario usii-pa-oro*
 cold-SG.F feel-1SG_β-IP_β night sleep-CONT-DEP.SIM
 I felt cold sleeping at night.

(743) *araiva-vira rutu vii uvu-pa-a-voi ovusia reo-pa-u*
 clear-ADV very PPRO.2.SG hear-CONT-1SG_β-PRES_β while talk-CONT-2SG_α
 I hear you clearly (fig., understand) when you talk.

Verbs of perception show a different valency pattern than other psychological verbs (psych-verbs). In verbs of perception, the stimulus plays the role of object while in other psych-verbs the stimulus plays the role of oblique argument. For example, the verb roots *ruipa* “desire, want” and *vasiare* “dislike” encode the stimulus as an oblique argument marked by the postpositional enclitic =*pa*, as in (744) and (745).

(744) *oari=pa ruipa-pa-ra-i riako-va*
 DEM.DIST.SG.F=BEN desire-CONT-1SG_α-PRES_α woman-SG.F
 I like that woman.

(745) *riako-va oira-to=pa vasiare-pa-o-e oa iava oira*
 woman-SG.F man-SG.M=BEN dislike-CONT-3SG.F_α-IP_α hence PPRO.3.SG.F
toe-re-vo
 cut-3SG.M_β-IP_β
 The woman disliked the man and that’s why he cut her.

The verb root *kasipu* “angry” also encodes the stimulus as an oblique argument, but it selects for the postpositional enclitic =*re*, as illustrated in (746).

(746) *Rupi ravuru-vira rutu pirati pau-o-e uva aako-va oira=re*
 Rupi clustered-ADV very peanut plant-3SG.F_α-IP_α and mother-SG.F PPRO.3.SG.F=ALL
kasipu-o-i
 angry-3SG.F_α-PRES_α
 Rupi peanut-planted in heaps and her mother was angry with her.

10.2.4 Source and Goal

The thematic roles of source and goal are rooted in the semantics of verbs of motion. Loosely, the source and goal can be defined as the start and end points, respectively, of a motion event. (The notion of source and goal have been extended in the literature to encompass roles that are not anchored to the semantics of motion events, but here we will adhere to a more strict interpretation of the terms.)

Source and goal in Rotokas are oblique arguments (see §5.1.3). The most common marking takes the form of postpositional enclitics. The enclitic =*iava* is used to case mark sources, as illustrated by (747) and (748).

(747) *Ibu iava aapaapau rovo-ro-epa*
 I. POST visit precede-3SG.M_α-RP_α
 He came first from Ibu to visit.

(748) *Rarasori Rotokas reo porepore-pie oa urio-ro-era Averika*
 Robinson Rotokas language turn.RDP-CAUS RPRO.3.SG.N come-3SG.M_α-DP_α America
iava
 POST
 Robinson came from America to translate the Rotokas language.

The enclitic =*iare* is used to mark goals of varying sorts, as illustrated in (749) through (751).

(749) *ragai rugo-pa-ra-e oisio voki-pa-vira ava-pa-ra-i Togarao*
 PPRO.1.SG think-CONT-1SG_α-IP_α COMP tomorrow go-CONT-1SG_α-PRES_α Togarao
iare
 POST
 I thought that I'd go to Togarao tomorrow.

(750) *utupakou-visivi urio-pa-ro-i Rake visii iare*
 soon-ADV come-3SG.M_α-PRES_α Rake PPRO.2.PL POST
 Rake is coming to you (pl.) soon.

(751) *Tesi vaio ora Sira ava-pa-ere-i-ei toara iare vovokio*
 Tesi ANIM.DL and Sira go-CONT-3DL.F-EPEN-PRES_α market POST today
 Tesi and Sira are going to the market today.

Locations, sources, and goals also co-occur with the particle *eisi*, as in (752) or (753).

(752) *Riopeiri arao-rei ora Vaviata ava-si-e eisi Buka*
 Riopeiri brother-DL.M and Vaviata go-3DL.M-IP_α LOC Buka
 The brothers Riopeiri and Vaviata went to Buka.

- (753) *aakovatorei ava-si-e eisi Wakunai uu-sia*
 parents go-3DL.M-IP_α LOC Wakunai meet-DEP.SEQ
 The parents went to Wakunai to meet (at market).

The particle *eisi* differs from the postpositional enclitics that mark source and goal in at least two respects. First, the particle *eisi* precedes the goal, as already illustrated in (752) and (753). Second, the particle *eisi* is an unbound (free) form, given that it also occurs alone, as illustrated in (754).

- (754) *aruvea ava-ro-e aite-to eisi vara-vira aue tara-sia atari*
 yesterday go-3SG.M_α-IP_α father-SG.M LOC down-ADV CONN find-DEP.SIM fish
 Dad went down yesterday to find fish.

The particle *eisi* is in some cases marked by the postpositional enclitics used to mark source and goal. In other words, if an enclitic occurs, it takes as its host the particle *eisi* rather than the noun that plays the role of location, source, or goal, as illustrated in (755) and (756).

- (755) *asia-pa-ra-i utu-arapa eisi-re kovo-a*
 disinclined-CONT-1SG_α-PRES_α follow-DEP.NEG LOC=ALL garden-SG.N
 I don't want to come along to the garden.

- (756) *ora-tuguru-ra-e aveke=ia vavo kare-pa-oro eisi=va Togarao=ia*
 RR-bump-1SG_α-IP_α aveke=LOC there return-CONT-DEP.SIM LOC=COM Togarao=LOC
vokiario
 yesterday
 I bumped my leg on a stone there while returning from Togarao last night.

10.2.5 Recipient/Addressee

One use of the enclitic *=pa* can be described as benefactive, in the sense that it marks a NP as being the recipient of an action. It is unclear at present whether its use is licensed by particular verbs or whether it can appear anywhere that it is semantically felicitous.

- (757) *Matari uraura-re-vora Rarasori uva rera=pa va*
 Matari photograph-3SG.M_β-DP_β Robinson and PRO.3.SG.M=BEN PRO.3.SG.N
vate-re-vora
 give-3SG.M_β-DP_β
 Robinson photographed Matan and gave it to him.

Sometimes lumped together with the role of recipient, the addressee is also encoded as an oblique, although it does not occur with the enclitic *=pa* but rather with the enclitic *=re*, as illustrated for three different verbs of speaking: *pura* “say”, *tavi* “tell”, and *reo* “speak”.

(758) *apeisi pura-u-e Raki ragai=re*
 what say-2SG $_{\alpha}$ -IP $_{\alpha}$ Raki PPRO.1.SG=ALL
 Raki, what did you say to me?

(759) *ragai tare-raga-pa-a-vo aako=re raivaro uvare ragai*
 PPRO.1.SG wait_for-only-CONT-1SG $_{\beta}$ -IP $_{\beta}$ mother=ALL road because PPRO.1.SG
tavi-e-vora
 tell-3SG.F $_{\beta}$ -DP $_{\beta}$
 I waited in vain for my mother on the road because she told me.

(760) *Riki tavavaia-pie-i-voi rera=re reoreo-pa-oro*
 Riki frustrated-CAUS-3PL $_{\beta}$ -PRES $_{\beta}$ PPRO.3.SG.M speak.RDP-CONT-DEP.SIM
 They caused Ricky to be frustrated while talking to him.

10.2.6 Conclusion

In this section (§10.2), a number of traditionally recognized semantic roles were examined in an attempt to determine the extent to which they are able to predict the occurrence of α and β verbal inflection. Although the notion of a thematic role is somewhat useful, to the extent that it allows higher-level generalizations about grammatical roles, it fails to account for the distribution of α and β verbal inflection. For example, while the notion of a thematic role may help explain why a Perceiver associated with a monovalent verb takes β inflection while a Feeler associated with a monovalent verb takes α inflection, it does not explain why an agent takes α inflection for subject agreement when associated with some verbs of motion (e.g., *ava* “to go”) but β inflection for others verbs of motion (e.g., *voka* “to walk”).

The same conclusion has been reached in the study of split intransitivity in other languages. For example, in her discussion of split intransitivity in Dutch, Zaenen (1988:332) observes that

“notions like theme and agent are not primitive terms, and it is not reasonable to expect that empirical studies of natural language will ever lead to a universal definition. But in practice there is the temptation to assume that they provide a basis for crosslinguistic comparison of the meaning of lexical items. As our discussion indicates, their use is in fact likely to lead to confusion.”

The inadequacy of thematic roles in accounts of split intransitivity is part of a long-standing skepticism in the theoretical literature concerning the explanatory adequacy of thematic roles (Dowty and Ladusaw, 1988; Dowty, 1989, 1990; van Voorst, 1988; Jackendoff, 1988), which goes beyond the scope of this work (see Levin and Hovav (2006) for a survey). A few shortcomings of the approach merit discussion in the context of Rotokas.

As already seen in §10.2.2 from the discussion of the thematic roles of Theme or Patient, there are issues concerning how thematic roles are defined and what is the appropriate “grain-size” (Levin and Hovav, 2006:38-41). For example, the thematic roles of Agent and Patient

are present in most inventories but they are not uniformly defined. Some authors conflate the notions of theme (inanimate undergoer) and patient (animate/human undergoer) while others distinguish the two. The distinction will be relevant for some languages sensitive to the animacy of the undergoer but not for others. Similarly, some authors carefully distinguish a volitional, human causer from a natural force. In Rotokas, the granularity of the roles of subject and object are not relevant for assignment of the subject role (i.e., human actors and natural forces serve equally well as subjects), but for other languages (e.g., Usan) more fine-grained distinction will be necessary.

There is long-standing recognition that adherence to the strict one-to-one mapping between thematic roles and grammatical arguments is problematic, since there are many cases where an argument appears to play more than one thematic role in a clause (Yip et al., 1987). This difficulty has been avoided in some proposals by positing more fine-grained roles that essentially involve a combination of roles—e.g., “affected agent”, which combines the role of Agent with a property typically associated with the role of Patient (Naess, 2007). A proliferation of thematic roles weakens the explanatory power of the theory and suggests a fundamental problem with the approach.

10.3 Split Intransitivity from a Theoretical Perspective

Split intransitivity is generally defined as a phenomenon where intransitive verbs are heterogeneous with respect to their grammatical behavior, typically such that one subclass of intransitive subjects behaves like transitive subjects while another subclass of intransitive subjects behaves like transitive objects. Using this fairly broad definition of the term, “split intransitivity” encompasses a number of phenomena described using different terminology in the literature, such as “split ergativity” (Dixon, 1979), “case marking splits” (Tsunoda, 1981), “active-inactive” (Danziger, 1996), or “active-stative alignment” (Mithun, 1991).

Using the grammatical primitives of S, A, and O (Dixon, 1979; Andrews, 1985; Dixon, 1994), the various possibilities for the alignment of grammatical roles can be represented diagrammatically as in Table 10.6 (see §7.3.2).

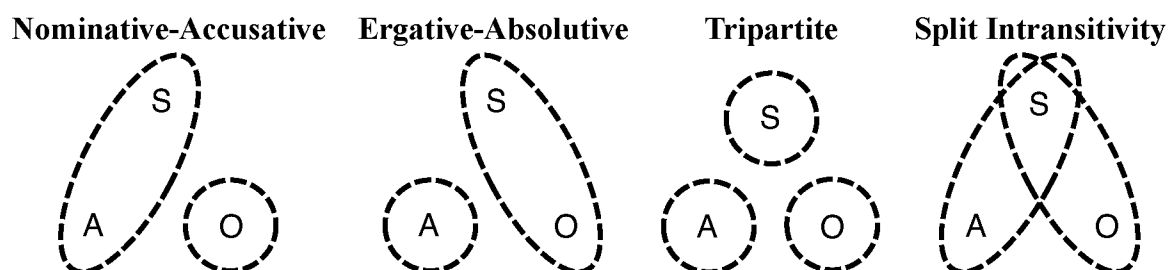


Table 10.6: Alignment Possibilities for S, A, and O

Dixon (1994) draws a useful distinction between two types of split-intransitivity, split-S systems and fluid-S systems:

Languages that distinguish between S_a and S_o , as subtypes of S, are of two kinds. The first kind are like ergative and accusative languages in having syntactically based marking of core constituents [...] Each verb is assigned a set syntactic frame, with case marking or cross-referencing always being done in the same way, irrespective of the semantics of a particular instance of use. We call such a system ‘split-S’. The second kind employs syntactically based marking for transitive verbs, but employs semantically based marking [...] just for intransitive verbs – an intransitive subject can be marked as S_a (i.e., like A) or as S_o (like O) depending on the semantics of a particular instance of use. We can call this a ‘fluid-S’ system.

The difference between these two systems has to do with the degree to which the alignment of S with either A or O is flexible. In a split-S system, the class of intransitive verbs is split between the two subclasses—i.e., a particular intransitive verb is either of the type S_a or of the type S_o . In a fluid-S system, however, there is fluidity of assignment to the two classes. A particular intransitive verb can be assigned to either one of the two classes, depending upon the semantics of individual tokens.

Fluid-S systems appear to be more rare, and clear-cut instances of them are few in number. They are found in Acehnese (Durie, 1985, 1987), Eastern Pomo (McLendon, 1978), and Tsova-Tush (Holisky, 1987). Split-S systems are far more common. Dixon (1994:75) observes that, “Careful study of the grammars of split-S languages shows that they do work in terms of a unitary S category with this being subdivided, for certain grammatical purposes, into S_a and S_o .” In Acehnese, it has been argued that grammatical relations of S, A, and O do not exist (Durie, 1985). Rather, there are simply two semantic categories, Agent and Patient. Dixon (1994) argues that it is nevertheless still possible to posit a grammatical relation of subject:

It may be that for Acehnese the only viable definition of ‘subject’ is [Durie’s] Actor (the concatenation of A and S_a , in my terms) which is in fact defined grammatically, in terms of its cross-referencing properties, but it is a grammatical category with a relatively simple and unusually consistent semantic characterisation.

Although the approach advocated in Dixon (1979, 1994) is attractive from a purely descriptive standpoint, it leaves a number of important theoretical issues unresolved. First, the syntactic status of S, and any subclasses of it, is left unclear. Although Dixon argues for a unitary S that is split into subclasses in some languages (S_a and S_o), it is also possible to analyze the phenomenon in terms of two distinct categories that are unified in most languages but distinguished in others (unergative and unaccusative). Second, Dixon’s account is largely unconstrained as far as the semantic motivation of S_a and S_o is concerned. Although Dixon focuses on the semantic notion of “control”, other parameters have been proposed in the literature (e.g., aspect

in Van Valin Jr. (1990)), and it is worth considering whether there are universal constraints on the relevant parameters and their interaction. In the literature on split intransitivity, these two issues have received considerable attention, with theoretical proposals essentially falling into two camps: those that argue in favor of a semantic account of split intransitivity and those that deny any such basis can be found and urge a purely syntactic account of the phenomenon. These two approaches will be contrasted in the following sections and the significance of Rotokas in this debate will be considered.

10.3.1 Syntactic Accounts of Split Intransitivity

The formulation of the “Unaccusative Hypothesis” (UH) in Perlmutter (1978) has motivated a great deal of theoretical interest in split intransitivity. It embodies two claims. First, intransitive verbs fall into two classes: unaccusative and unergative. The single argument of an unaccusative verb is an underlying direct object and displays many of the same syntactic properties. Second, the distinction is syntactically represented but semantically motivated: unergativity correlates with agentivity and unaccusativity with patienthood.²

For example, in Italian, verbs take one of two auxiliary forms: either *avere* “have” or *essere* “be”. Transitive verbs occur with *avere*, as in (761), while derived intransitives occur with *essere*, as in (762) and (763).

(761) *Mario ha difeso Luigi*
Mario has defended Luigi
Mario defended Luigi [Rosen (1984:43)]

(762) *Mario si è difeso*
Mario RR is defended
Mario defended himself. [Rosen (1984:44)]

(763) *Mario si è concesso un momento di riposo*
Mario RR is conceded a moment of rest
Mario allowed himself a moment's rest. [Rosen (1984:44)]

²This hypothesis was originally couched within the framework of Relational Grammar (RG) and was meant to account for the fact that languages differ with respect to the ability of intransitive verbs to form impersonal passives by appealing to initial grammatical relations. According to the hypothesis, intransitive verbs were split according to their underlying derivational source: one class of intransitives, the unergatives, were proposed to have an initial 1, while another class of intransitives, the unaccusatives, were proposed to have an initial 2. Although RG is no longer at the center of theoretical attention and has few practitioners, the split between two classes of intransitives has become widely recognized and continues to be the source of theoretical interest since a variety of grammatical phenomena have been found that recognize the distinction and the basic insight has been adapted to other grammatical frameworks, particularly multistratal theories that posit a distinction between an underlying and surface representation (deep versus surface).

Underived intransitive verbs are split into two classes: some intransitive verbs occur with *avere*, as in (764), while others occur with *essere*, as in (765).

(764) *Mario ha esagerato*
Mario has exaggerated
Mario exaggerated. [Rosen (1984:44)]

(765) *La pressione è aumentata*
the pressure is increased
The pressure increased. [Rosen (1984:44)]

Since its original formulation, a constant thread in the literature on the UH is debate over the extent to which the phenomenon is amenable to a purely semantic explanation. Rosen (1984) examines split intransitivity within the framework of Relational Grammar (RG) and explicitly rejects a purely semantic account as part of a wider claim concerning the need for grammatical relationals in syntactic representation. More specifically, she claims that “there is no regular homomorphism between semantic representation and initial GRs [Grammatical Relations], that one cannot equate these two concepts, and that frameworks which do are necessarily inadequate” (p. 38-39). This claim is assessed by examining, and ultimately rejecting, two specific hypotheses concerning the relationship between syntax and semantics in particular languages and cross-linguistically.

The first hypothesis is labelled the “Little Alignment Hypothesis” (LAH) in Rosen (1984:53). It is “little” to the extent that it applies only to individual languages and therefore represents a weaker claim that does not presuppose that whatever semantic basis found in a particular languages generalizes more widely. It is provided in (766).

(766) “For any one predicate in any one language, there is a fixed mapping which aligns each semantic role with an initial GR. The alignment remains invariant for all clauses with that predicate.”

The second hypothesis is labelled the “Universal Alignment Hypothesis” (UAH) in Rosen (1984:40), since it represents a stronger claim that goes beyond particular languages to make a cross-linguistic claim of putative universality. It is provided in (767).

(767) “There exists some set of universal principles on the basis of which, given the semantic representation of a clause, one can predict which initial GR each nominal bears”.

In order to evaluate (766) and (767), Rosen (1984) examines a handful of languages: Choctaw, Dutch, Italian, Lakhota, Sanskrit, and Turkish. Rosen (1984) points out two problems for the UAH that are raised by these languages.

First, Rosen (1984) claims that even individual languages are not internally consistent with respect to the alignment of semantic roles and accusativity, undermining the claim for language-specific alignment in (766). For example, Rosen (1984:53) cites the following pair of sentences

in Italian, observing what is the typical pattern—namely, that when the subject of a transitive verb corresponds to the subject of an intransitive verb, the same auxiliary is selected, as in shown in (768), and that when the object of a transitive verb corresponds to the subject of an intransitive verb, different auxiliaries are selected, as shown in (769).

(768) a. *Il pubblico ha fischiato il tenore.*
the audience has booed the tenor
The audience booed the tenor.

b. *Il pubblico ha fischiato*
the audience has booed
The audience booed.

(769) a. *Bertini ha calato il sipario.*
Bertini has lowered the curtain
Bertini lowered the curtain.

b. *Il sipario é calato.*
the curtain is lowered
The curtain fell.

But Rosen (1984:53) observes that this pattern is not consistently maintained in Italian. Other verbs show the opposite pattern: when the subject of a transitive verb corresponds to the subject of an intransitive verb, different auxiliaries are selected, as in shown in (768), and when the object of a transitive verb corresponds to the subject of an intransitive verb, the same auxiliary is selected, as shown in (769).

(770) a. *Aldo ha fuggito ogni tentazione.*
Aldo has fled all temptation
Aldo fled all temptation.

b. *Aldo é fuggito.*
Aldo is fled
Aldo fled.

(771) a. *Bertini ha deviato il colpo.*
Bertini has deflected the blow
Bertini deflected the blow.

b. *Il colpo ha deviato.*
the blow has deflected
The blow went awry.

Second, verbs that are superficially similar in meaning show different behavior across languages, undermining the claim for universal alignment. To illustrate this point, Rosen (1984:61) observes that “die” is unergative in Choctaw but unaccusative in Italian, as shown in (772), and “sweat” is unaccusative in Choctaw and unergative in Italian, as shown in (773).

(772) a. *illi-li-tok kiyo*
 die-1-POST not
 I did not die. [Choctaw]

b. *non sono morto*
 not be+1.SG died
 I did not die. [Italian]

(773) a. *sa-laksha*
 1-sweat
 I sweated. [Choctaw]

b. *ho sudato*
 1.SG sweated
 I sweated. [Italian]

The arguments marshalled by Rosen (1984) against a semantic account of split intransitivity are valid, but they address a relatively simplistic semantic analysis that is couched in terms of fixed thematic roles (Agent, Patient). However, as already seen in §10.2, the analysis of verbal semantics in terms of thematic roles is deeply flawed, and more fine-grained analyses of event semantics have evolved in response to the limitations of such an approach, as pointed out in Van Valin Jr. (1990:253):

When semantic theories of split intransitivity are discussed by proponents of the UH [Unaccusative Hypothesis], they are normally characterized as simplistic thematic-relations-based accounts, e.g., the subject of class-S_A verbs is always an agent, while that of class-S_O verbs is always a theme/patient. The semantic variation in the split intransitivity argues strongly against any theory of these phenomena based entirely on thematic relations, since, for example, some of the subjects of class-S_O verb in Italian are clearly agentive [...] while none of the class-S_O subjects in Acehnese are. This is a significant point, because the arguments in Rosen 1984 regarding the impossibility of an adequate semantic characterization of split intransitivity are directed against a very simplistic thematic-relations analysis [...]

It is possible to provide alternative semantic accounts that do not suffer from these problems, and, if these theories provide insights or empirical generalizations that the UH fails to capture, they are to be preferred. In the following section, the semantic accounts of split intransitivity will be reviewed and evaluated.

10.3.2 Semantic Accounts of Split Intransitivity

One of the earliest crosslinguistic surveys of the semantic basis of split intransitivity is that of Merlan (1985), which examines a handful of languages and draws a number of broad conclusions (Merlan, 1985:350):

smaller class restricted to animates “The specialized intransitive lexical subclass will contain (with few or no exceptions) verbs requiring animate subject; the distributionally unmarked intransitive class(es) will not be unitarily specifiable as to animacy of the subject.”

verbs of bodily function and process “The specialized intransitive lexical class will contain some verbs of bodily function and process...”

subjective inflection associated with agentivity “If the specialized intransitive class requiring animate subject is coded by subjective inflectional forms, verbs in the class will be composed partly, perhaps principally, of verbs in which the semantic relation of NP to verb is agentive to neutral...”

objective inflection associated with patienthood “If a language marks the specialized intransitive class requiring animate subject by means of object pronominals, the verbs contained within it will be principally of a kind to which the subject has a neutral to patientive relation.”

verbs of physical sensation and perception have objective tendencies “Some verbs of physical sensation and perception are likely to be within the objective class.” (p. 350-351)

Finally, Merlan (1985) makes a fairly strong claim concerning the expected alignment of semantic and grammatical roles:

“No languages will be found in which the restricted class is objectively inflecting and the verbs in it are primarily of the kind in which the subject bears an agentive relation to the verb. Nor will the reverse situation be found, in which a smaller class of subjectively inflecting intransitive contains verbs for which the semantic relation of the subject to the verb is primarily patientive.” (p. 350)

This claim is formulated in such a way that it begins to address some of the objections to a semantic account of split intransitivity raised in Rosen (1984), since it does not assert a direct relationship between semantic roles and intransitive verb classes, but rather places a markedness constraint on the relationship, such that particular alignments are more natural than others. However, the vagueness of the terms “agentive” or “patientive” makes it very difficult to judge the extent to which these generalizations hold true. In other words, before a semantically-oriented theory of split intransitivity can be provided, a more explicit account of the semantics of “agent” and “patient” (among other categories) must be worked out. Other authors who have examined split intransitivity cross-linguistically have spelled out more explicitly the semantic

features involved in these systems, going beyond the loose characterization of particular classes “agent-like” and “patient-like” in Merlan (1985). One particularly clear account that illustrates a few of the issues involved and sets the stage for a discussion of more explicit theoretical accounts of the phenomenon is Mithun (1999).

Mithun (1999) discusses split intransitivity in three languages of the Americas—namely, Guarani (colloquial), Lakhota, and Central Pomo. The patterns of case-marking found in these languages resembles the intransitivity split found in Italian. In Lakhota, for example, the subject of some intransitive verbs display the same person agreement as the subject of transitive verbs (e.g., the verb meaning “to jump”, as in (774)) while the subject of some other intransitive verbs display the same agreement as the object of transitive verbs (e.g., the verb meaning “to be sick”, as in (775)) (Mithun, 1991:514).

(774) a. *wa-psíca*
 1.SG-jump
 I jumped.

b. *wa-ktékte*
 1.SG-kill
 I'll kill him.

(775) a. *ma-k^húže*
 1.SG-sick
 I'm sick.

b. *ma-ktékte*
 1.SG-kill
 He'll kill me.

Mithun (1999) proposes that the verbs in the languages she discusses can be divided into classes on the basis of their specification for a number of semantic features, listed below:

Event This feature refers to the aspectual classification of a predicate, following the widely recognized distinction between events and states discussed by Vendler (1967). The relevance of aspect to split intransitivity is widely recognized in the literature—e.g., the discussion of aspect and punctuality as parameters of semantic transitivity in Hopper and Thompson (1980) (see §7.3.1).

P/E/I The notion of agency is characterized by Mithun in terms of the entity understood to be the performer, effector, and/or instigator of an action. The notions of performance, effect, and instigation are largely taken for granted and are not spelled out explicitly.

Control Another aspect of agency is the notion of control. The notion of control is also brought up in Dixon (1994), who defines control in terms of the semantic role that is “most relevant to the success of the activity”: “the semantic role of a verb which is most relevant to the success of the activity (if human: which could initiate or control the activity) is linked to A function; and that role which is most saliently affected by the action is linked to O relation” (Dixon, 1994:29)

Affectedness The last feature refers to the affectedness of the intransitive actor. This feature has been a recurrent theme in the literature of transitivity, and is considered by some to be the sine qua non of semantic transitivity. Unlike the other features, which are orthogonal to one another, this feature is applied only to stative verbs by Mithun (1999).

The combination of these features identifies a number of verb classes, which are listed with their feature analysis in Table 10.7.

Class	Illustrative Verbs	Event	P/E/I	Control	Affected
a	‘jump’, ‘go’, ‘run’	+	+	+	n.a.
b	‘hiccough’, ‘sneeze’, ‘vomit’	+	+	-	n.a.
c	‘fall’, ‘die’, ‘slip’	+	-	-	n.a.
d	‘reside’, ‘be prudent’, ‘be patient’	-	+	+	n.a.
e	‘be tall’, ‘be strong’, ‘be righthanded’	-	-	-	-
f	‘be sick’, ‘be tired’, ‘be cold’	-	-	-	+

Source: Mithun (1991:524)

Table 10.7: Analysis of Verb Classes By Semantic Features

Although Mithun (1999) does not provide labels for the various configurations assumed in her analysis, the implicitly recognized verb classes might be characterized as follows:

motion ‘jump’, ‘go’, ‘run’

bodily process ‘hiccough’, ‘sneeze’, ‘vomit’

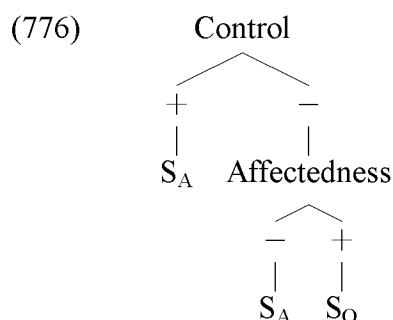
uncontrolled event ‘fall’, ‘die’, ‘slip’

controlled state ‘reside’, ‘be prudent’, ‘be patient’

inherent property ‘be tall’, ‘be strong’, ‘be righthanded’

affected state ‘be sick’, ‘be tired’, ‘be cold’

In the case of Guarani and Lakhota, she concludes that a single semantic parameter governs the split: eventhood for Guarani and P/E/I for Lakhota. In the case of Central Pomo, however, she concludes that there are two parameters at play: Control and Affectedness, with Affectedness being relevant only where Control is absent, as shown in (776).



There are a few points to make concerning Mithun’s analysis. First, the features discussed by Mithun are not completely independent of one another, especially performance/effect/instigation and control, which are two facets of a broader notion of agency. This may explain why Mithun does not discuss all of the logically possible combinations of these features. For example, Mithun does not discuss two types of non-event predicates predicted by her features: plus PEI and minus Control vs. minus PEI and plus Control. Second, it is unclear how these features interrelate. The feature of Affectendness is invoked only in the analysis of Central Pomo, but is ignored for the other languages. Finally, Mithun’s classification of verbal predicates in terms of events versus non-events is fairly coarse, and most studies of event structure posit more fine-grained distinctions—e.g., the four-way classification of activities, accomplishments, achievements, and states in the classic study of Vendler (1957).

Some of the parameters identified in Mithun (1999) are relevant to Rotokas (e.g., control is arguably relevant to the verbs of bodily process), but there are nevertheless splits found that do not fit into her classificatory scheme. For example, verb roots denoting motion events are split according to their specification for manner, but this parameter is not found in the inventory discussed by Mithun. While the orientations towards more fine-grained lexical semantic analysis has merit, an account is needed that addresses some of the specific shortcomings while preserving the spirit of its intent.

One theory of split intransitivity that shares the orientation towards lexical semantics found in Mithun (1999) but provides a more sophisticated predicate decomposition is found in Role and Reference Grammar (RRG) (Foley and Van Valin Jr., 1984; Van Valin Jr., 1984, 1987, 1990; Van Valin Jr. and LaPolla, 1997; Van Valin Jr., 2005). Van Valin Jr. (1990) argues that the various phenomena which the Unaccusative Hypothesis (UH) is meant to explain are better understood in semantic (rather than syntactic) terms:

“According to the UH there are two types of intransitive verbs, and in both theories the differences between them are characterized in purely syntactic terms: in one type the surface object is also the underlying subject, and in the other the surface subject is the underlying direct object.” (Van Valin Jr., 1990:221)

RRG postulates a direct linking between semantic and syntactic representations, analyzing the former in terms of a lexical semantic theory that involves predicate decomposition in the

form of logical structure, following Dowty (1979). Thematic roles are generalizations over logical structure (LS), defined in terms of logical operators, as shown in Figure 10.8.³

I. STATE VERBS		
A. Locative	be-at' (x,y)	x = locative, y = theme
B. Nonlocational		
1. State or condition	predicate' (x, (y))	x = patient
2. Perception	see' (x, (y))	x = experiencer, y = theme
3. Cognition	believe' (x, (y))	x = experiencer, y = theme
4. Possession	have' (x, (y))	x = locative, y = theme
5. Attributive/Identificational	be' (x, (y))	x = locative, y = theme
II. ACTIVITY VERBS		
A. Uncontrolled	predicate' (x, (y))	x = effector (y = locative)
B. Controlled	DO [predicate' (x, (y))]	x = agent (y = locative)

Table 10.8: RRG Definitions of Thematic Roles

One aspect of this style of analysis is that it provides a formal mechanism for capturing the derivational relationship between aspectual classes. As Van Valin Jr. (1990:225) points out, the activity and accomplishment readings of a verb can be coerced through event type shifting rules, as in (777), obviating the need to list more than once in the lexicon a verb that admits both readings.

(777) Activity [motion, creation, consumption] → Accomplishment: given an activity LS [ϕ . . . **predicate'** . . .], add CAUSE [ψ BECOME **predicate'** . . .] to form a ϕ CAUSE ψ accomplishment LS

A semantically based account of split intransitivity also explains phenomena that are unmotivated within a purely syntactic account. In Italian, for example, the verb *correre* “run” behaves both unaccusatively and unergatively, but this variable behavior of the verb reflects two different construals of its semantics, as either an activity or an accomplishment. The verb behaves unaccusatively (i.e., takes the auxiliary *é*) when it has an activity reading, but behaves unergatively (i.e., takes the auxiliary *avere*) when it has an accomplishment reading, as illustrated in the contrast between (778a) and (778b) (Van Valin Jr., 1990:237).

(778) a. *Luisa ha corso nel parco per/*in un'ora.*
 Luisa has run in.the park for/in an hour
 “Luisa ran in the park for/*in an hour.”

³Van Valin Jr. and LaPolla (1997) provides an even more fine-grained taxonomy than that shown in Figure 10.8. Since the specific details of the theory are not the primary concern here, only the original formulation is presented. Those interested in a detailed mapping of the original taxonomy and the current formulation are referred to Van Valin Jr. (2005:45).

- b. *Luisa é corso nel parco per/in un' ora.*
 Luisa has run in.the park for/in an hour
 “Luisa ran in the park for/in an hour.”

Rosen (1984) treats this alternation as idiosyncratic behavior that undermines the semantic basis for the intransitivity split in Italian, but Van Valin Jr. (1990) shows that it is well-motivated within a semantic account, and consistent with the behavior of split intransitivity systems in other languages. But to what extent does this style of analysis work for Rotokas? As was observed in §10.1.3, Aktionsart appears to be relevant to the split between α and β inflection among verbs of sound emission. It is less clearly relevant in the case of the other semantic fields in which the distinction is operative, such as the verbs of “inferred causation”.

One of the issues that consistently emerges in the theoretical literature on split intransitivity is whether the split between the two classes of intransitives boils down to a single parameter. While Van Valin Jr. (1990) shows that split intransitivity is not as unsystematic as Rosen (1984) contends, the RRG analysis still faces some difficulty in providing a well-motivated analysis for splits that are motivated by multiple factors.

One step in the direction of such an account is that of Zaenen (1993) (Zaenen, 1988; Bresnan and Zaenen, 1990), which is couched within the framework of LFG (Bresnan and Kaplan, 1982; Bresnan, 2001; Falk, 2001). Zaenen (1993) analyzes Dutch auxiliary selection in terms of “intrinsic argument classification” (Levin, 1987; Bresnan and Kanerva, 1988). According to the theory of intrinsic argument classification, grammatical roles are analyzed in terms of two features: $\pm r$ and $\pm o$. The former is shorthand for “restrictedness” while the latter is shorthand for “object”. The fourway classification resulting from the interaction of these two features is mapped to the grammatical roles of LFG as shown in (779).

(779)	SUBJ	–r	–o
	OBJ	–r	+o
	OBJ _{θ}	+r	+o
	OBL	+r	–o

Zaenen (1993) accounts for auxiliary selection in Dutch by anchoring it to the feature of $\pm r$ with the selection principle provided in (780).

(780) When an intrinsically –r marked participant is realized as subject, the auxiliary is *zijn*.

In order to determine which participant is intrinsically –r marked, Zaenen (1993:150) proposes the basic principle provided in (781).

- (781) a. If a participant has more patient properties than agent properties, it is marked –r.
 b. If a participant has more agent properties than patient properties, it is marked –o.

In addition to the basic principle, Zaenen (1993:150) notes that the two ancillary assumptions provided in (782) are required.

- (782) a. If a participant has an equal number of agent and patient properties, it is marked –r.
b. If the sole participant of a verb has neither agent nor patient properties it is marked –o.

For the purposes of determining agent and patient properties, Zaenen (1993:147) follows Dowty and Ladusaw (1988) in attributing the properties listed in (783) with agenthood and the properties listed in (784) with patienthood.

- (783) a. volition
b. sentience (and/or) perception
c. causes event
d. movement

- (784) a. change of state
b. incremental theme
c. causally affected by the event
d. stationary (relative to movement of proto-agent)
e. referent may not exist independent of action of verb, or may not exist at all

A detailed assessment of Zaenen (1993) against the facts of Dutch goes beyond the scope of this discussion, but it is worth pointing out two weaknesses of the account that have relevance for Rotokas. First, as Zaenen (1993) acknowledges, the list of agenthood and patienthood factors in (783) and (784) is not exhaustive and it is unclear whether they are in fact the correct list for Dutch. Second, the algorithm used in the assignment of intrinsic argument classification relies on a simple tally of the number of factors that accrue to an argument, which assumes that all factors are equally weighted. However, some factors appear to be more important than others, not only in Dutch, but also cross-linguistically.

These considerations have led some authors to posit a hierarchy of factors. For example, Foley (2005) examines split intransitivity in a number of languages in the Austronesian family: Acehnese, Tolai, three Maluku languages (Dobel, Larike, and Taba), and the Philippine languages Kimaragang and Tagalog. To account for the fact that the unergative/unaccusative division varies across these languages, Foley (2005) proposes a hierarchy of accessibility to macro-roles, such that unergativity is associated with the verb classes at the top of the hierarchy and unaccusativity with the verb classes at the bottom of the hierarchy.

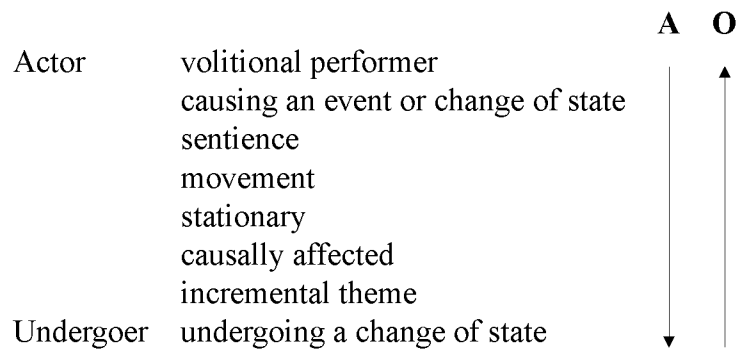


Table 10.9: Revised Macro-Role Hierarchy from Foley (2005)

The hierarchy of accessibility in Foley (2005) is similar to the Auxiliary Selection Hierarchy proposed in Sorace (2004).

CONTROLLED PROCESS (NON-MOTIONAL)	Selects HAVE (least variation)
CONTROLLED PROCESS (MOTIONAL)	
UNCONTROLLED PROCESS	
EXISTENCE OF STATE	
CONTINUATION OF A PRE-EXISTING STATE	
CHANGE OF STATE	
CHANGE OF LOCATION	Selects BE (least variation)

Table 10.10: The Auxiliary Selection Hierarchy

The hierarchies in Table 10.9 and Table 10.10 provide a means of capturing the alignment of semantic parameters with syntactic configurations that take into account the fact that some features are more important than others but it does not provide a mechanism for accommodating the fact that some factors may be in conflict with one another, and languages may differ in the way that they are ranked in importance. For example, in Rotokas, it was observed that a number of verb roots denoting processes that produce a result show β inflection and a potential explanation for their agentivity is provided by DeLancey (1985). However, verbs of bodily process that produce a visible result, but which are not controllable, such as “bleed” or “sweat”, show α inflection. Controllability in this case appears to “win” over “inferred causation” (if this is the right characterization), suggesting that the factors relevant to verb classification in Rotokas should be ranked accordingly.

10.3.3 Conclusion

In this section, the theoretical literature on split intransitivity was reviewed. Two major approaches to the phenomenon were discussed: the syntactic analysis, which treats split intransitivity

sitivity as a purely syntactic phenomenon, and the semantic analysis, which treats split intransitivity as a semantic phenomenon. While the syntactic analysis typically takes the form of Unaccusative Hypothesis, the semantic approach takes many forms, usually consisting of some type of mapping from lexical semantics to morphosyntax via linking rules.

The semantic account of split intransitivity has two distinct advantages in accounting for the facts of split intransitivity in Rotokas. First, by positing a mapping from lexical semantics to syntactic behavior, it provides a motivation for the semantic clustering of β monovalent verb roots observed in §10.1. Although the various semantic fields where the contrast is found cannot be easily characterized in terms of thematic roles or a single semantic parameter (such as telicity), they do show some coherence and reflect a number of the semantic factors identified in the literature. Second, the facts of Rotokas are consistent with Van Valin Jr. (1990)'s claim that "split-intransitive phenomena provide no evidence of analyzing the subject of class-S_o verbs as underlying syntactic object". There is no evidence in Rotokas of any object-like properties for α monovalent verb roots, since there are no known syntactic processes in Rotokas distinguishing monovalent verbs with α inflection from those with β inflection (see, for example, §9).

Chapter 11

Conclusion

In the previous chapters of the second part of this thesis, the nature of verbal inflection in Rotokas was systematically described. A preliminary hypothesis was put forward concerning the relationship between the two forms of verbal inflection found in Rotokas and grammatical roles. Although the evidence from valency-changing derivations generally supported the view that verbal inflection is predictable on the basis of valency, the behavior of bare verb roots revealed a more complicated picture, due to the existence of split intransitivity. The semantic motivations of split intransitivity were examined and a partially semantically motivated system was described, which was sensitive to some of the semantic factors described in the typological literature. The split between those verb roots that show α agreement and those that show β agreement resembles those described for other languages but the similarity found is more of a “family resemblance” (Wittgenstein, 1953/2001) than a systematic cross-linguistic parameter. In §11.1, some directions for future research on Rotokas are spelled out. In §11.2, the theoretical implications of Rotokas are drawn out.

11.1 Directions for Future Research

There are a few directions that future research on the nature of verbal inflection in Rotokas might take: more detailed analysis of tense/aspect/mood (§11.1.1); a systematic study of the behavior of loan verbs (§11.1.2); and comparative evidence from other dialects of Rotokas and/or other languages in the Rotokas family (§11.1.3). Each will be discussed in turn.

11.1.1 Tense/Aspect/Mood

Earlier it was concluded that there was no evidence of a single parameter governing whether a verb stem shows α or β agreement. It is important to bear in mind that absence of evidence is not evidence of absence. A detailed investigation of the meaning of the various tense/aspect/mood distinctions found in the language remains to be done. Firchow (1987) provides little more than

an inventory of forms and here the formal properties and basic meaning of those forms are laid out in §5.2.2.7, but a detailed analysis of their interaction with verb classes (i.e., an inventory of Aktionsart types) may shed some light on the proper analysis of the two classes of intransitive verbs.

The split between α and β inflection in the monovalent verb roots denoting sound emission events remains unexplained, but it is telling that many of the verb roots that show β inflection denote event types that can be construed as being bounded, since verbs of achievement (Vendler, 1967) are associated with unergativity in the cross-linguistic literature. Some additional support for this idea comes from the behavior of noun incorporation. The exception to the rule that bivalent verb stems show β inflection is noun incorporation, as described in §9.2.2. Although the generalization previously made was that incorporated nouns are non-specific/non-referential, it is equally true to say that noun incorporation describes non-telic, unbounded events—that is, activities in the Vendlerian classification. If the difference between these two classes proves to be aspectual in nature, it would provide additional evidence in favor of a systematic semantic basis for split intransitivity in Rotokas as part of a wider generalization concerning verbal inflection.

Unfortunately, the explanation of the distinction between α and β inflection in terms of Aktionsart and/or aspect remains speculative since my own elicitation work with native speakers of Rotokas failed to yield an unequivocal test for telicity in the language, such as the distinction between the prepositions *in* and *for* in prepositional phrases (e.g., *John breathed the poisoned air for less than five minutes* versus *John ate the hot dog in less than five minutes*). Future work on the language will have to delve more deeply into the nature of Aktionsart and aspect in Rotokas.

11.1.2 Loan Verbs

One lingering question concerning the various semantic classes identified in §10.1 is the extent to which it reflects a productive semantic system. Closer examination of the behavior of loan verbs may help illuminate the issue. Many verbs from Tok Pisin and English are being borrowed into Rotokas and their classification as α or β should provide some insight into the nature of the system. Generally speaking, verb stems borrowed into Rotokas from Tok Pisin show the form of inflection expected given their syntactic behavior. For example, the verb stem *iusi* “to use” (from *usim*) takes a direct object and shows β inflection, as illustrated in (785).

(785) *ragai opo guru-va iusi-a-voi aue ruu-sia arua tai*
 PRO.1.SG taro leaf-SG.F use-1SG β -PRES β CONN cover-DEP.SEQ vegetable CLF
 I use taro leaves in order to cover vegetables.

The majority of the verbs borrowed into Rotokas from Tok Pisin are monovalent and show α agreement—e.g., *rotu* “attend church”, as in (786), or *sikuru* “attend school”, as in (787).

(786) *ragai Rieko ruvara=ia pau-pa-ra-e ovusia rotu-pa-i-e*
 PRO.1.SG Rieko near=LOC sit-CONT-1SG_α-IP_α while church-CONT-1PL.EXCL-IP_α
eisi rotu-pa kepa
 LOC church-DERIV house
 I was sitting down next to Rieko while we prayed in church.

(787) *vieiasia-to Viviere uvare viapau sikuru-ro-epa*
 illiterate-SG.M Viviere because NEG school-3SG.M_α-RP_α
 Viviere is illiterate because he didn't go to school.

Unfortunately, very few of the verb stems borrowed into Rotokas from Tok Pisin fall into the various semantic classes identified in §10.1. However, the author recalls hearing the English verbs *bounce* and *ring* used as β verb stems, as in (788) and (789).

(788) *vaunsi-re-voi*
 bounce-3SG.M_β-PRES_β
 It is bouncing.

(789) *tereponi rigi-pa-re-voi*
 telephone ring-CONT-3SG.M_β-PRES_β
 The telephone is ringing.

The occurrence of a verb of motion-cum-manner and a verb of sound emission with β inflection suggests that the semantic subclasses discussed in §10.1 represent a productive system, but there are other borrowed verb roots that are not as well behaved. For example, Firchow (1984) cites a borrowed monovalent verb root *politiki* “to play politics” that shows β agreement, as in (790).

(790) *politiki-pa-re-voi*
 politics-CONT-3SG.M_β-PRES_β
 He is in politics.

11.1.3 Comparative Evidence

Another line of evidence that may shed light on the nature of the Central Rotokas system of verbal agreement is comparative analysis of other dialects of Rotokas (Aita, etc.) or other languages in the Rotokas family. Some preliminary investigation of the Aita dialect was initiated by the author during his last trip to Bougainville, but this work is in its infancy, having only established the basic phonological inventory of the Aita dialect (Robinson, 2006). The only language in the Rotokas family that has been described in print is Konua (also known as

Rapoisi), thanks to the vocabulary and grammatical notes of Müller (1954).¹ It would appear that the distinction between α and β verbal inflection is also found in Rapoisi, judging from the contrast between the inflection of the verbs in (791): the verb root *aba* “go” shows one form of inflection while the verb root *uri* “dig” shows another (Müller, 1954:???)

- (791) a. *aba-ra-ea*
 go-1SG $_{\alpha}$ -PRES $_{\alpha}$
 I am going.
- b. *uri-a-ba*
 dig-1SG $_{\alpha}$ -PRES $_{\beta}$
 I am digging.

The contrast is also seen in the contrast between verb roots and their causative counterparts. For example, the causative verb stem *uhipie* “kill” shows a different form of inflection than the verb root *uhi* “die”, from which it is derived, as shown in (792).

- (792) a. *uhi-ea*
 die-PRES $_{\alpha}$
 He is dead.
- b. *uhi-pie-a-ba*
 die-CAUS-1SG $_{\beta}$ -PRES $_{\beta}$
 I am killing.

The correspondences between Rotokas and Konua are fairly clear-cut: the form of the first person singular is identical in the two languages (*-ra* for α agreement versus *-a* for β agreement) and the realis present is *-ei* (α) or *-voi* (β) in Rotokas and *-ea* (α) or *-vo* (β) in Konua.

More than one form of verbal agreement can be found for a particular verb root in Konua, and the difference appears to be attributable to valency. In other words, Konua also possesses labile verb roots (see §9.1.1 for a discussion of labile verbs in Rotokas). For example, Müller (1954:73/107) contains the verb root *sisio* “wash” with both α agreement and β agreement with a note indicating that the β agreement is associated with transitive usage.

- (793) a. *sisio-a-ba*
 wash-1SG $_{\beta}$ -PRES $_{\beta}$
 I wash.
- b. *sisio-ra-ea*
 wash-1SG $_{\alpha}$ -PRES $_{\alpha}$
 I wash myself; I am washed.

¹The data in Müller (1954) must be interpreted with caution due to Müller’s lack of formal training in linguistics. SIL missionaries linguists working on the language note that Müller (1954) overlooks the allophony between [n], [l], and [r] and between [b] and [m] (Steve Blewett, pc).

Without more information concerning the valency of these verb forms, the data in Müller (1954) cannot shed a great deal of light on the diachronic origins of the Rotokas system. However, the existing data suggests that the other dialects of Rotokas and the other languages in the Rotokas family are likely to possess this distinction, and the differences between the various systems may shed light on the semantic and syntactic parameters involved.

11.2 Typological Implications of Rotokas

Before delving into some of the theoretical issues raised by the facts described here for Rotokas, it is worth summarizing the various construction types associated with α and β inflection. The construction types associated with α and β inflection are listed in Table 11.1.

α	monovalent verb roots ambivalent verb roots with a single core argument monovalent verb stems derived with <i>-ora</i> monovalent verb stems derived with <i>-piro</i> or <i>-viro</i> bivalent verb roots with an incorporated object monovalent verb roots with an incorporated oblique argument
β	bivalent verb roots ambivalent verb roots with two core arguments verbs of perception with a single core argument bivalent verb stems derived with <i>-pie</i>

Table 11.1: Grammatical Phenomena Associated with α and β Inflection

Is there a single parameter which can account for the split between those constructions that show α inflection and those that show β inflection? The answer would appear to be negative. The generalization that all verbs with two core argument show β inflection is complicated by noun incorporation, which does not show the demotion of a core argument to oblique status but rather involves some form of tighter integration between the verb root and the incorporated argument. Furthermore, noun incorporation is not restricted to bivalent verbs but also occurs with monovalent verbs that take oblique arguments.

From a typological perspective, the form of split intransitivity is somewhat novel in a few respects. First, to the extent that an account of the assignment of intransitive verb roots to the two classes of verbal inflection can be provided in terms of lexical semantics, it does not appeal to the “usual suspects”—i.e., the semantic features typically discussed in the literature on split intransitivity. Second, there is no identification between one of the two types of subjects and direct objects. There is no verbal agreement for direct objects in Rotokas and direct objects show very different patterns of constituent order than subjects, regardless of whether they are associated with α or β agreement. The nature of split intransitivity in Rotokas is of typological

interest since it undermines the Unaccusative Hypothesis while simultaneously challenging the various theories concerning the parameters of its semantic basis.

Does Rotokas have grammatical relations? Verbs always take their agreement features from a single core argument and it therefore makes sense to posit a grammatical relation of subject. What other grammatical relations need to be posited for Rotokas? Although monovalent verb roots show differing patterns of verbal agreement — some show α agreement by default while others show β — there are no other syntactic consequences of this division. The evidence from previous chapters shows that split intransitivity is only skin deep in the sense that it is a morphological phenomenon without deep syntactic implications—i.e., no major syntactic processes have been identified which reflect the distinction. This is not the case in some split-S languages, as Dixon (1994) observes. In the Northern Athapaskan language Slave, for example, causatives can be derived from S_o but not from S_a ; passives can be derived from S_a but not S_o ; and noun incorporation operates on O or S_a but not on S_o . However, in Rotokas, causatives can be derived from either α or β monovalents (cf. §9.1.2); there is no passive, but the resultative construction is not limited to a particular valency class (cf. §9.2.3; and noun incorporation operates on direct objects and oblique arguments of both α and β verbs (cf. §9.2.2).

Predictions concerning which form of agreement is taken by a particular verb involves features of S and O but not of A. Although it is possible to characterize this as some form of syntactic ergativity, there seems little need to postulate ergative grammatical relations. Rather, a more modular, monostratal theory of grammar involving interacting constraints is better able to handle the multiple factors that determine the form of verbal agreement in Rotokas. This is consistent with the reappraisal of the phenomenon of syntactic ergativity in languages where it has been argued to exist, such as the Mayan family. Stiebel (2006) analyzes the agent focus construction in the Mayan family using an optimality-theoretic analysis of agent focus (following Aissen (1999b,a)) and concludes that there is no need to posit distinct grammatical relations, such as ergative and absolutive, in the syntax of Mayan languages:

“The analysis of agent focus presented in this paper also indicates that syntactic ergativity in Mayan — an interpretation of the data that might be invoked by the separate treatment of the transitive subject in focus, questions and relativization — is just an epiphenomenon of conflicting constraints and does not result from a distinct syntactic representation.”

The form of verbal agreement is not always semantically motivated, as was seen earlier with the aspectual verbs *rovo* “start” and *opesi* “finish” (see §6.3.2.2), which take their form of agreement from the bare verb stem with which they co-occur. Although it could be argued that it is the semantics of the bare verb stem that determines the form of agreement, this phenomenon argues in favor of some form of syntactic representation for feature sharing, where the feature in question has one of two possible values: α or β .

The classification of a verb stem as α or β is not a property of a verb root by itself, since a given verb root can show more than one type of inflection (as shown by the labile verb roots). It does, however, appear to be a lexical property, judging from a number of considerations.

First, there are a number of verb stems that obligatorily occur with the reflexive/reciprocal marker (see §9.2.1) and cannot occur alone—e.g., *oravurevure* “shake, churn”, illustrated in (794). The fact that these stems cannot be derived from their corresponding verb roots means that they must be considered stand-alone entries in the lexicon.

- (794) *avaka-va ora-vurevure-pa-o-i* *riro-toa=ia kiuvu*
 salt-SG.F RR-move.RDP-CONT-3SG.F_α-PRES_α big-SG.M=LOC wind
 The ocean is churning from the big wind, it isn't still.

There also appear to be a few idiosyncratic cases of causative verb stems that do not have an identifiable root and even a few that are monovalent—for example, the verb *kakupie* “shout”, which appears to contain the causative suffix *-pie* but does not show the properties normally associated with such derived stems—i.e., it lacks a corresponding root and is monovalent, as illustrated in (795) and (796).

- (795) *oira-to kakupie-pa-re-vo uvavu=va*
 man-SG.M shout-CONT-3SG.M_β-RP_β somewhere=ABL
 A man is shouting from somewhere.

- (796) *Virepa riro-vira kakupie-re-vo ovusia evao-va kove uvare va*
 Virepa big-ADV shout-3SG.M_β-IP_β while tree-SG.F fall because PRO.3.SG.N
toe-re-vo koora-toa=va
 cut-3SG.M_β-IP_β possum-SG.M=ABL
 Virepa shouted loudly when the tree fell because he cut it with a possum (on it).

For example, although there is no verb root *uruuru* “fail to notice”, even though there is a reflexive/reciprocal verb stem *oraururu* “fail to notice”, illustrated in (797), and a causative verb stems *uruurupie* “distract (make fail to notice)”, illustrated in (798).

- (797) *ora-uruuru-pa-ra-i* *osia oira-ra ragai=ia pute-oro*
 RR-fail_to_notice-CONT-1SG_α-PRES_α as man-HUM.PL PRO.1.SG pass-DEP.SIM
kare-a-i
 return-3PL_α-PRES_α
 I didn't notice when the men passed by me on their way back.

- (798) *Rapeasi uruuru-pie-pa-re-vo* *Kori ovusia Siopi urio-ro-e*
 Rapeasi fail_to_notice-CAUS-CONT-3SG.M_β-IP_β Kori while Siopi come-3SG.M_α-IP_α
Rapeasi toe-sia
 Rapeasi cut-DEP.SEQ
 Kori distracted Rapeasi while Siopi was coming to cut Rapeasi.

A similar pattern is observed for other verb roots, such as the hypothetical verb root *ruvu* ‘‘startle’’, there are nevertheless two verb stems which appear to be derived from it—namely, a reflexive stem *oraruvu* ‘‘to be startled’’, illustrated in (799), and a causative stem *ruvupie* ‘‘startle’’, illustrated in (800).

(799) *ora-ruvu-ro-epa* *Ropi uvare* *rera* *sita-pie-re-va*
 RR-startled-3SG.M_α-IP_α Ropi because PRO3.SG.M surprised-CAUS-3SG.M_β-RP_β
Rausirea
 Rausirea
 Ropi was startled because Rausirea surprised him.

(800) *Sitae ruvu-pie-re-vo* *Koka ovusia kapu-a* *iava*
 Sitae startled-CAUS-3SG.M_β-IP_β Koka while sore-SG.N POST
upia-pa-o-e
 feel_pain-CONT-3SG.F_α-IP_α
 Koka startled Sitae while he was in pain from a sore.

Verb roots of this sort are in some sense the mirror image of the labile verb roots discussed in §9.1.1. These verb roots can only function with derivational morphology while labile verbs can only function without derivational morphology. The existence of these verb roots is important, because it underscores the lexical nature of derivational processes. In other words, reflexive/reciprocal and causative verb stems cannot be treated as a purely syntactic derivation that relates two types of sentences, since there is not a base form from which the reflexive/reciprocal or the causative could be derived in the case of some stems, such as the previously-mentioned verb stems *kakupie* or *oraururu*. Consequently, the two forms of verbal inflection cannot be viewed simply as reflexes of a particular syntactic configuration. Similar arguments could be made on the basis of intransitive verb stems that occur in the reflexive/reciprocal or resultative construction discussed in §9.2.1.

There has been a great deal of debate concerning the proper analysis of split intransitivity, and whether it is primarily a semantic or syntactic phenomenon. According to the analysis of Rotokas advocated here, this is a false dichotomy, in the sense that is not really either, since split intransitivity occurs at the intersection of syntax and semantics, and while both are necessary elements of a complete account, neither is sufficient.

11.3 Conclusion

To conclude, this thesis has focussed on tracking down the syntactic and semantic correlates of two distinctive patterns of inflection (reflected in both subject agreement and TAM marking). Although the search has been ultimately inconclusive—requiring a high degree of arbitrary stipulation in the verbal lexicon—the analysis of the language’s morphosyntactic complexities has served to lay out fundamental aspects of this relatively undescribed Papuan language.

Appendix A

An Inventory of Verb Classes

An electronic lexical database was developed by the author during his fieldwork in Bougainville. This database was based on a pre-existing Shoebox dictionary of Rotokas that was originally developed and released to the public by Irwin Firchow and made available by the Summer Institute of linguistics (Firchow, 1973, 1984). All of the verbs in the dictionary are listed below according to their valency (in angle brackets), argument type (in square brackets), and classification with respect to the distinction between α and β (in vertical brackets).

This list was automatically generated from a Shoebox dictionary using a Python script written by the author. The script takes advantage of a Shoebox class library developed by the author, which has been incorporated into the Natural Language Toolkit for Python (Loper and Bird, 2002, 2004)—see www.nltk.org for the latest version.

A.1 ⟨1⟩ [SUB] || α || (Total: 385)

Total: 385

aaooao “become grandparents”
aapaapau “unfamiliar, visit”
aasi “decorate with beads”
aaui “blinded by light”
agara “quiet, unasserting, calm”
agasi “be full”
ageagesi “laugh”
agesi “laugh”
aguvi “clean or worn clear”
aio “eat”
aioaio “snack”
aiva “easy, simple”

aku “salty”
akuta “open mouth wide”
api “embarrassed”
apopoi “difficult, expensive, hard to get”
araiva “easy, simple”
arakasi “deserted, vacant”
ararave “wilt, weaken”
arasi “skillfully, carefully”
areo “recover”
arii “be ashamed”
arikisi “curdled”
aritaru “delay, linger, hesitate”

<i>arua</i> “???”	<i>gausisi</i> “smooth”
<i>asige</i> “sneeze”	<i>gauvioro</i> “easy, slow”
<i>asikauru</i> “rust”	<i>gavata</i> “rot, putrify”
<i>asiriko</i> “dirty, soiled”	<i>gavogavoto</i> “loosened, slack”
<i>asisoe</i> “numb, sickly, paralyzed”	<i>gesi</i> “smell, taste”
<i>asitaisi</i> “march in line”	<i>giigiirau</i> “groan”
<i>atara</i> “huddle together, sleep together”	<i>gisi</i> “drown, fill up with”
<i>atari</i> “fish”	<i>gitagita</i> “tough”
<i>atario</i> “hunt”	<i>goagoara</i> “boiling”
<i>atoro</i> “weak, disinterested, lazy, disabled”	<i>goegoe</i> “slack, loose”
<i>ava</i> “go”	<i>gogoura</i> “pass on responsibility, go on completely, leave behind”
<i>avavaia</i> “frustrated, confused”	<i>gorogoro</i> “boil, broil”
<i>aveave</i> “cross, fussy”	<i>gorotu</i> “soft, pithy”
<i>aveaveo</i> “soreness in groin”	<i>goru</i> “strong, tight, firm, hard”
<i>averu</i> “tissue-like, thin”	<i>gotogoto</i> “hung up”
<i>avi</i> “sunset”	<i>govuto</i> “gray, muddy”
<i>avuka</i> “age”	<i>gue</i> “lean”
<i>eaka</i> “relax, be tranquil”	<i>guvuguvurio</i> “bubble up, effervesce, splash”
<i>eavi</i> “ooze pus”	<i>iipa</i> “go up, go on top”
<i>eoro</i> “suspend like fruit”	<i>ira</i> “go ahead, go first”
<i>erako</i> “collect firewood”	<i>iruviro</i> “quarantine”
<i>erakusi</i> “persisting”	<i>itako</i> “sour”
<i>erao</i> “wake up, arise from sleep”	<i>itoroko</i> “stiff”
<i>ereere</i> “walk across something suspended or lying on the ground (e.g., log)”	<i>kaa</i> “gag”
<i>ereviako</i> “walk along, step along”	<i>kaakasi</i> “hot”
<i>eru</i> “stink, spoil, decay”	<i>kaava</i> “feint with bow and arrow”
<i>eteku</i> “short”	<i>kaeviro</i> “lift off, take off”
<i>gae</i> “run”	<i>kaie</i> “make trash, create a mess”
<i>gai</i> “aghast, shocked”	<i>kaipori</i> “perky, alert”
<i>gapu</i> “naked”	<i>kaitutu</i> “resolute, steadfast, tight”
<i>garagarako</i> “excited, startled, anxious, shake”	<i>kaki</i> “cracked open, split open”
<i>gare</i> “small, little”	<i>kapeaa</i> “insubstantial, flimsy, unstable”
<i>gariava</i> “???”	<i>kapoo</i> “poor, destitute”
<i>garigariava</i> “???”	<i>kapua</i> “have sores”
<i>garo</i> “loose, slack”	<i>karapi</i> “sing high pitched”
<i>garogaro</i> “loose”	<i>karavisi</i> “angry, upset”
<i>garutu</i> “slow, dilly-dally”	<i>karavuru</i> “get dusty”
<i>gaurirao</i> “slippery, smooth, polished”	<i>kare</i> “return”
<i>gauru</i> “migrate, uproot, leave home”	<i>karekare</i> “itch”

karekare “return”
kareke “appear, happen, come to be”
karivai “have an appetite”
kasi “start a fire, make a fire”
kasikasi “cross, angry, difficult, diligent”
kasirao “hot”
katukatu “rot away, flake off, unfastened”
kauo “jump”
kauokauo “jump up and down”
kavau “be born”
kavee “cool off in a shaded spot”
kaviru “steal, rob”
kavori “collect crayfish or lobster”
kavu “left behind, left over”
keেকে “chipped, shattered”
keke “look”
kekeputu “nearly, almost”
keopa “taste good”
kerau “stiff, rigormortis, rigid”
keru “harden like bone”
kerui “thin, bony, skinny”
keruria “persistent, stubborn, determined”
kesi “limp”
kevaita “kid, joke, jest”
kevoisi “persistent, determined”
kii “short of, lacking”
kiire “play tag”
kirava “???”
kiru “have sore near mouth”
kirukiru “crisp”
koata “enter”
koeta “mature, grow, ripen”
koi “high pitched sound”
koie “act like a pig”
kokoisi “sweat, perspire”
kokopeko “unconscious, in a stupor”
kokoro “crazy, insane, foolish, stupid”
kokoruu “insect-infested”
kokosi “itch, sting”
kokovae “sing”

kooe “swing on something”
kookooia “mourn, singsing-cry”
kookoopeko “faint”
kooro “have hampered speech, be hoarse”
koova “sing”
kopii “die, very ill”
kopuasi “restored, rejuvenated”
kora “vent anger or frustration on an object”
korara “spin top in play”
korau “clear, unobstructed”
kosi “go out, exit, come out”
kosikosi “come out, exit”
kosiviro “go out, exit”
koto “hang”
koukouo “laugh heartily”
kova “grow, mature”
kovasi “pregnant”
kovata “thrilled, happy”
kove “fall, drop”
kovekove “drip repeatedly”
kovokovo “play Jew’s Harp”
kue “reproduce, bear fruit”
kukauviro “deteriorate”
kupukupu “excited, anxious”
kurokuro “arthritic, paralyzed”
kusii “cool off”
kuukuuvu “lie, deceive”
kuuri “grunt, huff and puff”
kuuvaki “quiet”
kuuvu “lie, deceive”
kuvau “alone”
kuvoro “burned out, extinguished”
lotu “worship, attend church”
oe “throw up”
ogaaga “whisper, talk quietly, be sly”
ogoe “be hungry”
oirao “true, valid, real”
okoee “crab-hunt, collect crabs”
okote “collect crabs”
oku “miss out”

<i>opaopara</i> “disoriented, lost”	<i>pupukai</i> “dirty from dust”
<i>opesiko</i> “vanish, disappear”	<i>pupuraki</i> “perspire, sweat”
<i>opokavu</i> “put belt around the stomach to end hunger pangs”	<i>puupuru</i> “darkened”
<i>oreore</i> “tired of doing something, dislike doing something”	<i>raaka</i> “dry up”
<i>ori</i> “cook”	<i>ragegeta</i> “dried out, dessicated”
<i>otara</i> “recline, lean back”	<i>rageragete</i> “weakened”
<i>oveove</i> “revealed, uncovered, exposed”	<i>ragorea</i> “slump, wilt, nod, doze”
<i>ovoi</i> “finish”	<i>raipi</i> “clear”
<i>ovoio</i> “be.last”	<i>raka</i> “dry, reef”
<i>papeo</i> “obedient”	<i>rakote</i> “die down, near completion”
<i>papu</i> “extinguish, die out, without”	<i>rao</i> “drain”
<i>paro</i> “wander?”	<i>rarakeo</i> “light weight”
<i>pau</i> “sit”	<i>rare</i> “be ashes”
<i>pekapekara</i> “line up”	<i>rasirasi</i> “satisfied, content”
<i>pekoe</i> “uneasy, restless, impatient”	<i>rasivauru</i> “???”
<i>pepe</i> “sleep”	<i>raverave</i> “weaken, tire”
<i>perepere</i> “roll”	<i>rearea</i> “rest, relax”
<i>periko</i> “roll, fall”	<i>reasi</i> “be disinclined, tired of, dislike”
<i>peru</i> “ripe”	<i>regeri</i> “play, insincere”
<i>pesipesiko</i> “fade away, disappear, lost”	<i>regore</i> “bent, crooked”
<i>piaopa</i> “stubborn, not open to suggestions”	<i>rerei</i> “make mischief, play pranks, play around, goof around”
<i>pigoga</i> “infected”	<i>riariao</i> “sweat”
<i>pikarata</i> “explode”	<i>riga</i> “spread, scattered”
<i>piru</i> “slip, slippery”	<i>siee</i> “slack, loose”
<i>pogata</i> “burst open”	<i>sieru</i> “rainwashed, soaked, drenched”
<i>pokapoka</i> “lazy, unenthusiastic”	<i>siiguru</i> “drum, beat drum”
<i>poko</i> “explode, erupt”	<i>siiroi</i> “stop activity, quiet, silent”
<i>pokopoko</i> “explode repeatedly”	<i>siitako</i> “be troubled”
<i>popote</i> “whiten, turn white”	<i>sikasika</i> “spread, disperse”
<i>pore</i> “turn”	<i>sikopa</i> “nearly half full”
<i>porete</i> “recovered”	<i>siku</i> “wallow in mud”
<i>poro</i> “wet, damp”	<i>sipari</i> “comb”
<i>posige</i> “snort, half-sneeze”	<i>sipei</i> “salty, sting”
<i>posiposi</i> “dry”	<i>sipiro</i> “play”
<i>pou</i> “arrive”	<i>sirakoisi</i> “sit and worry or sorrow”
<i>pouka</i> “lean, inclined”	<i>sirao</i> “pity, feel sorry for, care for”
<i>povuvau</i> “dull, blunt”	<i>sirorova</i> “foggy, hazy”
<i>pugu</i> “busy, occupied”	<i>sisigarue</i> “clean”
	<i>sisisa</i> “shine brilliantly, glory”

<i>sisiu</i> “bathe, wash”	<i>uririko</i> “scared stiff, stiff with fright”
<i>sitoka</i> “intense pain”	<i>ururupa</i> “shut the eyes”
<i>tagugu</i> “cloudy, overcast, uncertain”	<i>urusi</i> “dream”
<i>takau</i> “tired, disappointed”	<i>utave</i> “blow Triton’s trumpet”
<i>takoto</i> “shout”	<i>uteo</i> “cold, cool”
<i>taku</i> “bow over, bend over”	<i>uturoo</i> “walk hesitantly, toddle along, walk like toddler”
<i>takutaku</i> “low to the ground”	<i>uu</i> “meet together, gather”
<i>taoro</i> “fat, obese”	<i>uuge</i> “slack, loose”
<i>taovi</i> “thick”	<i>uukaio</i> “drink”
<i>tapetuta</i> “criss-crossed”	<i>uureo</i> “sour, bitter”
<i>tapurisi</i> “unconscious, sleep soundly”	<i>uusi</i> “sleep”
<i>taraigegea</i> “stubborn, not open to suggestions”	<i>uvagi</i> “deaf”
<i>tarao</i> “divine sickness”	<i>uviro</i> “cross over”
<i>tariata</i> “scorched”	<i>uviru</i> “cooked completely”
<i>tariri</i> “wander about, run around”	<i>uvui</i> “be able”
<i>taritarikoi</i> “go in circles”	<i>uvuru</i> “meet, gather, assemble”
<i>taruko</i> “pregnant”	<i>vaagi</i> “pit cook, steam bake”
<i>taruu</i> “continuously falling”	<i>vagapa</i> “fall a great distance”
<i>tasi</i> “wear shoes”	<i>vagevage</i> “race, compete”
<i>tauai</i> “far off”	<i>vakuvaku</i> “scorn, doubt, scoff”
<i>tava</i> “expose hidden deeds, dry in the sun”	<i>vara</i> “come down, descend”
<i>tavatavari</i> “disperse”	<i>variri</i> “pray, petition”
<i>tugura</i> “complete journey, arrive at an intended point”	<i>varivarike</i> “hasten”
<i>tupe</i> “next in line, follow suit”	<i>varu</i> “go up, ascend, loose”
<i>tupetupereo</i> “in pairs”	<i>varu</i> “find meat”
<i>tupitupi</i> “wet, moist, damp”	<i>varuvaru</i> “healthy, vigorous”
<i>turi</i> “exceed limits”	<i>vasava</i> “cover over, grow new skin”
<i>tutuvagi</i> “nightfall, become night, dark”	<i>vasi</i> “???”
<i>tuukau</i> “stiff, rigid”	<i>vasivasi</i> “important, outstanding”
<i>tuutuusi</i> “shake, quiver”	<i>vatasioko</i> “unsettled, discontent”
<i>tuuvu</i> “brave, steady, resolute”	<i>vatatopo</i> “be ready, be careful”
<i>tuuvuu</i> “swell”	<i>vatau</i> “hide”
<i>tuvituvito</i> “sore”	<i>vatukoro</i> “coagulate, thicken”
<i>tuvutuvuke</i> “frequent”	<i>vavarai</i> “wild, undomesticated”
<i>ugoro</i> “cold”	<i>vavata</i> “heavy”
<i>uguro</i> “soggy, placid”	<i>vavau</i> “breathe”
<i>upe</i> “wear Upe”	<i>vavauko</i> “talk in one’s sleep”
<i>urio</i> “come”	<i>vavavu</i> “bitter taste”
	<i>vavio</i> “dodge, avoid”

vavorii “shut eyes”
vearo “good, fine, well”
vegovego “picnic in the jungle”
veke “become gel, be sticky, become paste”
vepu “yell”
vera “leave”
verevereko “roll”
veri “worthless”
vesi “portion out a bit at a time, space out activity”
veve “completely ripe”
vevei “fully ripe”
viae “clear, innocent”
viaka “clear”
vieiasia “illiterate”
vieviei “enumerate, count several objects”
vigovigo “hot, hot”
viiaka “empty, void of, vacant”
vioro “ripe”
viovoko “become adolescent”
virakoi “orphaned”
virata “wild, untamed after once being tamed”
virikasi “very hot, difficult”
virivari “protecting, shielding, averting danger”
virivirio “think of one’s self only, self centered thinking”

viroo “return as inevitable consequence”
viru “move”
vitavoko “hard”
viuru “fight”
viuviu “straight, unpretentious”
voevoe “belch, burp”
vogeta “draw in stomach, have empty stomach”
vogete “ecstatic, joyful, smile”
vogisi “saturated”
voki “become night, get up”
voosi “blind”
voovoosi “settle out of a liquid, solidify”
vore “return, come back, go back”
voruvoru “wrinkled”
vovosi “settle out of a liquid”
vovueo “unsalty, tasteless”
vuato “clear out”
vuavua “cool”
vuivui “dirty”
vuri “bad, inferior, spoiled, wrong”
vuro “out-of-it, stupified, drunk”
vutuko “round, panlike”
vuvui “transparent”
vuvure “blow”
vuvutau “vaporize, steam, smoke”

A.2 ⟨1⟩ [SUB] ||β|| (Total: 66)

Total: 66

aata “swim”
aka “open the mouth, shout”
asigo “speak Rotokas”
eeko “defecate”
gau “cry, weep”
gaugau “cry”
gipugipu “whimper”
gosigosi “limp”

guruko “make noise”
ikaikau “run”
ikau “run, hurry, speed”
kapere “swim with part of the body out of the water”
kapuu “dumb, not speaking”
koikoi “groan with pain”
koke “make rain”

kokoroku “crow”
kovo “work”
kukuuku “make footfall”
kupare “smoke, produce smoke”
opoko “defecate, eliminate”
pai “confused, difficult, stuck”
papa “fly”
parakau “light up, spread across an expanse”
paru “flow, move, go, run”
pegu “bark”
pegupegu “bark”
pigo “defecate (chicken)”
pika “splash”
puapuata “splash over”
pupi “play bamboo pipes”
puu “break wind”
raraka “become light”
raurau “sway back and forth”
reku “genuflect, kneel, fold over”
rekureku “kneel repeatedly, dance bending the
knees deeply”
rere “descend”
rigorigo “stroll, roam”
ritoko “defecate (pig)”
roge “thirst for”
roko “go into, penetrate”

roru “happy, glad, pleased”
ruu “stop”
sikere “streak of light, start to shine, dawn”
sipokoro “sprout through surface”
sipukao “sprout”
sipusipu “grow, shoot up”
sirusiru “shiny”
siruvau “good-looking, nice appearance”
sisikore “shine, gleam, glisten”
taaripa “circle, spin”
tori “run away, flee”
tou “be, stay”
tugisi “defecate (dog)”
tupi “defecate (rat or insect)”
ukauka “swish around, splash around”
uuko “get water”
vauvau “make noise, make a ruckus”
vekaveka “gasp, breath heavily”
veu “be angry”
viku “go to garden”
visiko “play”
viviko “urinate, piss, pee”
voakou “eliminate feces or urine”
voka “walk, scan, glance through”
vusivusi “burst forth, erupt, break out”
vusivusivi “appear, come out”

A.3 ⟨2⟩ [SUB, OBL] ||α|| (Total: 55)

Total: 55

agigio [-pa] “respect”
aite [-re] “father”
apota [-pa] “poor, lacking”
arikoko “pay respect, honor by avoidance”
asia “dislike, without”
aukue [-re] “show off”
avekata “easy, simple”
avivike [-pa] “mark as important, pay respect
towards, honor”

ega [-ia] “rejoice, feel pleasure”
era “sing”
geuru [-re] “snarl and spit”
isiva [-re] “back up, reverse, reject, turn back
on, turn back towards”
kasipu “angry, cross, pissed off”
kaureo “contradict, disagree, stubbornly
against, rebellious”
kausioapa “stubborn, unrelenting, concerned,

anxious”
kavorou “covet, keep something intended for another, intercept”
keera “call for, beckon to, signal for meeting”
keri [-*va*] “make enemies with, reject friendship”
korukoru [-*re*] “block, obstruct, hinder, deter”
oive [-*va*] “shout, yodel, yell”
oove “menace, frighten with gestures, challenge with gestures”
oto [-*va*] “fornicate, commit adultery, rape”
ovaovari [-*re*] “forget something recently thought of, remember but not for long”
ovau [-*re*] “forget”
pako “break, raze, tear down”
paupau “race, compete”
pesi [-*re*] “forget”
poreo [-*va*] “commit incest”
rate [-*va*] “stare at”
reoreo [-*re*] “converse, discuss”
riata [-*ia*] “disclose, reveal hidden message, boast about something”
riu [-*re*] “irritate, pester”
rui “spit out”

ruipa [-*pa*] “like, want, desire”
sirava [-*re*] “hiss”
siririko [-*re*] “peek through opening”
sisivare “inspect, examine intently, search”
taea [-*pa*] “deceive, deny, accuse”
takato [-*re*] “argue”
tarai “understand”
tarataraa [-*pa*] “embarrassed for lack of something”
tavitavi [-*pa*] “tell”
upia [-*va*] “in pain, sick”
uugaa [-*va*] “kiss someone”
vagu [-*re*] “proud”
vari [-*re*] “feint an action with a spear or axe, threaten”
vasiare “dislike”
vavagisi [-*ia*] “difficult, confused”
viiroo [-*pa*] “repulsive”
viki [-*ia*] “toss out, throw away, lose”
vikuta [-*re*] “whistle with the lips, tongue, or teeth”
viokeke “whistle with pursed lips”
voki “become night”
vootu “vote for, elect”
voroko [-*va*] “disobedient”

A.4 ⟨2⟩ [SUB, OBL] ||β|| (Total: 35)

Total: 35

aivaro “meet with, go directly to”
apo “miss out on something, come up short of”
atu “too much, overflow”
aveavero [-*ia*] “incite to anger”
iru “delouse”
kapekape “embrace, grip with arms not meeting”
kavikavi [-*re*] “combine, work together”
kaviko “love intensely”

kokee [-*re*] “peek through a blind or crack”
koroto [-*re*] “meet together”
kuara [-*va*] “yell at”
kuga [-*ia*] “bump into, nudge”
oruo [-*ia*] “diligent”
pae “appropriate another’s possession, identify”
pitu [-*ia*] “hold, alight”
raavaa [-*re*] “ready, meet”
sigma [-*ia*] “open”

<i>siki</i> [-re] “moon, expose bare ass to”	<i>tauo</i> [-pa] “offer in ceremony”
<i>taagau</i> [-ia] “step over something, jump over, pass over”	<i>tue</i> “harvest, pick a leaf crop, wait”
<i>tagau</i> [-ia] “jump over”	<i>uvisi</i> [-ia] “grip tightly, hold onto firmly”
<i>tagava</i> “salute, shield the eyes with hand”	<i>vato</i> [-pa] “honor”
<i>tara</i> “look for, search for, seek”	<i>vaute</i> “decorate with flowers, feathers, etc.”
<i>taratara</i> [-ia] “unable to recognize, uncomprehending”	<i>veku</i> [-va] “bark”
<i>tare</i> [-re] “await in vain”	<i>vikiviki</i> [??? - ia] “toss several things”
<i>tasiasi</i> [-ia] “stomp on, step on repeatedly”	<i>vorevore</i> “repeat”
	<i>vura</i> “look at, gaze upon”
	<i>vusi</i> “burst forth, erupt, break out”

A.5 ⟨2⟩ [SUB, O OBL] ||β|| (Total: 5)

Total: 5

<i>piiro</i> “point towards”	<i>vatevate</i> [-pa] “exchange”
<i>rekesi</i> “explain clearly, recognize truth of”	<i>virutu</i> [-re] “squeeze out a liquid, extract”
<i>vate</i> [-pa] “give”	

A.6 ⟨2⟩ [SUB, O] ||β|| (Total: 482)

Total: 482

<i>aato</i> “answer”	<i>apui</i> “dig a ditch”
<i>aaviito</i> “purify, remove altogether”	<i>are</i> “request, ask for, call for”
<i>aavito</i> “cure”	<i>areii</i> “organize”
<i>agaru</i> “complain”	<i>arirao</i> “harvest food”
<i>agesi</i> “laugh at”	<i>aroviaku</i> “cool anger, pacify, persuade”
<i>agiagi</i> “greet, welcome back, be reconciled”	<i>aruo</i> “weed garden”
<i>agoagoto</i> “flatter”	<i>arupa</i> “fertilize, cause growth in garden”
<i>aio</i> “eat”	<i>asita</i> “apply putty”
<i>aioaio</i> “snack”	<i>asivuru</i> “collect melons or cucumbers”
<i>airerei</i> “safeguard, protect”	<i>ate</i> “weigh, scale”
<i>ake</i> “ask”	<i>ateate</i> “weigh, scale”
<i>akoro</i> “charm with powder or with package of powerful objects”	<i>ato</i> “harvest from tree by cutting or picking”
<i>aku</i> “salted”	<i>atoato</i> “wipe away, smear on”
<i>apeapei</i> “claw at”	<i>auau</i> “quiet someone”
<i>apei</i> “scratch”	<i>aue</i> “ignore”
	<i>avaavaeo</i> “sort out”

<i>avaavao</i> “act simultaneously, anticipating”	<i>gaveru</i> “drop, lose grip”
<i>avaisi</i> “spice food, flavor vegetables with aromatic plants or herbs”	<i>gavi</i> “wipe off, rub”
<i>aveverau</i> “release from one’s responsibility unintentionally”	<i>gerigeri</i> “knaw on, bite lightly”
<i>avokori</i> “another kind, different, not recognized”	<i>getegete</i> “spoil something, ruin something”
<i>avu</i> “bite, remove”	<i>getu</i> “break”
<i>avui</i> “make hole in the nose, pierce septum in nose”	<i>gevo</i> “secure something”
<i>avuru</i> “swarm, swarm on, be attracted to”	<i>goagoa</i> “???”
<i>eaka</i> “hand over, give up, concede”	<i>gogi</i> “loot, take spoils”
<i>earova</i> “give generously without thought of reward”	<i>gogu</i> “overlook, miss seeing”
<i>erii</i> “prompt someone to do something, urge someone to action”	<i>gope</i> “drop”
<i>egaega</i> “compliment, be enthusiastic”	<i>gopori</i> “tickle”
<i>epa</i> “peel, husk”	<i>gopu</i> “break, take out of proper place, dislocate”
<i>eri</i> “dig, chisel”	<i>gore</i> “bow down, bend down”
<i>erieri</i> “dig, chisel”	<i>gori</i> “turn aside from, separate from”
<i>erii</i> “persuade”	<i>goro</i> “dislodge, pry loose, take out”
<i>eriikasi</i> “push”	<i>gota</i> “catch”
<i>eto</i> “build a fire”	<i>govugovu</i> “clean out, purge”
<i>evei</i> “recognize”	<i>gua</i> “shake penis”
<i>gaa</i> “wedge, pry”	<i>guagua</i> “masturbate, jerk off”
<i>gaari</i> “hoe, heap up ground”	<i>gugi</i> “twist”
<i>gae</i> “follow”	<i>gugiugi</i> “twist repeatedly, screw or unscrew”
<i>gaegaere</i> “drift”	<i>gugura</i> “gather in a heap, bunch together”
<i>gagari</i> “plane wood”	<i>guiguisi</i> “spray out”
<i>gagarike</i> “scratch, rake with claw”	<i>guru</i> “meet, heap up, assemble”
<i>gago</i> “skin”	<i>guruguru</i> “gather in a heap, bunch together”
<i>garigari</i> “scrape”	<i>guvaguva</i> “cool off”
<i>garu</i> “shave head with bladed instrument”	<i>guvi</i> “come out of hiding, reveal something, expose”
<i>gasi</i> “break, penalize, break the law, condemn”	<i>iia</i> “shoot”
<i>gasigasi</i> “break into parts, splinter”	<i>ipu</i> “dam up”
<i>gatagata</i> “chew”	<i>iraira</i> “stretched out in front”
<i>gatao</i> “extract out juice, suck out juice”	<i>ireire</i> “shoo out of the way, warn of impending danger”
<i>gatu</i> “pour out, overflow into another vessel”	<i>iruuta</i> “mess up, disorder, make untidy”
<i>gavagava</i> “soften, cook to soft texture”	<i>ito</i> “struggle with, pull back and forth, grapple”
	<i>iusi</i> “use”
	<i>ivia</i> “investigate, scout out, test”
	<i>ivu</i> “pull”

<i>kaa</i> “strangle”	<i>kave</i> “whisper, reduce the strength or heat of something”
<i>kaapisi</i> “pinch together, grip with pincers”	<i>kaveruko</i> “hold in arms”
<i>kaareko</i> “scour, clean by scraping”	<i>kavikaviru</i> “steal”
<i>kae</i> “carry”	<i>kaviru</i> “steal, rob”
<i>kakapu</i> “place in sling for purpose of carrying”	<i>kavo</i> “scavenge, pick up, collect”
<i>kakavu</i> “scoop up with the hands”	<i>kavokavo</i> “perform sorcery, work black magic”
<i>kaki</i> “crack open, split open”	<i>kavu</i> “leave behind”
<i>kakiaki</i> “crack open, fracture”	<i>kavusi</i> “spit forcefully towards mark, spit out”
<i>kaku</i> “split open”	<i>kee</i> “shatter, fracture, chip”
<i>kakuaku</i> “break into pieces with instrument”	<i>keke</i> “look at”
<i>kapa</i> “eat after fasting”	<i>kepi</i> “fracture, break”
<i>kapara</i> “roast without pan or container”	<i>keravisi</i> “plough under, turn soil over”
<i>kaparu</i> “short of, missing”	<i>kerete</i> “turn around”
<i>kapatau</i> “augment, add to, cap up, supplement”	<i>kerikerisi</i> “evaluate, judge carefully”
<i>kapeaa</i> “flimsy”	<i>kerisi</i> “discern, evaluate, judge talk or situation well”
<i>kapo</i> “join together, clamp together, fasten on coverstrips, put cover strips on house or wall”	<i>ketaka</i> “notch out, make groove”
<i>kapokapo</i> “fasten.cover.strips”	<i>ketu</i> “break.off, break off a piece”
<i>kapokapora</i> “carry between two people’s shoulders”	<i>kevaita</i> “kid, joke, jest”
<i>karakarao</i> “take without permission”	<i>kiki</i> “kick”
<i>karata</i> “deal out, divide up, apportion”	<i>kikira</i> “mix meat and greens”
<i>kareo</i> “penetrate, pierce through”	<i>kikitausi</i> “tear off with teeth”
<i>kari</i> “rip, tear”	<i>kio</i> “attract attention by touching, tapping, or scratching”
<i>karikari</i> “tear, shred”	<i>kipe</i> “cut grass with a sickle”
<i>karo</i> “spoon out a liquid”	<i>kipu</i> “paint, smear on surface”
<i>karokaropo</i> “deal out, distribute, send”	<i>kipukipu</i> “rub on, smear on, massage”
<i>karopo</i> “portion out, divide up”	<i>kiri</i> “rip open, tear open”
<i>karu</i> “open, unlock, untie, unhook”	<i>kiro</i> “write”
<i>karukaru</i> “open”	<i>kirokiro</i> “write”
<i>karutu</i> “divide up, portion out”	<i>kitukitu</i> “scrub clothes”
<i>kasi</i> “burn”	<i>kiu</i> “put in, insert”
<i>kata</i> “exhaust”	<i>koa</i> “bark, skin, peel”
<i>katuara</i> “scour”	<i>koakoa</i> “bark a tree, remove the skin”
<i>kavakavau</i> “reproduce, bear many children”	<i>koara</i> “put together”
<i>kavau</i> “give birth”	<i>koe</i> “spoon out a solid”
	<i>koekoe</i> “spoon out”
	<i>kogo</i> “cut, chop”

koka “agree”
koki “chisel out, chip away”
koko “pour, serve, dish out, portion out”
kokovu “shave head”
koku “break off at base, snap off at base”
kopa “swallow, gulp down, ingest”
kopakopa “swallow quickly, gulp down”
kopikopi “baptize, sprinkle”
korita “carve, carve, dissect, cut up”
koroviri “braid, plait, twist together”
kosikosi “cut off sago palm leaves”
kosipa “???”
kotu “bite”
kotukotu “gnash teeth, grind teeth together”
kou “lay egg, defecate”
koukouo “laugh heartily at”
kove “fell”
kovokovo “fence off, surround”
kovovo “fence, protect”
kukiuki “shake something, rattle something”
kuku “spoonfeed”
kupekupe “fan”
kuri “scrape, scratch, gnashing, gritting”
kurikasi “urge along, prod along”
kurikuri “scratch repeatedly”
kuru “strip off branches”
kururu “crumble something”
kuva “work sorcery, do black magic”
kuvu “fill up, put inside bamboo, clothe”
kuvukuvu “fill up, stamp the ground”
oapa “carry”
oe “vomit, sea sick”
oga “follow behind”
ogo “conceal, hide”
oku “miss, miss out on”
oovaau “track”
opari “lose”
opesi “end, finish”
opi “intercept, interrupt, cut across, shortcut”

orere “look intently, size something up, stare at”
ori “cook”
oriori “scrape, scratch”
oriorisi “suspect, distrust”
oriru “store away, keep, save”
orito “decorate”
orivo “name, label”
oru “trim down, shave away”
otu “sharpen to a point”
ou “get, take, receive”
ove “pour out”
ovuovu “try”
paipai “blocked, obstructed, stymied”
pako “pull down”
paku “net”
pao “open something”
papu “extinguish, put out”
parasire “exchange places”
pare “remove from net”
paripari “split in half”
pariparikou “alternating, exchange repeatedly”
pau “plant, build”
peara “open”
pege “break into pieces”
pegepege “break open repeatedly”
peka “turn over, flip over, reveal, turn page”
peo “push, shove, heave”
peopeo “pump”
pera “shove, kick out of the way, motion aside”
perapera “kick repeatedly aside, shove out of the way”
pero “slice into planks, split apart”
peto “overturn, pour”
petopeto “rock to and fro”
pia “prune, trim off”
pigi “twist, squeeze, wring out”
piiuu “rape”

<i>pikipiki</i> “blind with light, dazzle with light”	<i>rapasi</i> “notch out with axe or knife in tree”
<i>pikopiko</i> “whip”	<i>raravio</i> “loose grip on something”
<i>piku</i> “break, have tip broken off, nod the head”	<i>rata</i> “heat up, sear, singe”
<i>pio</i> “smear white substance from Pioto hot spring on something”	<i>rataa</i> “trick”
<i>piopio</i> “discuss, argue”	<i>ratarataa</i> “trick, deceive”
<i>pire</i> “allow to be harmed”	<i>rau</i> “grab, hug, hold”
<i>piro</i> “mislead, divert, cause someone to err”	<i>ravaa</i> “ready something, prepare, meet”
<i>piruiripa</i> “wash”	<i>ravarava</i> “attempt, try”
<i>piruko</i> “forgive, restore, clean”	<i>raviravisi</i> “dodge, elude, go around, bypass”
<i>pisikui</i> “tie in knot, knot something”	<i>ravoko</i> “hold onto”
<i>pisipisikui</i> “tie in knot, knot something”	<i>ravu</i> “restrain, hold back”
<i>poera</i> “reveal, expose”	<i>ravutu</i> “file something”
<i>poo</i> “test out”	<i>reesi</i> “mark, measure”
<i>pooke</i> “bend taut”	<i>reesireesi</i> “warn”
<i>porapora</i> “space apart”	<i>rego</i> “bend”
<i>porepore</i> “mix, steer”	<i>rekareka</i> “break apart, crack into pieces”
<i>poroporo</i> “break up into pieces”	<i>reko</i> “preserve, repair, correct”
<i>poroporoko</i> “wind along, follow winding path”	<i>rereo</i> “smoke food”
<i>potu</i> “break off”	<i>resiresi</i> “warn”
<i>puaka</i> “???”	<i>retu</i> “cut into sections, section off by cutting”
<i>puepue</i> “weed”	<i>returetu</i> “cut into sections, section off by cutting”
<i>pui</i> “sweep”	<i>rigariga</i> “erase”
<i>puko</i> “reply”	<i>rigato</i> “write, print, type”
<i>puku</i> “swell up, hump”	<i>riri</i> “covet, envy”
<i>pukupukui</i> “mound up, hill up”	<i>roe</i> “place above”
<i>pupiupi</i> “puff, blow”	<i>roi</i> “have sex with, screw, fuck”
<i>pura</i> “make, do, create”	<i>roo</i> “cut”
<i>puraka</i> “spy out, survey”	<i>rooka</i> “portion out, dole out, share”
<i>purepure</i> “fan something”	<i>roorookaa</i> “divide into (two?) parts”
<i>puri</i> “lay on side, press down(?)”	<i>rugurugu</i> “heap together, gather together”
<i>putepute</i> “cut up, chop up”	<i>ruu</i> “cover, enclose, enwrap, envelop”
<i>raerae</i> “test, try out”	<i>ruvaru</i> “medicate, give medicine”
<i>ragi</i> “whip, beat, thrash, whack”	<i>sie</i> “wipe nose, move something away”
<i>ragui</i> “care for animals”	<i>sigi</i> “deflate, reduce size of, release pressure in”
<i>raku</i> “cover over”	<i>sigu</i> “take away and destroy, expel”
<i>rakuraku</i> “cover over”	<i>siguri</i> “miss the mark”
<i>rakurakuo</i> “pile up trees or posts”	<i>sigusigu</i> “shoo away”
<i>rao</i> “drain”	<i>sigusiguva</i> “join together, weld together”

<i>siguva</i> “join together, mix, join after, splice, add onto”	<i>taki</i> “hold, pin, hold steady, hold down”
<i>sii</i> “cut hair, groom hair”	<i>takitaki</i> “fasten together”
<i>sika</i> “separate, divide”	<i>takou</i> “cover up, package, cook in an enclosure”
<i>sikuro</i> “aid child or disabled person to walk, support physically”	<i>tapa</i> “hit, slap, crucify”
<i>siopai</i> “not recognized, be unfamiliar with”	<i>taparako</i> “slap, punch in anger”
<i>siopore</i> “explain to, give counsel to, enlighten, elucidate for”	<i>tapo</i> “fasten together, join together”
<i>siovo</i> “feel, touch, sense”	<i>taporo</i> “conceal talk”
<i>sipa</i> “tear”	<i>tapotapoko</i> “persist, stick to it”
<i>sipo</i> “send”	<i>tarauru</i> “polish”
<i>sipoko</i> “up-end, turn upside down”	<i>tari</i> “surround, encircle”
<i>sira</i> “cover over, weight down”	<i>tariko</i> “encircle, surround”
<i>siresire</i> “make a flanged edge”	<i>tario</i> “chase, pursue”
<i>siruru</i> “give blessing, charm someone, decorate with charms”	<i>tarita</i> “smash, mash, mince, grind, chew”
<i>sisi</i> “pacify, change a person’s mood or attitude”	<i>taritariko</i> “go in circles”
<i>sisiputa</i> “shake head or hands”	<i>taroro</i> “jack up, pry”
<i>sisiputapa</i> “shake”	<i>taruru</i> “flatten out, smash flat”
<i>sisiu</i> “wash, wash off”	<i>tavario</i> “exchange, change places”
<i>situe</i> “look, watch, observe”	<i>tavo</i> “wall up with sago palm leaves”
<i>sivesive</i> “peel, strip off”	<i>tavore</i> “help, forgive”
<i>sora</i> “work sorcery on”	<i>tavuru</i> “cover up”
<i>sosope</i> “standby with disinterest, avoid”	<i>tesiko</i> “polish”
<i>sosovo</i> “taste, sample something, feel something”	<i>toaera</i> “give food as engagement invitation”
<i>taasi</i> “put together, complete something”	<i>toe</i> “cut, chop, slice”
<i>taava</i> “judge”	<i>toetoe</i> “chop or cut repeatedly”
<i>taavo</i> “anticipate, watch with anticipation”	<i>toga</i> “spear, shoot with a spear”
<i>taavore</i> “help, assist”	<i>toitoi</i> “shake, tap, pluck”
<i>taavoto</i> “shoot accurately”	<i>toko</i> “cut, break”
<i>taga</i> “mark off, stake out”	<i>tokotoko</i> “cut, prune”
<i>tage</i> “insert, put inside”	<i>too</i> “punch, hit with hand or fist”
<i>tagi</i> “be responsible for, care for”	<i>tooguu</i> “ring-bark a tree to kill it”
<i>tagoro</i> “secretly do something, conceal from, secretly kill”	<i>toova</i> “bury”
<i>take</i> “build walls”	<i>tosi</i> “cut with blade”
<i>taketake</i> “cause trouble, rape”	<i>tova</i> “bury”
	<i>tovi</i> “kid, jest, belittle”
	<i>tovitovi</i> “restore to value, repair”
	<i>tovo</i> “put, place, position”
	<i>tovotovo</i> “distribute”
	<i>tovutovu</i> “erode away, dig out”
	<i>tukituki</i> “break into pieces”

<i>tupa</i> “close, lock”	<i>vea</i> “lick”
<i>turo</i> “beckon to, go with, carry away”	<i>veavea</i> “lick”
<i>turu</i> “string up, sew up”	<i>veeku</i> “disregard talk”
<i>tutu</i> “carry on the back”	<i>veepo</i> “shove aside, move out of the way”
<i>tuuke</i> “fasten, lock, nail”	<i>veera</i> “line up, form a line”
<i>tuutuuko</i> “repay”	<i>veeto</i> “slash through”
<i>uga</i> “force through”	<i>veeveera</i> “line up, put in rows, form a line”
<i>ugo</i> “fasten, close”	<i>vega</i> “cut one side”
<i>upo</i> “strike, fight, murder”	<i>vera</i> “remove”
<i>ura</i> “chew (betel nut)”	<i>veravera</i> “change, get rid of”
<i>uraura</i> “picture, photograph, film”	<i>verete</i> “move to one side, shove aside”
<i>uriri</i> “frighten, scare”	<i>veriverisi</i> “wander, make the rounds, on the move”
<i>uririo</i> “make tingle, cause prickly sensation”	<i>veruveru</i> “scale fish, make circular marks”
<i>urouro</i> “exemplify, copy, repeat, reiterate”	<i>veta</i> “gnaw on”
<i>ururau</i> “hide from, secret away”	<i>veu</i> “stain”
<i>uto</i> “shield, hide from view”	<i>viaviatarau</i> “clear”
<i>utuvaiko</i> “surpass, pass by, beat”	<i>viei</i> “count, read”
<i>uvere</i> “join together, mix together”	<i>vieviei</i> “enumerate, count”
<i>uvu</i> “hear, smell”	<i>vigu</i> “loosen, slacken”
<i>vaagi</i> “pit cook, steam bake”	<i>viioo</i> “mimic, imitate, copy”
<i>vaagore</i> “persuade, trick”	<i>viivii</i> “strip away”
<i>vaavaavu</i> “embitter”	<i>viko</i> “fold, bend over, roll up”
<i>vaere</i> “hoe, turn over soil”	<i>viou</i> “cut away, clean, sweep”
<i>vagevage</i> “???”	<i>viovioe</i> “exemplify”
<i>vago</i> “slack, loosen, open”	<i>virako</i> “bless, do good supernaturally”
<i>vagogo</i> “scout, spy on, scout out”	<i>virava</i> “???”
<i>vagore</i> “stop”	<i>viriri</i> “twist”
<i>vaisi</i> “name, call, label”	<i>viriviriko</i> “twist something”
<i>vaivaisi</i> “name things”	<i>viroviro</i> “entwine, wrap”
<i>vaki</i> “mistake for something else, fail to recognize”	<i>viruviru</i> “move back and forth, retreat, make go back”
<i>varia</i> “fasten with a noose, trap with a noose”	<i>visi</i> “poke, jab, hit”
<i>varoova</i> “care for, be responsible for”	<i>visirako</i> “whip, strike with object”
<i>varovaro</i> “pursue, follow in pursuit”	<i>visivisi</i> “beat a slit gong, tap”
<i>vatako</i> “mix together, join together”	<i>vitu</i> “excrete, urinate, defecate”
<i>vatatopo</i> “ready, prepare”	<i>vivi</i> “underestimate, be short of, slurp with the mouth”
<i>vatau</i> “hide”	<i>vogo</i> “roll up something flat”
<i>vatavata</i> “go around, by pass”	<i>vogovogo</i> “crumple, wad up, knead”
<i>vatavatau</i> “hide several things”	
<i>vatave</i> “join together, include together with”	

voreri “oscillate, go back and forth, vascilate,
repeat”

vori “cost, pay, buy”

voro “roll up, wind up”

voroo “hunt with dogs”

vovovo “warn, caution”

vuravura “scan, gaze, watch”

vurita “divide exactly in half”

vuroko “stone, throw rocks at, throw stones at”

vuruko “section off”

vuta “taste”

vutuo “carry on shoulders”

vututu “go altogether”

vuvure “blow”

Appendix B

A Finite State Transducer for Rotokas Morphology

B.1 Overview

The author has developed a finite state transducer (FST) for Rotokas morphology using the XFST program (Beesley and Karttunen, 2003). A finite state transducer (FST) is a finite state machine with two tapes: an input tape and an output tape. An FST transduces (i.e., translates) the contents of its input tape to its output tape, by accepting a string on its input tape and generating another string on its output tape. It may do so nondeterministically, potentially producing more than one output for each input string. A transducer may also produce no output for a given input string, in which case it is said to reject the input. We will refer to the input tape as the upper side and the output tape as the lower side. The lower side of the Rotokas FST contains the word forms of the language while the upper side provides one or more morphological analyses of the corresponding word form. A few examples of the analysis provided for unambiguous word forms are provided in (801).

```
(801) fst[1]: up oirato
      oira+Noun+Sg+Masc
      fst[1]: up uusiparoi
      uusi+Verb+Alpha+Cont+3rd+Masc+Sg+Real+Pres
      fst[1]: up upoparevoi
      upo+Verb+Beta+Cont+3rd+Masc+Sg+Real+Pres
```

Using the first example for purposes of illustration, the FST takes the inflected noun *oirato* as input and return a single morphological analysis as output. The morphological analysis identifies the root, *oira*, and provides three tags: +Noun, +Sg and +Masc, which serve to identify the part of speech and its inflection, which in the case of a noun consists of its number and gender.

When the lower side contains more than one morphological analysis, the word form on the upper side can be considered ambiguous. In cases of ambiguity, there will be more than one morphological analysis corresponding to a given word form, as illustrated by the form *riakova*, which could be analyzed either as the singular form of the noun *riako* “woman” or as the classifier *riako* together with the comitative enclitic =*va*.

(802) fst[1]: up riakova
 riako+Cl+Enc
 riako+Noun+Sg+Fem

In the practical orthography, a hyphen marks a clitic boundary and can therefore be used to rule out the analysis where *va* is analyzed as nominal inflection for the singular feminine.

(803) fst[1]: up riako-va
 riako+Cl+Enc

Note, however, that the lack of a hyphen does not rule out an enclitic analysis. This is an intentional design feature of the FST. Since native-speaker consultants do not consistently indicate clitic boundaries, the Rotokas morphology FST would misanalyze words that lack proper formatting of the enclitic. To avoid this type of systematic misreading, the FST is permissive.

The finite state transducer for Rotokas morphology provides a testable model whose coverage can be quantitatively assessed (see Karttunen (2006) for a plea in favor of the formalization and computational implementation of linguistic theory). To assess coverage, the example sentences in the Shoebox dictionary described in Appendix A were tokenized (broken up into individual words) and analyzed by the FST. The results are summarized in Table B.1, where the number of word forms recognized by the FST are tabulated. Two different counts are provided: one for the number of word forms recognized regardless of whether they occur multiple times (tokens) and another for the number of unique word forms recognized (types).

Tokens	Recognized	45,590	96%
	Unrecognized	1593	3%
	Total	47,183	100%
Types	Recognized	14,006	90%
	Unrecognized	1527	9%
	Total	15,533	100%

Table B.1: Coverage for Shoebox Dictionary Example Sentences

B.2 Source Code

The full source code for the Rotokas morphology FST is relatively short and is provided in full below:

```
# -----
# Author: Stuart Robinson
# Date: 5 July 2008
# Desc: Script that creates a finite state transducer for
#       Rotokas morphology
# -----

set flag-is-epsilon ON

source english.char.defs.infile

# -----
# Misc.
# -----

define Particle [ @txt "lex-particles.txt" "+Part" : 0 ] ;

define Sep [ 0:[ {-} | {=} ] ] ;

define Consonant [v|p|t|s|r|k|g|m|n|l|w] ;

define Vowel [a|e|i|o|u] ;

define SyllableLt (Consonant) Vowel ;

define SyllableHvy (Consonant) Vowel Vowel ;

define FootDegen [ SyllableLt ] ;

define FootFull [ SyllableHvy | SyllableLt SyllableLt ] ;

define Foot [ FootDegen | FootFull ] ;

define Flag "@U.CLASS.ALPHA@" | "@U.CLASS.BETA@";
```



```

define MarkFoot FootFull @-> "^[" "[" ... "]" " ^" 2 "]" ||
    .#. Flag _ ?* "+Redup" ;

define Cleanup "+Redup" -> 0;

set flag-is-epsilon off

# -----
# Verb Morphophonemics
# -----

define Rule1 {io} -> {i} || {-} _ {-e} ;

define Rule2 {vio} -> {vi} || {-} _ {-e} ;

define Rule3 {ei} -> {i} || {-} [ {a} | {o} ] _ ;

define Rule4 {e-e} -> {eie} || _ ([ {pa} | {ra} | {i} ] ) .#. ;

define Rule5 {o-e} (->) {o} || [ {-vir} | {-pir} ] _
    [ {pa} | {ra} ({o}) ] .#. ;

define Rule6 {o-e} (->) {o} || {-ira} _
    [ {pa} | {ra} ({o}) ] .#. ;

define Rule7 {o-e} (->) {o} || {-} _
    [ {pa} | {ra} ({o}) ] .#. ;

define Rule8 {o-oro} (->) {ouoro} || _ .#. ;

define Morphophonemics [ Rule1 .o. Rule2 .o. Rule3
    .o. Rule4 .o. Rule5 .o. Rule6
    .o. Rule7 .o. Rule8 ] ;

# -----
# Verb
# -----

```

```

define AVerbStem [ "@U.CLASS.ALPHA@"
                  @txt "lex-alpha-verbs.txt"
                  [ "+Verb" "+Alpha" ] : 0 ] ;

define BVerbStem [ "@U.CLASS.BETA@"
                  @txt "lex-beta-verbs.txt"
                  [ "+Verb" "+Beta" ] : 0 ] ;

define ABVerbStem [ AVerbStem | BVerbStem ] ;

define VerbStemRedup ABVerbStem ( "+Redup" ) ;

regex VerbStemRedup .o. MarkFoot .o. Cleanup;

set retokenize off

compile-replace lower

define VerbStem

define VerbSfxModifier [
    "+Emph" : {irao}
  | "+Emph" : {vasi}
  | "+Delim" : {raga}
] ;

define VerbSfxContinuous [
    "+Cont" : {pa}
] ;

define VerbSfxCompletive [
    [ "+Compl" "+Inanim" ] : {piro}
  | [ "+Compl" "+Anim" ] : {viro}
] ;

define VerbSfxPersonNeutral [
    [ "+3rd" "+PL" ] : {ta}
  | [ "+1st" "+PL" "+Incl" ] : {vio}
  | [ "+3rd" "+Dl" "+Masc" ] : {si}
  | [ "+3rd" "+Dl" "+Fem" ] : {ere}
] ;

```

```

| [ "+1st" "+Dl" ] : {ve}
| [ "+1st" "+Excl" "+Pl" ] : {io}
| [ "+1st" "+Incl" "+Pl" ] : {vi}
] ;

```

```

define VerbSfxPersonA [ "@U.CLASS.ALPHA@" [
    [ "+3rd" "+Masc" "+Sg" ] : {ro}
| [ "+3rd" "+Pl" ] : {a}
| [ "+1st" "+Sg" ] : {ra}
| [ "+2nd" "+Sg" ] : {u}
| [ "+3rd" "+Sg" "+Fem" ] : {o} ]
] ;

```

```

define VerbSfxPersonB [ "@U.CLASS.BETA@" [
    [ "+3rd" "+Masc" "+Sg" ] : {re}
| [ "+3rd" "+Sg" "+Fem" ] : {e}
| [ "+3rd" "+Pl" ] : {i}
| [ "+1st" "+Sg" ] : {a}
| [ "+2nd" "+Sg" ] : {ri} ]
] ;

```

```

define VerbSfxPerson [
    VerbSfxPersonNeutral
| VerbSfxPersonA
| VerbSfxPersonB
] ;

```

```

define VerbSfxIrr [
    [ "+Irr" "+DF" "+1st" "+Dl" ] : {vearea}
| [ "+Irr" "+DF" ] : {verea}
| [ "+Irr" "+Dl" "+Anim" "+Hab" "+1st" ] : {veaira}
| [ "+Irr" "+Hab" "+Anim" ] : {aira}
| [ "+Irr" "+Hab" "+Anim" ] : {veira}
| [ "+Irr" "+Hab" "+Inanim" ] : {peira}
| [ "+Irr" "+NF" "+1st" "+Dl" ] : {veare}
| [ "+Irr" "+NF" "+Inanim" ] : {pere}
| [ "+Irr" "+NF" "+Anim" ] : {vere}
| [ "+Irr" "+Sub" "+Inanim" ] : {pe}
| [ "+Irr" "+Sub" "+Inanim" ] : {pi}
| [ "+Irr" "+Sub" "+Anim" ] : {ve}
] ;

```

```

] ;

define VerbSfxRealA [ "@U.CLASS.ALPHA@" [
  [ "+Real" "+DP" ] : {era}
  | [ "+Real" "+IP" ] : {e}
  | [ "+Real" "+Pres" ] : {ei}
  | [ "+Real" "+Pres" ] : {i}
  | [ "+Real" "+RP" ] : {epa}
  | [ "+Real" "+NP" ] : {erao} ]
] ;

define VerbSfxRealB [ "@U.CLASS.BETA@" [
  [ "+Real" "+IP" ] : {vo}
  | [ "+Real" "+NP" ] : {vorao}
  | [ "+Real" "+DP" ] : {vora}
  | [ "+Real" "+Pres" ] : {voi}
  | [ "+Real" "+RP" ] : {va} ]
  | [ "+???" ] : {voiva}
] ;

define VerbSfxReal [ VerbSfxRealA | VerbSfxRealB ] ;

define VerbSfxTenseMood [ VerbSfxIrr | VerbSfxReal ] ;

define VerbSfxDep [
  [ [ "+Dl" "+Sub" ] : {pe} # What's going on here?
  | [ "+Dep" "+Sim" ] : {oro}
  | [ "+Dep" "+Dis" ] : {arapa}
  | [ "+Dep" "+Purp" ] : {sia} ]
] ;

define VerbSfxIndep [ ( 0:{-} VerbSfxPerson )
  ( 0:{-} VerbSfxCompletive )
  ( 0:{-} VerbSfxTenseMood ) ] ;

define VerbSfxDepIndep [ VerbSfxDep | VerbSfxIndep ] ;

define VBase [ VerbStem
  ( 0:{-} VerbSfxCompletive )
  ( 0:{-} VerbSfxModifier )

```

```

( 0:{-} VerbsSfxContinuous )
( 0:{-} VerbsSfxDepIndep   ) ] ;

set flag-is-epsilon on

define VerbsHyphens [ VBase .o. Morphophonemics ] ;

set flag-is-epsilon off

define Verbs [ VerbsHyphens .o. [ {-} -> 0 || ?* _ ?* ] ] ;

# -----
# Noun
# -----

define NounGeneric [ @txt "lex-nouns.txt" "+Noun" : 0 ] ;

define NounRoot1 [ @txt "lex-nouns-1.txt" "+Noun" : 0 ] ;

define NounRoot1M [ @txt "lex-nouns-1-m.txt" "+Noun" : 0 ] ;

define NounRoot1F [ @txt "lex-nouns-1-f.txt" "+Noun" : 0 ] ;

define NounRoot2 [ @txt "lex-nouns-2.txt" "+Noun" : 0 ] ;

define NounRoot3 [ @txt "lex-nouns-3.txt" "+Noun" : 0 ] ;

define NounRoot4 [ @txt "lex-nouns-4.txt" "+Noun" : 0 ] ;

define NounRoot5 [ @txt "lex-nouns-5.txt" "+Noun" : 0 ] ;

define ProperN [ @txt "lex-proper-nouns.txt" "+Prop" : 0 ] ;

define Class [ @txt "lex-classifiers.txt" "+Class" : 0 ] ;

define BarePro [ @txt "lex-pronouns.txt" "+Pro" : 0 ] ;

define ReflPfx [ "@U.CLASS.REFL@" 0 : {ora} (Sep) ] ;

```

```

define ReflTag [ "@U.CLASS.REFL@" "+RR" : 0 ] ;

define SpecPfx [ "@U.CLASS.SPEC@" 0 : [ {o} | {vo} ] ] ;

define SpecTag [ "@U.CLASS.SPEC@" "+Spec" : 0 ] ;

define NPfx [ ReflPfx | SpecPfx ] ;

define NumMasc [ [ "+Sg" "+Masc" ] : {to} ({a})
                | [ "+Dl" "+Masc" ] : {toarei}
                | [ "+Pl" "+Masc" ] : {irara} ] ;

define NumFem [ [ "+Sg" "+Fem" ] : {va}
                | [ "+Dl" "+Fem" ] : {rirei} ] ;

define NumGenCl1a [ NumMasc | NumFem ] ;

define NumGenCl1b [ [ "+Sg" "+Masc" ] : {to} ({a})
                  | [ "+Dl" "+Masc" ] : {toarei}
                  | [ "+Pl" "+Masc" ] : {irara}
                  | [ "+Sg" "+Fem" ] : {va}
                  | [ "+Dl" "+Fem" ] : {rirei}
                  | [ "+Pl"           ] : {vure} ] ;

define NumGenCl1c [ [ "+Sg" "+Masc" ] : {to} ({a})
                  | [ "+Dl" "+Masc" ] : {toarei}
                  | [ "+Pl" "+Masc" ] : {irara}
                  | [ "+Sg" "+Fem" ] : {va}
                  | [ "+Dl" "+Fem" ] : {rirei}
                  | [ "+Pl"           ] : {ra} ] ;

define NumGenCl2 [ [ "+Sg" "+Masc" ] : {to} ({a})
                  | [ "+Dl" "+Masc" ] : {toarei}
                  | [ "+Pl" "+Masc" ] : {irara}
                  | [ "+Sg" "+Fem" ] : {va}
                  | [ "+Dl" "+Fem" ] : {rirei} ] ;

define NumGenCl3 [ [ "+Sg" "+Neuter" ] : {a}
                  | [ "+Dl" "+Neuter" ] : ({a}) {rei}
                  | [ "+Pl" "+Neuter" ] : {ara} ] ;

```

```

define NumGenCl4 [ [ "+Sg" "+Masc" ] : {to} ({a})
                  | [ "+Dl" "+Masc" ] : {toarei}
                  | [ "+Pl"           ] : {ara} ] ;

define NumGenCl5 [ [ "+Sg" "+Fem" ] : {va}
                  | [ "+Dl" "+Fem" ] : {rirei}
                  | [ "+Pl"           ] : {ara} ] ;

define DerivNRoot [ VerbStem | ProperN ] ( 0 : {pa} ) ;

define DerivNStem DerivNRoot ( NumGenCl1a | NumGenCl3 ) ;

define NounStem [ NounGeneric
                  | DerivNStem
                  | NounRoot1 ( NumGenCl1a | NumGenCl3 )
                  | NounRoot1M (NumMasc)
                  | NounRoot1F (NumFem)
                  | {kakae} (NumGenCl1b)
                  | [ {oira} | {riako} ] (NumGenCl1c)
                  | NounRoot2 (NumGenCl2)
                  | NounRoot3 (NumGenCl3)
                  | NounRoot4 (NumGenCl4)
                  | NounRoot5 (NumGenCl5) ] ;

define ClassSfxNum [ [ "+Dl" ] : {rei}
                    | [ "+Pl" ] : {ro} ] ;

define ClassStem [ Class (ClassSfxNum) ] ;

define NSfxPoss [ "+Poss" : {aro} ] ;

define NSfxDim [ "+Dim" : {vi} ] ;

define NSfxAlt [ "+Alt" : {vu} ] ;

define NSfxIndef [ "+Indef" : {vai} ] ;

define NSfxTopic [ "+Topic" : {a} ] ;

```

```

define NSfxNonGender (NSfxPoss) (NSfxDim) (NSfxAlt) (NSfxIndef) ;

define NSfx1 [ {o} | NSfxNonGender ] ;

define NSfx2 [ {o} | ReflTag | NSfxNonGender SpecTag ] ;

define Nominal [ NounStem | DerivNStem | ClassStem ] ;

define NounBase [      Nominal (NSfx1)
                  | NPfx Nominal NSfx2 ] ;

define ClassBase [ Class (ClassSfxNum) (NSfxPoss) ] ;

define RelMarker [ "+Enc" : {ia}
                  | "+Enc" : {re}
                  | "+Enc" : {pa}
                  | "+Enc" : {va} ] ;

define Num [ %0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 ]+
           "+Num" : 0 ;

define NounEnclitic (Sep) [ NSfxTopic | RelMarker ] ;

define Nouns [ [ Num | NounBase ] (NounEnclitic) ] ;

# -----
# Pronouns
# -----

define SubjSfx [ "+Subj" : {pe} ] ;

define ProSfx [ "+???" : {i}
               | ReflTag
               | NSfxIndef
               | SubjSfx | NSfxPoss | (NSfxDim) (NSfxAlt) ] ;

define ProBase [ (ReflPfx) BarePro (ProSfx) ] ;

define Pronouns [ ( Propfx (Sep) ) ProBase (NounEnclitic) ] ;

```



```

# -----
# Adverb
# -----

define AdvStem [ @txt "lex-adverbs.txt" "+Adv" : 0 ] ;

define AdvSuffixDeriv [ "+Deriv" : {pa} ] ;

define AdvSuffix [ "+Adv" : [ {vira} | {visivi} ] ] ;

define AdvBase [ NounStem | VerbStem ] ;

define DerivAdvs [ AdvBase (AdvSuffixDeriv) AdvSuffix ] ;

define Adverbs [ AdvStem | DerivAdvs ] ;

# -----
# Create a single FST that is case-insensitive
# -----

define Word [ Particle | Verbs | Nouns | Adverbs | Pronouns ] ;

regex [ Word .o. [ $(Uppcase) ]* ] ;

save stack rotokas-morphology.fst ;

```

Appendix C

Sample Texts

This appendix provides two sample texts in Rotokas. These are retellings of a traditional folk tale describing the origins of the red leaves of the *Terminalia catappa* tree, a large tropical tree in the Family Combretaceae. This tree is known as “Talis” or “Talisa” in Tok Pisin, and goes by a variety of names in English: Java almond, Indian almond, Bengal almond, Singapore almond, Malabar almond, Tropical almond, Sea almond, or Umbrella tree. Although the two tellings of the story differ in various details, they share the same basic plot, which concerns a sacred taro that is mistakenly harvested by two girls. After being castigated by their parents, the girls are so filled with shame and sorrow that they leave home for the coast, where they are eaten by a shark and their blood permanently stains the tree.

C.1 Matevu, Version 1

This version of the story was published in Rotokas in Firchow (1974a). A synopsis of the story is provided in English, but without line-by-line glossing or translation. (No author information is provided but David Akoitai is a likely source, given that he served as a consultant and co-author for a great deal of Firchow’s work on Rotokas—cf. Firchow and Akoitai (1974).) During my first fieldwork trip to Bougainville, native speaker consultants translated this story into Tok Pisin. It was then entered into a Toolbox database, given interlinear glossing, and translated into English.

Firchow (1974a:109) claims that this folk tale and the associated song originate from the neighboring Austronesian language, Teop. Firchow (1974a) does not provide the basis for this claim, and admits parenthetically that the meaning of the lyrics is unknown: “Only the names of the taros, *Matevu* and *Siraveru* are recognized in the words of this song. The other words remain unknown.” Although consultation with Ulrike Mosel (a Teop specialist) and Ruth Spriggs (a native speaker of the language) has confirmed that the song is known in the Teop region, they deny that the lyrics are in Teop. While the story itself is in Rotokas, the provenience of the associated song is therefore an open question. There is evidence of a good amount of lexical

borrowing between Rotokas and Teop and in some cases the direction of borrowing appears to be into Rotokas from Teop. For example, the Rotokas word *okaoto* “taro” appears to be a borrowing of the Teop word *kaoto* “taro” along with its associated article *o* (Schwartz and Mosel, 2006).¹

- (1) *aue vao-ia siposipo-a o-avuka-arei-vu iava*
 CONN PRO.DEM.PROX.3.SG.N-LOC story-SG.N SPEC-old.person-DL.N-ALT ABL
 This is a story about a married couple.
 Dispela stori em bilong tupela marit.
- (2) *oire vo-avuka-arei aiterei-ia oisioa tou-pa-si*
 okay SING-old.person-DL.N PRO.PER.3.DL.M-LOC always be-CONT-3DL.M
o-urui-vu-ia
 SPEC-village-ALT-LOC
 Okay, these two, they were always in one village.
 Dispela tupela marit i save stap long wanpela ples.
- (3) *uva voa tou-pa-oro o-voki-vu-ia ogoe-a-epa*
 so here be-CONT-DEP.SIM SPEC-day-ALT-LOC hungry-3PL_α-RP_α
 They were hungry in this place one day.
 Na taim ol i stap long dispela ples wanpela de ol i bin hangre.
- (4) *uva ovii-rirei oaesi aru-pa-si-va*
 so child-DL.F PRO.POSS.3.DL.M order-CONT-3DL.M-RP_β
 The two of them ordered their two (female) children.
 Na tupela i bin salim tupela pikinini meri bilong tupela.
- (5) *oisio pura-si-epa*
 like say-3DL.M-RP_α
 The two of them said,
 Tupela i tok olsem,
- (6) *ava-ere opo kuio tate-sia*
 go-2DL.F taro round extract-DEP.SEQ
 You two go dig up a taro plant.
 Yutupela go kamautim wanpela taro.
- (7) *vo-kuio vaisi-aro Vatevu*
 SING-round name-POSS name
 The name of this taro plant is Matevu.
 Name bilong dispela taro, Matevu.

¹Shoffner (1976:291) also records the Teop word *kaoto* for *Terminalia catappa*.

- (8) *uva o-kuio-rei-ia vo-taru vearovira va*
 so SPEC-round-DL.CL-LOC SING-bone good PPRO.3.SG.N
rovo-pa-a-voi
 start-CONT-1SG_β-PRES_β
 ???
 ???
- (9) *vairei tavi-si-va*
 PPRO.2/3.DL.F tell-3DL.M-RP_β
 The two of them told the two of them,
 Tupela i tokim tupela,
- (10) *ava-ere opo-a-vai ou-sia vegei-pa*
 go-2DL.F taro-SG.N-INDEF get-DEP.SEQ PPRO.1.DL.EXCL-BEN
 The two of you go get some taro for us.
 “Yutupela go kisim wanpela taro bilong mitupela.”
- (11) *uva oavu oa vatatopo-pa-ere-vere*
 so another RPRO.3.SG.N ready-CONT-2DL.F-NF
 And look out for something else.
 Na wanpela samting bai yutupela i lukaut long em.
- (12) *teapi Vatevu kuio ou-ere-vere*
 lest name round get-2DL.F-NF
 You can’t get the Matevu taro.
 No ken kisim taro Matevu.
- (13) *ari Siraveru kuio ou-ere-vere*
 but name round get-2DL.F-NF
 But you two will get Siraveru.
 Tasol yutupela kisim Siraveru.
- (14) *oire vaiterei reo-aro uvu-ere-va oa iava*
 okay PPRO.2.DL.M talk-POSS hear-3DL.F-RP_β RPRO.3.SG.N ABL
viku-ere-va
 go.to.garden-3DL.F-RP_β
 Okay, the two of them heard his talk and went to the garden.
 Orait, tupela i bin harim tok bilong tupela na tupela i go long gaden.
- (15) *uva ava-ere-i-epa*
 so go-3DL.F-EPEN-RP_α
 The two of them went.
 Na tupela i bin go.

- (16) *uva ora-reo-pa-ere-i-epa*
 so RR-talk-CONT-3DL.F-EPEN-RP_α
 And the two of them said to one another,
 Na tupela i bin toktok.
- (17) *vo-kuio-re vegei aru-si-vo*
 SING-round-ALL PPRO.1.DL.EXCL order-3DL.M-IP_β
 The two of them told us about the taro.
 Tupela i salim mitupela long kisim dispela taro.
- (18) *uva viapau oisio vo-kuio ou-ere-va Siraveru kuio*
 so NEG like SING-round get-3DL.F-RP_β name round
 And they didn't get this taro, the Siraveru taro,
 Na tupela i no bin kisim dispela taro Siraveru,
- (19) *ari Vatevu kuio ou-ere-va*
 but name round get-3DL.F-RP_β
 but the two of them got the Matevu taro.
 tasol tupela i kisim Matevu,
- (20) *vo-kuio oa-pa vairei vatatopo-pie-raga-si-va*
 SING-round RPRO.3.SG.N-BEN PPRO.2/3.DL.F ready-CAUS-only-3DL.M-RP_β
 the taro about which they [the parents] told them [the daughters] about.
 dispela taro we tupela i bin tok lukaut nating long tupela.
- (21) *teapi Vatevu kuio ou-pa-ere-vere*
 lest name round get-CONT-3DL.F-NF
 You two musn't get the Matevu taro.
 Yutupela no ken kisim Matevu,
- (22) *ari Siraveru kuio ou-ere-ve*
 but name round get-3DL.F-SUB
 but you two should get the Siraveru taro.
 tasol bai yutupela kisim Siraveru."
- (23) *ovoi-ei*
 finish-PRES_α
 Done.
 Em inap.
- (24) *voa-vi-va kare-ere-i-epa vo-kuio-va ato-ia-re*
 here-DIM-ABL return-3DL.F-EPEN-RP_α SING-round-ABL harvest-LOC-ALL
 From here the two of them return with the taro to the village.

Long dispela taim tasol tupela i bin karim dispela taro i go wantaim long ples.²

- (25) *uva vo-kuio-va koata-ere-i-epa*
so SING-round-ABL enter-3DL.F-EPEN-RP_α
And the two of them went inside with the taro.
Na tupela i bin go insait wantaim.
- (26) *oire aite-toarei vo-kuio evei-si-va Vatevu kuio*
okay father- SING-round recognize-3DL.M-RP_β name round
Okay, the two parents recognized the taro, the Matevu taro.
Orait, tupela papa mama i bin luksave long dispela taro Matevu.
- (27) *uva oisio pura-si-epa*
so like say-3DL.M-RP_α
And they said,
Na tupela i bin tok olsem,
- (28) *viapau oisio vo-kuio-re vei tavi-ve-vo*
NEG like SING-round-ALL PPRO.2.DL tell-1DL-IP_β
We didn't tell you two about this taro.
Mitupela i no bin tokim yutupela long dispela taro.
- (29) *ari Siraveru kuio-re vei tavi-ve-vo*
but name round-ALL PPRO.2.DL tell-1DL-IP_β
No, we told you two about the Siraveru taro.
Tasol mitupela tokim yutupela long Siraveru.
- (30) *ari vuri-a pura-ere*
but wrong-SG.N make-2DL.F
But you two did a bad thing.
Tasol yutpela i wokim rong.
- (31) *uva vairei kopii-pie-si-va*
so PPRO.2/3.DL.F die-CAUS-3DL.M-RP_β
And they killed the two of them.
???³

²In the original, *vokuiova* is followed by *vokuio*. This inexplicable repetition is treated as a typesetting error here.

³Something is missing in this sentence, since it is clear from the rest of the story that the parents did not in fact kill the children.

- (32) *oire voa-va uusi-a-epa*
 okay here-ABL sleep-3PL_α-RP_α
 Okay, they slept.
 Orait, ol i slip.
- (33) *uva rirovira sirao-pa-ere-i-epa*
 so big-time pity-CONT-3DL.F-EPEN-RP_α
 The two of them were very sorry.
 Na tupela i bin sori tru.
- (34) *apeisi-vai pie-ve*
 how-INDEF do-1DL
 What do we do?
 Bai mitupela mekim wanem?
- (35) *uva vegei-vi-pa riro-a vate-si sirao-a Vatevu kuio-pa*
 so PPRO.1.DL.EXCL-DIM-BEN big-SG.N give-3DL.M pity-SG.N name round-BEN
vegei upo-pa-oro
 PPRO.1.DL.EXCL hit-CONT-DEP.SIM
 The two of them will make us very sorry for the Matevu taro by beating us.
 Na tupela i givim bikpela sori long mitupela long taro Matevu.
- (36) *viku-si-va vairei arova voo uvare avi-epa*
 go.to.garden-3DL.M-RP_β PPRO.2/3.DL.F without here because sunset-RP_α
 The two of them went to the garden without them at dawn.
 Na tupela i lusim tupela i go long gaden taim i tulait.
- (37) *oa iava sirao-pa-oro tou-pa-ere-ve arakasi-aro erava-ia*
 RPRO.3.SG.N ABL pity-CONT-DEP.SIM be-CONT-3DL.F-SUB deserted-POSS song-LOC
koova-pa-oro vo-kuio-rei va vaisi-pa-oro opo
 sing-CONT-DEP.SIM SING-round-DL.CL PPRO.3.SG.N call-CONT-DEP.SIM taro
kuio-rei
 round-DL.CL
 ???
 Long dispela tupela i bin stap na sori long ples
- (38) *oarea-ia era-pa-oro oisio pura-ere-i-epa*
 RPRO.3.DL.N-LOC sing-CONT-DEP.SIM like say-3DL.F-3PL_β-RP_α
 Singing about it, they said,
 Tupela i bin singsing long dispela tupela na tok olsem,

- (39) *Vatevu kuio-pa vei upo-re aite waiterei ora aako*
 name round-BEN PRO.PER.2.DL hit-3SG.M_β father PRO.PER.2.DL.M and mother
 Father will hit you for the Matevu taro, father and mother.
 Long Matevu papa i paitim mitupela wantaim mama.
- (40) *ari aue Siraveru kuio ou-ve-vo-ri oa-re vegei*
 but CONN name round get-1DL-IP_β-2SG_β RPRO.3.SG.N-ALL PPRO.1.DL.EXCL
tavi-raga-re-vo
 tell-only-3SG.M_β-IP_β
 But we should have gotten the Siraveru taro which they told us about.
 Tasol mitupela i mas bin kisim Siraveru em i bin tokim mitupela long em.⁴
- (41) *uva vare-i-ia koova-pa-oro korovo pura-ere-va*
 so DEM.MED.DL.N-LOC sing-CONT-DEP.SIM oil make-3DL.F-RP_β
 And they made oil singing about the two of them.
 Tupela i singsing long tupela singsing na mekim oil bilong kokonas.
- (42) *reasi-pa-ei ra voo raga tou-pa-oro*
 be.disinclined-CONT-PRES_α COMP here only be-CONT-DEP.SIM
ora-sirao-pie-pa-ve
 RR-pity-CAUS-CONT-1DL
 It's no good for us to be here making each other feel bad.
 I no gutpela long mitupela stap tasol long hia na mekim mitupela yet sori.
- (43) *ari vearo-pa-ei ra tauai-vai-re ava-ve*
 but good-CONT-PRES_α COMP distant-INDEF-ALL go-1DL
 And it is good if we go far away.
 tasol em i gutpela sapos mitupela i go longwe.
- (44) *oire korovo ovi pura-ere-va va ovoi-ere-voi-va*
 okay oil liquid make-3DL.F-RP_β PPRO.3.SG.N finish-3DL.F-PRES_β-RP_β
orapura-ere-i-epa
 appear-3DL.F-3PL_β-RP_α
 The two of them made coconut oil and finished putting it on each other.
 Orait, tupela i bin wokim oil bilong kokonas na taim tupela i redim pinis, tupela i bin
 putim long skin bilong tupela yet.
- (45) *uva oravasie-ere-i-epa oira-ia era-pa-oro erava*
 so leave-3DL.F-EPEN-RP_α PPRO.3.SG.F-LOC sing-CONT-DEP.SIM song
 And the two of them left singing a song.
 Na tupela i stat wakabaut na singim dispela singsing.

⁴The final suffix *-ri* on the verb *ou* is unrecognized.

- (46) *uva uva-vu-va avu-to vairei uvu-re-va osia*
 so so-ALT-ABL grandparent-SG.M PPRO.2/3.DL.F hear-3SG.M_β-RP_β as
oira-ia era-pa-ere-i-epa
 PPRO.3.SG.F-LOC sing-CONT-3DL.F-EPEN-RP_α
 And their grandfather heard the two of them there as they sang it (the song).
 Long narapela hap bubu man i bin harim tupela.⁵
- (47) *era-pa-oro ava-pa-ere-i-epa*
 sing-CONT-DEP.SIM go-CONT-3DL.F-EPEN-RP_α
 The two of them sang as they went.
 Tupela i singsing i go.
- (48) *uva vairei iare vusi-re-va avu-rirei oisio*
 so PPRO.2/3.DL.F towards erupt-3SG.M_β-RP_β grandchild-DL.F like
 He appeared to his two granddaughters,
 Na em i bin go autsait long tupela bubu meri bilong em,
- (49) *ovu iare ava-pa-ere-i-ei*
 where towards go-CONT-2DL.F-EPEN-PRES_α
 Where are you two of you going?
 Yutupela i go we?
- (50) *ovuvaia*
 No!
 Nowhere.
 Nogat hap.
- (51) *ari vegei upo-si-vo aite vaio*
 but PPRO.1.DL.EXCL hit-3DL.M-IP_β father DL.ANIM
 But our parents hit us.
 Tasol tupela papa i paitim mitupela.
- (52) *uva riro-vira sirao-pa-oro ava-pa-ve-i-ei*
 so big-ADV pity-CONT-DEP.SIM go-CONT-1DL-EPEN-PRES_α
 We are going feeling very sorry.
 Na mitupela i sori tru na mitupela i go.
- (53) *uva sirao isi raga uuturo-epa vairei sirova*
 so pity round only follow-3SG.M_α-RP_α PPRO.2/3.DL.F behind
 And this sorry is following behind us.
 Na long dispela bikpela sori tasol na em i bin bihainim tupela i go.

⁵In the original, the verb form provided was *uvareva*; however, the verb root *uva* does not exist. This is treated as a typo and corrected here.

- (54) *oire voka kata pura-re-va*
 okay walk exhaust make-3SG.M_β-RP_β
 He made an exhausting walk.
 Orait, em bin wakabaut na em i bin skin i dai.⁶
- (55) *uva vairei sirova uutupa-ro-epa*
 so PPRO.2/3.DL.F behind follow-CONT-3SG.M_α-RP_α
 And he followed behind them.
 Na em i bin bihainim tupela i go.⁷
- (56) *viapau oisio uvui-pa-ro-epa oisio ra voka-pa-re-ve*
 NEG like be.able-CONT-3SG.M_α-RP_α like COMP walk-CONT-3SG.M_β-SUB
 He wasn't able to walk.
 Nogat em i no bin inap olsem bai em i wakabaut.
- (57) *oa iava rera kapokaporo-ere-va voa raiva-ro*
 RPRO.3.SG.N ABL PPRO.3.SG.M grip-3DL.F-RP_β here road-PL.CL
 Because of this they held him on the road.
 Long dispela tupela i bin holim em long saitsait na go long rot.
- (58) *uva avaka-va iare vusi-ere-va rera-va oira raga-ia*
 so ocean-SG.F towards erupt-3DL.F-RP_β PPRO.3.SG.M-ABL PPRO.3.SG.F only-LOC
kova-pa-oro
 grow-CONT-DEP.SIM
 The two of them arrived at the ocean with him singing just this
 Na tupela i kamap long nambis wantaim em, na singim dispela singsing.
- (59) *osia rera-vi kopii-ro-epa vo-rogara ua*
 as PPRO.3.SG.M-DIM die-3SG.M_α-RP_α SING-sand CLASS
 as the poor one died on the beach.
 long taim trangu i bin dai long arere long nambis.
- (60) *uva rera-va ava-pa-ere-i-epa*
 so PPRO.3.SG.M-ABL go-CONT-3DL.F-EPEN-RP_α
 The two of them went with him,
 Na tupela i bin go wantaim daiman karim em tasol.
- (61) *vo-kopii raga-ia kae-raga-pa-oro ava-pa-ere-i-epa*
 SING-die only-LOC carry-only-CONT-DEP.SIM go-CONT-3DL.F-EPEN-RP_α
 they went just carrying the dead man.
 None

⁶The form *kata* appears to function as a noun or classifier here, but this usage is unattested elsewhere.

⁷The verb root *uutu* is spelled as *utu* in the original; however, its initial vowel is long.

- (62) *uva reasi-oro uva-vu rera tova-ere-va vairei raga*
 so be.disinclined-DEP.SIM so-ALT PPRO.3.SG.M bury-3DL.F-RP_β PPRO.2/3.DL.F only
ava-oro
 go-DEP.SIM
 And the two of them buried him and went.
 Na tupela i bin les na planim em long wanpela hap na tupela tasol i bin go.
- (63) *uva gau-pa-oro ava-pa-ere-i-epa*
 so cry-CONT-DEP.SIM go-CONT-3DL.F-EPEN-RP_α
 And they cried as they went.
 Na tupela i krai i go.
- (64) *aako vaio-vi vegei viki-si-vo voraro-re*
 mother DL.ANIM-DIM PPRO.1.DL.EXCL throw.away-3DL.M-IP_β around-ALL
 Our parents threw us away around here.
 Tupela mama ol i troim mitupela nabaut long hia.
- (65) *ovoi-ei*
 finish-PRES_α
 Done.
 Em inap.
- (66) *oire voa-va keke-ere-va uva oisioa vuri-to tou-pa-re-ve*
 okay here-ABL look.at-3DL.F-RP_β so always bad-SG.M be-CONT-3SG.M_β-SUB
roo ira oisioa oira aio-pa-ro
 DEM.PROX.SG.M RPRO.3.SG.M always PPRO.3.SG.F eat-CONT-3SG.M_α
 Okay, from there the two of them looked and a bad man who always ate people was
 there.
 Orait, tupela i bin lukim hap dispela man nogut i bin save stap em i save kaikai ol man.⁸
- (67) *uva voa-va vo-pouka keke-ere-va evao pouka va vaisi-aro*
 so here-ABL SING-lean look.at-3DL.F-RP_β tree lean PPRO.3.SG.N name-POSS
okaoto pouka
 talis lean
 And then the two of them saw a bent-over tree, the name of which was ‘talisa’.
 Na bihain tupela lukim dispela diwai em i krungut, nem bilong dispela em talisia.
- (68) *oire vo-rao-ia ava-ere-i-epa*
 okay SING-branch-LOC go-3DL.F-EPEN-RP_α
 Okay, the went on this branch.
 Orait, tupela i go antap long dispela han diwai.

⁸The original text contains a typo: *voavo* instead of *voava*.

- (69) *vo-rao-ia* *ava-ere-i-epa* *pouka rao*
 SING-branch-LOC go-3DL.F-EPEN-RP_α lean branch
 They went on this branch, the leaning branch.
 Tupela i go antap long dispela han diwai krungut.
- (70) *uva voa-va* *era-pa-oro* *vo-rao* *ivara-ia tou-pa-ere-va*
 so here-ABL sing-CONT-DEP.SIM SING-branch on-LOC be-CONT-3DL.F-RP_β
 And they were on top of the branch singing.
 Na tupela i singsing taim tupela i stap antap long dispela han.
- (71) *uva urio-ro-epa* *rera* *roo* *ira* *oisioa oirara*
 so come-3SG.M_α-RP_α PPRO.3.SG.M DEM.PROX.SG.M RPRO.3.SG.M always people
aio-pa-re-ve *rera* *vaisi-aro* *vakuvaku*
 eat-CONT-3SG.M_β-SUB PPRO.3.SG.M name-POSS scoff
 And the one who came, the one who was always eating people, his name was Vakuvaku.
 Na dispela man ya i bin kam em i save kaikai ol man.⁹
- (72) *rera* *vaisi-aro* *vakuvaku tugarato*
 PPRO.3.SG.M name-POSS scoff spirit
 The spirit, his name was Vakuvaku.
 Nem bilong masalai, em Vakuvaku.
- (73) *uva rera* *tue-ere-va* *roo-ia* *ira*
 so PPRO.3.SG.M wait-3DL.F-RP_β DEM.PROX.SG.M-LOC RPRO.3.SG.M
urio-ro-ei
 come-3SG.M_α-PRES_α
 The two of them waited for him to come.
 Na tupela i lukim em, em i kam nau.
- (74) *uva orapiopio-pa-ere-i-epa*
 so argue-CONT-3DL.F-EPEN-RP_α
 And the two of them talked,
 Na tupela i wok long toktok long tupela yet.
- (75) *tepa vii* *ira* *rovo-u*
 Hey! PPRO.2.SG RPRO.3.SG.M start-2SG_α
 Hey, you go ahead first.
 Goan yu go pas nau.

⁹The word *vakuvaku* also means ‘cynic’ or ‘skeptic’. It is unclear whether the two meanings are somehow related.

- (76) *uva oisio pura-pa-o-epa*
 so like say-CONT-3SG.F_α-RP_α
 And she said,
 Na wanpela meri i tok olsem,
- (77) *oari oisio vii*
 DEM.DIST.SG.F like PPRO.2.SG
 What about you?
 Na olsem wanem yu.
- (78) *oire iria-vu topogovira oraviki-o-epa*
 okay RPRO.3.SG.F-ALT recklessly jump-3SG.F_α-RP_α
 Okay, one recklessly jumped.
 Orait, wanpela i bin kalap i go stret.
- (79) *teapi vorevira sirao-ve aite vaio-re ra vorevira vore-ve*
 lest backward pity-1DL father DL.ANIM-ALL COMP backward return-1DL
 Lest we feel sorrow for our parents and go back.
 Nogut mitupela sori bek long tupela papa na bai mitupela i go bek.
- (80) *uva oira kopa-oro revasiva oe-re-va vorevira okaoto*
 so PPRO.3.SG.F swallow-DEP.SIM blood vomit-3SG.M_β-RP_β backward talis
kavusi-sia
 spit.out-DEP.SEQ
 And when he [the shark] swallowed the blood, he threw it back up on the talisa tree.
 Na taim em i daunim meri, em trautim blut i spet i go bek long talisia.
- (81) *uva ovoio-pa-va uutu-o-epa*
 so be.last-DERIV-SG.F follow-3SG.F_α-RP_α
 And the last woman followed.
 Na laspela meri i bin go bihain.
- (82) *uva oisio ita pie-re-va oira kopa-oro rera*
 so like again do-3SG.M_β-RP_β PPRO.3.SG.F swallow-DEP.SIM PPRO.3.SG.M
kavusi-re-va vao oa iava
 spit.out-3SG.M_β-RP_β DEM.PROX.3.SG.N RPRO.3.SG.N ABL
 He did it again, he swallowed her and spat it out.
 Na em i bin mekim olsem gen, em i bin daunim meri na spetim em.
- (83) *ovoi-ei*
 finish-PRES_α
 Done.
 Em inap.

- (84) *rovi-ro-epa okaoto vosia veve-pe vo-guruva ra oira pura-ve*
 mix-3SG.M_α-RP_α talis when ripe-SUB SING-leaf COMP PRO.PER.3.SG.F make-1DL
revasiva oo iria pura-ere-va voo vorevira
 blood DEM.PROX.SG.F PRO.REL.3.SG.F make-3DL.F- here backward
vairei kavusi-oro
 PRO.PER.2/3.DL.F spit.out-DEP.SIM
 ???
 The talisa tree mixes when its leaves ripen and the blood that was spit out makes it red.¹⁰
- (85) *oire eva oira opesipie-aro-ia vo-siposipo*
 okay DEM.MED.SG.N PPRO.3.SG.F finish-POSS-LOC SING-story
 Okay, that is the end of the story.
 Orait, pinis bilong dispela meri em pinis bilong dispela stori,
- (86) *opesipie-aro-ia aue iava oo erava vo-siposipo iava vairei*
 finish-POSS-LOC CONN ABL DEM.PROX.SG.F song SING-story ABL PPRO.2/3.DL.F
iava evairei aireia-pa sirao-a vate-si-va aite-toarei
 ABL DEM.MED.DL.F DEM.MED.DL.F-BEN pity-SG.N give-3DL.M-RP_β father-
 The end of the song, the song about the two of them when both parents gave sorrow to
 the two girls.
 Dispela singsing em i long stori ya long tupela taim tupela papa i bin givim sori long
 tupela meri.

C.2 Matevu, Version 2

This version of the folk tale was recorded in the village of Togarao in 2003 and then transcribed by Timothy Taureviri and translated into Tok Pisin by Sera Mon before being entered into Shoebox and translated into English by the author. The narrator of the story is Caleb Karuru (shown in Figure 1.2), an older speaker of Rotokas who also worked with Irwin Firchow.

- (1) *oire erao-pie-pa siposipo-a vao oa*
 okay two-CAUS-DERIV story-SG.N DEM.PROX.3.SG.N RPRO.3.SG.N
pura-pa-a-voi
 make-CONT-1SG_β-PRES_β
 Okay, this is the second story I want to tell.
 Orait, em numba tu stori mi laik wokim.
- (2) *oavao-vu iava oisoa tou-pa-i-ve*
 family-ALT ABL always be-CONT-3PL_β-SUB
 It's about a family that existed.
 Long wanpela pamili i bin save i stap.

¹⁰This sentence was overlooked by consultants when the text was translated into Tok Pisin.

- (3) *o-avuka-rei-vu-ia va aiterei-ia oisoa tavauru-rirei*
 SPEC-age-DL.CL-ALT-LOC PPRO.3.SG.N PPRO.3.DL.M-LOC always teenage.girl-DL.F
tapo oisio tou-pa-si
 also like be-CONT-3DL.M
 A couple with two young girls.
 Long tupela marit ol i bin save stap wantaim tupela yangpela pikinini meri.
- (4) *ovii-rirei*
 child-DL.F
 Two daughters.
 Tupela pikinini meri.
- (5) *oire kovo-ia opo kovo rera vo-kovo-aro eva*
 okay garden-LOC taro garden PPRO.3.SG.M SING-garden-POSS DEM.MED.SG.N
 None
 Orait, long dispela gaden bilong em.
- (6) *vo-ao vo-kovo-aro opo kovo raga pura-pa-i-ve opo kovo*
 SING-family SING-garden-POSS taro garden only make-CONT-3PL_β-SUB taro garden
raga pura-pa-i-ve
 only make-CONT-3PL_β-SUB
 This family, they just worked the taro garden.
 Dispela pamili em wok bilong ol long wokim gaden taro tasol.
- (7) *viapau oisio oavuavu-vai ari va raga opo*
 NEG like something-INDEF but PPRO.3.SG.N only taro
 There wasn't anything else, just taro.
 Nogat narapela samting, tasol em taro tasol.
- (8) *oire vosia vo-kovo siovara-ia vo-kuio-rei tou-pa-i-ve*
 okay when SING-garden inside-LOC SING-round-DL.CL be-CONT-3PL_β-SUB
 Okay, inside of this garden, there were two taro.
 Orait, na insait long dispela gaden tupela taro i bin save i stap.
- (9) *virapie kuio-rei-vi oarea oisoa vaisi-pa-i-ve oisio Vatevu ora*
 transfer round-DL.CL-DIM RPRO.3.DL.N always call-CONT-3PL_β-SUB like name and
Siraveru
 name
 These two taro, they called them 'Vatevu' and 'Siraveru'.
 Dispela tupela taro hia ol i save kolim olsem 'Vatevu' wantaim 'Siraveru'

- (10) *evo kuo-rei oarea pau-re-va*
 DEM.N round-DL.CL RPRO.3.DL.N build-3SG.M_β-RP_β
 These two taro that he planted.
 Dispela tupela taro em i bin planim.
- (11) *oire oisoa tou-pa-i-ve*
 okay always be-CONT-3PL_β-SUB
 Okay, they were there.
 Orait, ol i bin save stap.
- (12) *uva riro-epa vo-opo kovo siovara-ia*
 so grow_up-RP_α SING-taro garden inside-LOC
 They grew big inside of the taro garden.
 Na tupela taro i bin kamap bikpela insait long gaden taro.
- (13) *uva o-voki-vu-ia vairei tavi-pa-si-va*
 so SPEC-day-ALT-LOC PPRO.3.DL.F tell-CONT-3DL.M-RP_β
 Okay, one day the two of them talked to the two of them,
 Orait, na tupela i bin tokim tupela pikinini bilong tupela olsem,
- (14) *ai kovo-sia ava-pa-ere-i-ei opo kovo-ia kovo-sia*
 hey work-DEP.SEQ go-CONT-3DL.F-EPEN-PRES_α taro garden-LOC work-DEP.SEQ
ava-pa-ere-i-ei opo kovo-ia
 go-CONT-3DL.F-EPEN-PRES_α taro garden-LOC
 Hey, you two go work in the taro garden, you two go work in the taro garden.
 Bai yutupela go wok long gaden taro, bai yutupela go wok long garden taro.
- (15) *oire ava-ere-i-epa ava-ere-i-epa ava-ere-i-epa*
 okay go-3DL.F-3PL_β-RP_α go-3DL.F-EPEN-RP_α go-3DL.F-EPEN-RP_α
 Okay, the two of them went, they went, they went.
 Orait, tupela i bin go, tupela i bin go, tupela i bin go.
- (16) *oisoa oisiopie-pa-ere voki-ara rutu-ia oisoa oisiopie-pa-ere voki-ara*
 always pretend-CONT-3DL.F day-PL.N very-LOC always pretend-CONT-3DL.F day-PL.N
rutu-ia kovo-pa
 very-LOC garden-BEN
 The two of them always did this, they always did this for the garden.
 Na tupela i bin save mekim olsem olgeta taim, [???] ¹¹
- (17) *voki-ara rutu-ia kovo-pa-sia ava-pa-ere*
 day-PL.N very-LOC work-CONT-DEP.SEQ go-CONT-3DL.F
 Every day the two of them went to work.
 Olgeta dei tupela i bin save go wok.

¹¹Not sure about the analysis of last word (kovopa). Is it really a noun?

- (18) *uva opo kuio tate-ere-va*
 so taro round extract-3DL.F-RP_β
 And the two of them removed (dug up) a taro.
 Na tupela i bin kamautim wanpela taro.
- (19) *vo-kuiio-rei iava virapie kuiio-rei rera varei-aro*
 SING-round-DL.CL ABL transfer round-DL.CL PPRO.3.SG.M DEM.MED.DL.N-POSS
oarea oisoa virapievira toki-pa-re-ve rera
 RPRO.3.DL.N always transfered-like look.after-CONT-3SG.M_β-SUB PPRO.3.SG.M
 ???
 Long dispela tupela taro bilong em em i bin save lukautim narakain.
- (20) *oire vosia varei-va kare-ere-i-epa*
 okay if DEM.MED.DL.N-ABL return-3DL.F-EPEN-
 When the two of them returned with these two (taro),
 Orait, na taim tupela i bin karim i go,
- (21) *uva varei evei-re-va rera aite-to*
 so DEM.MED.DL.N recognize-3SG.M_β-RP_β PPRO.3.SG.M father-SG.M
 their father recognized the two (taro).
 Olsem na papa bilong em i bin luksave long tupela taro.
- (22) *ai vairei-o apeisi oisio ragavira keke-pa-ei vo-kuiio-ia*
 hey PPRO.3.DL.F-? how like just look-CONT-PRES_α SING-round-LOC
 Hey, why do these two taro look this way?
 Eh, olsem wanem na dispela tupela taro i luk olsem?
- (23) *oisio osia vo-kuiio-rei-o oarea iava vei*
 like as SING-round-DL.CL-? RPRO.3.DL.N POST PPRO.2.DL
tavi-pa-a-veira
 tell-CONT-1SG_β-HAB.ANIM
 These are the two taro that I am always telling you about.
 Em olsem dispela tupela taro mi bin save tokim yutupela long em.
- (24) *aure evoa vairei-re reo-pa-si-epa*
 Yes DEIC.MED PPRO.3.DL.F-ALL talk-CONT-3DL.M-RP_α
 Yes, the two of them told them,
 Tupela i bin tokim tupela.
- (25) *vuri-a pura-ere-voi rutu*
 wrong-SG.N make-3DL.F-PRES_β very
 the two of you did very bad.
 Yutupela i wokim pasin nogut.

- (26) *uva opo-a tate-ere-voi virapie kuio rutu vao-ia*
 so taro-SG.N extract-3DL.F-PRES_β transfer round very DEM.PROX.3.SG.N-LOC
 The two of them took out this taro that was truly different.
 Na yutupela i kamautim dispela taro em i narakain tru. [Not sure if the last word is properly analyzed (check transcription).]
- (27) *oire vairei-re kasipu-si-epa vaierei rutu*
 okay PPRO.3.DL.F-ALL angry-3DL.M-RP_α PPRO.2.DL.M very
 Okay, the two of them (the parents) were really angry with the two of them (the children).
 Orait, tupela wantaim i bin krosim tupela.
- (28) *uva ritu-pa-oro uusi-sia koata-ere-i-epa*
 so ashamed-CONT-DEP.SIM sleep-DEP.SEQ enter-3DL.F-EPEN-RP_α
 So two of them went inside to sleep in shame.
 Olsem na tupela i bin kros na tupela i bin go insait
- (29) *viapau aio-ere-va*
 NEG eat-3DL.F-RP_β
 The two of them didn't eat.
 taim ol i no kaikai.
- (30) *ari uusi-raga-sia koata-ere-i-epa*
 but sleep-only-DEP.SEQ enter-3DL.F-3PL_β-RP_α
 But the two of them went inside and just slept.
 Em tupela i bin go insait na slip nating.
- (31) *ora-reo-pa-ere-i-epa*
 RR-talk-CONT-3DL.F-EPEN-RP_α
 The two of them talked,
 Na tupela i bin toktok,
- (32) *apeisi ragavira pie-pa-ve-voi*
 how only do-CONT-1DL-PRES_β
 What will we do?
 Bai mitupela i mekim wanem?
- (33) *ee raga ava-pa-ve-i-ei*
 hey only go-CONT-1DL-EPEN-PRES_α
 Should the two of us go?
 Bai mitupela i go?

- (34) *ava-pa-ve-i-ei* *rara ritu-pa-oro*
 go-CONT-1DL-EPEN-PRES_α later disgusted-CONT-DEP.SIM
 We're embarassed and we'll go.
 Bai mitupela i kros na i go.
- (35) *oire uusi-ere-epa* *uusi-ere-epa* *uusi-ere-epa*
 okay sleep-3DL.F-RP_α sleep-3DL.F-RP_α sleep-3DL.F-RP_α
 The two of them slept, the two of them slept, the two of them slept.
 Orait, tupela i bin slip, tupela i bin slip, tupela i bin slip.
- (36) *uva voari* *rutu vokipakou rutu tore-ere-i-epa*
 so before very morning very stand-3DL.F-EPEN-RP_α
 In the early morning the two of them got up.
 Olsem na long moning tru tupela i bin kirap.
- (37) *oravasike-ere-i-ei*
 leave-3DL.F-EPEN-PRES_α
 The two of them left.
 Tupela i bin kirap i go.
- (38) *vasike-ere-i-ei* *voka-pa-oro*
 leave-3DL.F-EPEN-PRES_α walk-CONT-DEP.SIM
 The two of them left on foot.
 Tupela i bin kirap i go wokabaut.
- (39) *ava-ere-i-ei*
 go-3DL.F-EPEN-PRES_α
 The two of them went,
 Tupela i bin go,
- (40) *ava-ere-i-ei*
 go-3DL.F-EPEN-PRES_α
 the two of them went.
 tupela i bin go
- (41) *ai aite vaio* *vegei-re* *reo-pa-si-e* *opo*
 hey father DL.ANIM PPRO.1.DL.EXCL-ALL talk-CONT-3DL.M-IP_α taro
kuio-rei-pa *Vatevu kuio-rei* *ora Siraveru kuio*
 round-DL.CL-BEN name round-DL.CL and name round
 Hey, our parents talked to the two of us about the two taro, Vatevu and Siraveru.
 Ae, tupela papa i krosim mitupela long tupela taro, Vatevu wantaim Siraveru.

- (42) *oire iria-vu koova-va iria-ia kovo-pa-oro*
 okay RPRO.3.SG.F-ALT song-SG.F RPRO.3.SG.F-LOC work-CONT-DEP.SIM
voka-pa-ere-va raiva-ro
 walk-CONT-3DL.F-RP_β road-PL.CL
 Okay, this song they sang as they walked on the road.
 Orait, wanpela singsing tupela i bin singim taim tupela i wakabaut i go long rot.
- (43) *iria-ia oisoa koova-pa-a-ve voari tuariri vo-siposipo*
 RPRO.3.SG.F-LOC always sing-CONT-3PL_α-SUB before before SING-story
pura-pa-oro
 say-CONT-DEP.SIM
 They always sang this long ago telling this story.
 Dispela singsing em ol i bin save singim bipo taim ol i wokim dispela stori.
- (44) *uva oira-ia koova-pa-ere-i-epa oisio ragavira*
 so PPRO.3.SG.F-LOC sing-CONT-3DL.F-EPEN-RP_α like just
 So the two of them sang this song just like this,
 Na tupela i bin singim dispela singsing olsem,
- (45) SONG
- (46) *oire ava-pa-ere-i-epa ava-pa-ere-i-epa*
 okay go-CONT-3DL.F-EPEN-RP_α go-CONT-3DL.F-EPEN-RP_α
ora-sirao-pie-pa-oro
 RR-pity-CAUS-CONT-DEP.SIM
 The two of them went, feeling sorry for themselves.
 Orait, tupela i bin go, tupela i bin go, na mekim sori tupela yet.
- (47) *gau-pa-oro ava-pa-ere-i-epa vo-raiva-ro*
 cry-CONT-DEP.SIM go-CONT-3DL.F-EPEN-RP_α SING-road-PL.CL
 The two of them went crying along the road.
 Tupela i bin krai i go long rot.
- (48) *osia vairei vore-raga-pa-oro uutu-pa-ro-epa*
 as PPRO.3.DL.F return-only-CONT-DEP.SIM follow-CONT-3SG.M_α-RP_α
 He was tired following them.
 Olsem na em i bin tait long pasim tupela.
- (49) *vairei vore-raga-pa-oro uutu-pa-ro-epa osia viapau rutu*
 PPRO.3.DL.F return-only-CONT-DEP.SIM follow-CONT-3SG.M_α-RP_α as NEG very
 He was tired of following the two of them.
 Em i bin tait long pasim tupela tasol nogat tru.

- (50) *uva vairei vuripie-si-va rutu vo-avuka-rei vairei-re*
 so PPRO.3.DL.F ruin-3DL.M-RP_β very SING-age-DL.CL PPRO.3.DL.F-ALL
kasipu-pa-oro
 angry-CONT-DEP.SIM
 The two of them harmed the two of them when they got angry.
 Na tupela i bin bagarapim tupela taim tupela i krosim ol.
- (51) *ava-pa-ere-i-epa ava-pa-ere-i-epa avakava-re*
 go-CONT-3DL.F-EPEN-RP_α go-CONT-3DL.F-EPEN-RP_α ocean-ALL
tara-pa-oro ava-pa-ere-i-epa
 seek-CONT-DEP.SIM go-CONT-3DL.F-EPEN-RP_α
 The two of them went, they went to the ocean.
 Tupela i bin go, tupela i bin go, tupela i bin go bilong painim solwara.
- (52) *avakava-re tara-pa-oro ava-pa-ere-i-epa*
 ocean-ALL seek-CONT-DEP.SIM go-CONT-3DL.F-EPEN-RP_α
 The two of them went to find the ocean.
 Tupela i bin go bilong painim solwara.
- (53) *oira-ia koova-pa-oro ra uva-vi-vu ita oira*
 PPRO.3.SG.F-LOC sing-CONT-DEP.SIM COMP so-DIM-ALT again PPRO.3.SG.F
kaepie-re ita
 raise-3SG.M_β again
 The two of them sang and wherever they went, they two sang again.
 Tupela i bin singsing na go wanem hap tupela i kamap bai tupela singim gen.
- (54) SONG
- (55) *ava-pa-ere-i-epa ava-pa-ere-i-epa*
 go-CONT-3DL.F-EPEN-RP_α go-CONT-3DL.F-EPEN-RP_α
 The two of them went, the two of them went.
 Tupela i bin go,
- (56) *pukui-ia tugura-ere-i-epa*
 hill-LOC arrive-3DL.F-EPEN-RP_α
 The two arrived on the hill.
 Tupela i bin go kamap antap long maunten.
- (57) *atoi vura-ere-va*
 village look.at-3DL.F-RP_β
 They looked at the village.
 Na tupela lukluk i go bek long ples.

- (58) *ato-ia vura-oro avau-ere-va voa*
 harvest-LOC look_at-DEP.SIM say_goodbye-3DL.F-RP_β here
 The two of them looked at their village and said good-bye.
 Tupela i bin lukluk i go bek long ples na tok gutbai.
- (59) *ora-putepie-ere-i-epa*
 RR-overtake-3DL.F-3PL_β-RP_α
 The two of them went over (the mountain).
 Na tupela bin kalap i go long hapsait.
- (60) *ava-ere-i-epa ava-ere-i-epa ava-ere-i-epa ava-ere-i-epa*
 go-3DL.F-EPEN-RP_α go-3DL.F-EPEN-RP_α go-3DL.F-EPEN-RP_α go-3DL.F-EPEN-RP_α
 The two of them went, they went, they went, and they went.
 Tupela i bin go, tupela i bin go, tupela i bin go, tupela i bin go.
- (61) *koova-ere-i-epa ita*
 sing-3DL.F-EPEN-RP_α again
 The two of them sang again.
 Tupela i bin singsing gen.
- (62) SONG
- (63) *oire pou-ere-viro-epa vo-avaka-va-ia*
 okay arrive-3DL.F-COMPL-RP_α SING-ocean-SG.F-LOC
 Okay, the two of them came to the ocean.
 Orait, tupela i bin kamap long solwara.
- (64) *oire oavu-va oa vaisi-pa-i-veira oisio okaoto-va*
 okay another-SG.F RPRO.3.SG.N call-CONT-3PL_β-HAB.ANIM like talis-SG.F
 One tree, they call ‘okaoto’.
 Orait, wanpela diwai ol i save kalim olsem ‘talisa’.
- (65) *o-pouka-ia ereere-ere-i-epa*
 SPEC-lean-LOC walk.across-3DL.F-EPEN-RP_α
 The two of them walked up on the leaning (tree).
 Tupela i bin kalap.
- (66) *ava-ere-i-epa voa pau-pa-ere-i-epa voa pau-pa-oro*
 go-3DL.F-EPEN-RP_α here sit-CONT-3DL.F-EPEN-RP_α here sit-CONT-DEP.SIM
koova-pa-ere-i-epa
 sing-CONT-3DL.F-EPEN-RP_α
 The two of them went, they sat down, and they sang.
 Tupela i bin go na tupela i bin sindaun. Tupela i bin sindaun na singsing.

(67) SONG

(68) *pau-pa-ere-i-epa* *tue-pa-oro* *osia riro-to* *siaka*
sit-CONT-3DL.F-EPEN-RP_α wait-CONT-DEP.SIM as big-SG.M shark
urio-ro-epa *urio-ro-epa*
come-3SG.M_α-RP_α come-3SG.M_α-RP_α
The two of them sat down and waited when one big shark came.
Tupela i bin sindaun na wait taim wanpela bikpela sak i bin kam.

(69) *oire okaoto-va reroaro* *viripa-re-va*
okay talis-SG.F underneath twist-CONT-3SG.M_β-RP_β
Okay, he circled under the tree.
Orait, na em i bin raun undanit long talisa.

(70) *viripa-re-va*
twist-CONT-3SG.M_β-RP_β
He went around
Em i bin raun

(71) *vairei* *gesi-re-va*
PPRO.3.DL.F smell-3SG.M_β-RP_β
and smelled them.
taim em i smelim tupela.

(72) *viripa-re-va*
twist-CONT-3SG.M_β-RP_β
He went around.
Em i raun.

(73) *oire avaiopa-va* *isiva* *oari* *tavi-pa-e-va*
okay first-born-DERIV-SG.F turn.back.on DEM.DIST.SG.F tell-CONT-3SG.F_β-RP_β
kikoo-pa-va
second-born-DERIV-SG.F
Okay, the big sister told the little sister.
Orait, bikpela sista bilong em i bin tokim liklik sista bilong em.

(74) *oraviki rovo-pa-u-ei* *vii*
jump start-CONT-2SG_α-PRES_α PPRO.2.SG
You jump off first.
Bai yu kalap pastaim.

- (75) *oire ovoio-pa-vira koova-ere-i-epa oira-ia*
 okay be.last-DERIV-ADV sing-3DL.F-EPEN-RP_α PPRO.3.SG.F-LOC
koova-ere-i-epa
 sing-3DL.F-EPEN-RP_α
 Okay, for the last time the two of them sang this song.
 Orait, na laspela taim tupela i bin singim dispela singsing.
- (76) *voa oraviki-o-epa osia siaka ira oira kopa-re-va*
 here jump-3SG.F_α-RP_α as shark RPRO.3.SG.M PPRO.3.SG.F swallow-3SG.M_β-RP_β
osia revasiva iria vorevira kae-o-viro-epa okaoto-va iare
 as blood RPRO.3.SG.F backward carry-3SG.F_α-COMPL-RP_α talis-SG.F towards
guruva-ro iare
 leaf-PL.CL towards
 Here the two of them leapt as the shark eats her while her blood goes goes back onto the
 leaves of the tree.
 Long hap em i bin kalap na sak i bin daunim em taim blut i bin kalap i go antap long lip
 bilong talisa.
- (77) *oire oira aio-re-voi oira aio-re-voi*
 okay PPRO.3.SG.F eat-3SG.M_β-PRES_β PPRO.3.SG.F eat-3SG.M_β-PRES_β
 Okay, he ate her, he ate her.
 Orait, em i kaikai em, em i kaikai em.
- (78) *oo avai-o-pa-va iria tou-pa-e-va*
 DEM.PROX.SG.F first_born-DERIV-SG.F RPRO.3.SG.F be-CONT-3SG.F_β-RP_β
 This last one remained.
 Dispela laspela i bin stap.
- (79) *vosia oira opesi-re-va uva viri-pa-re-va voari*
 when PPRO.3.SG.F finish-3SG.M_β-RP_β so twist-CONT-3SG.M_β-RP_β before
 When he finished her, he twisted around again.
 Taim em i pinis kaikai em na em i bin wok long raun.
- (80) *uva tarai-o-epa oisio opesi-o-e oraviki-o-ei*
 so understand-3SG.F_α-RP_α like finish-3SG.F_α-IP_α jump-3SG.F_α-PRES_α
 She knew that her sister was finished and jumped.
 Na em i bin save olsem em i pinisim susa bilong em na em i bin kalap.
- (81) *oire eira ita revasi-aro voari-re okaoto guruva iare*
 okay DEM.MED.SG.F again bleed-POSS before-ALL talis leaf towards
kae-o-viro-ei
 carry-3SG.F_α-COMPL-PRES_α
 Okay, the blood of this girl was carried back on top of the leaf of the tree again.
 Orait, blut bilong dispela narapela meri em i go antap gen long lip bilong talisa.

- (82) *oire oisio oisoa va aue-pa-i-ve*
 okay like always PPRO.3.SG.N ignore-CONT-3PL_β-SUB
 Okay, so they would always think this way.
 Orait, na ol i bin save tingting olsem,
- (83) *va eva siposipo-a opesi-aro*
 PPRO.3.SG.N DEM.MED.SG.N story-SG.N end-POSS
 That's the end of the story.
 Em i pinis bilong stori.
- (84) *oire voa-va reo-pa-ra-ei aue iava okaoto-a-i oisio osia*
 okay here-ABL talk-CONT-1SG_α-PRES_α CONN ABL talis-?- like as
pura-pa-ve evairei revasi-aro-a evairei okaoto-a-ia
 make-CONT-SUB DEM.MED.DL.F bleed-POSS- DEM.MED.DL.F talis-SG.N-LOC
voto-ere-i-epa
 stuck-3DL.F-EPEN-RP_α
 Okay, I'll talk about the talisa ???.
 Orait, mi laik toktok long talisa em olsem blut bilong tupela meri i bin pas long ol lip.
- (85) *oire vosia okaoto keke-pa-ri osia veve-pa-ei revasivira*
 okay if talis look.at-CONT-2SG_β as ripe-CONT-PRES_α bloody
 Okay, if you look at this tree as it ripens and turns red, it's the blood of two women.
 Orait, sapos yu lukim talisa taim lip bilong em i red, em blut bilong tupela meri.
- (86) *oire eisi-vira raga osia opesi-ei*
 okay like.this-ADV only as finish-PRES_α
 That's how it ends.
 Orait, em i pinis olsem.
- (87) *osia vo-siposipo reo pura-a-voi*
 as SING-story talk make-1SG_β-PRES_β
 As I work this story,
 Olsem mi wokim dispela tupela stori.
- (88) *ragai Caleb Karuru*
 PPRO.1.SG name name
 I'm Caleb Karuru.
 Mi, Caleb Karuru.

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Samenvatting

Gespleten intransitiviteit in het Rotokas, een Papoea taal uit Bougainville

Het doel van dit proefschrift is tweevouding. Ten eerste geeft het een vrij uitvoerige beschrijving van de grammatica van het Rotokas, een Papoea taal (non-Austronesisch) die gesproken wordt in Bougainville, Papoea Nieuw Guinea. Er bestaan al eerdere grammaticale beschrijvingen van het Rotokas (zie §2.2.1 voor een compleet overzicht), maar dit zijn voornamelijk kleine publicaties die soms moeilijk te volgen zijn, en een overzicht ontbreekt. Ten tweede richt dit werk zich op een specifiek onderdeel van de grammatica van het Rotokas dat problematisch is voor grammaticale theorie: werkwoordsvervoeging. Daarbij gaat het specifiek om het bestaan van twee elkaar uitsluitende vervoegingsklassen voor congruentie met het onderwerp en markering van tijd en aspect. Verschillende aspecten van de morfosyntaxis van het Rotokas zullen onderzocht worden en uiteindelijk zal geconcludeerd worden dat het Rotokas vanuit een typologisch standpunt gezien een interessante vorm van gespleten intransitiviteit heeft. De aard van gespleten intransitiviteit in het Rotokas heeft implicaties voor theorieën over gespleten intransitiviteit in specifieke zin en voor theorieën over transitiviteit, valentie, en de interface tussen semantiek en syntaxis in het algemeen.

Deel I

Hoofdstuk 1 introduceert de doelen en de opbouw van het proefschrift en geeft achtergrondinformatie met betrekking tot het veldwerk dat de auteur in Bougainville verricht heeft tussen 2003 en 2005.

Hoofdstuk 2 geeft achtergrondinformatie met betrekking tot de Rotokas taal en haar sprekers. In §2.1 wordt de recente geschiedenis van Bougainville en de diepere geschiedenis van de regio besproken. §2.2 geeft belangrijke achtergrondinformatie over het Rotokas: eerdere beschrijvingen van de taal, informatie over de sprekers, een overzicht van dialectologische variatie, een overzicht van de talen die gesproken worden in Bougainville, en een samenvatting van wat bekend is over de genetische relaties van deze talen.

Hoofdstuk 3 geeft een overzicht van de fonologie van het Rotokas, die typologisch gezien ongebruikelijk is vanwege de kleine foneeminventaris. §3.1 beschrijft de foneeminventaris van de taal en §3.2 beschrijft wat bekend is over de suprasegmentele fonologie van de taal.

Hoofdstuk 4 bekijkt de woordklassen die gevonden zijn in de taal. Er wordt een onderscheid gemaakt tussen wortels, stammen en woorden. De volgende woordklassen worden onderscheiden: zelfstandig naamwoorden, maatwoorden, voornaamwoorden, werkwoorden, bijvoegelijk naamwoorden, bijwoorden, achterzetsels, vraagwoorden, voegwoorden en exclamatieven.

Hoofdstuk 5 geeft een overzicht van de vrij uitgebreide morfologie van het Rotokas. Er wordt eerst gekeken naar de morfologie van het zelfstandig naamwoord en daarna naar die van het werkwoord. Ook reduplicatie en morfofonemische regels worden beschreven.

Hoofdstuk 6 richt zich op syntaxis. Eerst wordt de naamwoordgroep besproken en daarna de gehele zin. Zowel de syntaxis binnen zinsdelen (§6.2) als de syntaxis tussen zinsdelen (§6.3) wordt behandeld. In §6.2 komen de basiswoordvolgorde, de verplaatsing van O, vraagzinnen en negatie aan bod. In §6.3.1 worden complementatie, verbale constituenten en grotere syntactische eenheden (zinnen met voegwoorden) besproken.

Deel II

In hoofdstuk 7 wordt de probleemstelling geformuleerd. Deze wordt ingegeven door de twee verschillende klassen van werkwoordsvervoeging in het Rotokas, die zullen worden aangeduid met α en β . §7.1 geeft een uitvoerige beschrijving van het formele onderscheid en een duidelijke lijst met kenmerken voor de herkenning van deze twee klassen. In §7.2 wordt het probleem beschreven en een tentatieve hypothese voor een oplossing geformuleerd. In de komende hoofdstukken wordt deze hypothese nader uitgewerkt door in te gaan op valentie, valentieveranderende derivaties en de semantiek van de twee klassen.

In hoofdstuk 8 wordt het karakter van valentie in het Rotokas bestudeerd. Er zijn twee typen valentie in het Rotokas: monovalente werkwoordswortels (“intransitief”) met één argument en bivalente werkwoordswortels (“transitief”) met twee of mogelijk drie kernargumenten. Bivalente werkwoordswortels vervoegen altijd volgens het β patroon. Monovalente werkwoordswortels echter, vallen in twee groepen wat betreft de vorm van hun vervoeging: de meeste vervoegen volgens het α patroon, maar sommige vertonen β vervoeging.

Hoofdstuk 9 geeft een overzicht van derivaties die de valentie van werkwoordswortels vermeerderen of verminderen. Valentievermeerderende derivaties worden besproken in §9.1 en valentieverminderende derivaties worden besproken in §9.2. Deze derivaties zijn niet gevoelig voor het onderscheid tussen α en β monovalente werkwoordswortels en geven dus geen aanleiding om een onderliggend syntactisch verschil tussen deze twee typen te veronderstellen. De derivaties geven wel extra bewijs voor een nauw verband tussen valentie en werkwoordsvervoeging, aangezien een afnemende valentie in verband staat met α vervoeging en een toenemende valentie met β vervoeging.

In hoofdstuk 10 wordt de semantische basis van gespleten intransitiviteit in het Rotokas besproken. De semantische rollen die met de verschillende grammaticale rollen samenhangen worden bestudeerd in §10.2. In §10.3 worden de resultaten van deze studie in een bredere, typologische context geplaatst en worden verder strekkende implicaties van de gespleten in-

transitiviteit in het Rotokas besproken.

Samenvattend: dit proefschrift draagt bij aan het debat over de juiste analyse van gespleten intransitiviteit, en of dit in de eerste plaats een semantisch of een syntactisch verschijnsel is. De tweedeling tussen semantiek en syntaxis is misleidend in het licht van de analyse van het Rotokas waarvoor hier gepleit wordt. Gespleten intransitiviteit bevindt zich op de grens tussen syntaxis en semantiek; beide zijn noodzakelijk voor een complete verklaring. Er lijkt geen enkelvoudig principe te zijn dat de vervoeging van werkwoorden in het Rotokas aanstuurt en de verklaring die in dit proefschrift wordt gegeven brengt veel willekeurige stipulaties in het werkwoordslexicon met zich mee. Hoewel er daarom geen sterke conclusies getrokken kunnen worden, geeft deze analyse ons wel meer inzicht in de morfosyntactische complexiteit van het Rotokas. Bovendien worden fundamentele aspecten van de grammatica van een relatief onbeschreven Papoea taal blootgelegd.

Dit proefschrift bevat drie bijlagen. De eerste bijlage is een gedetailleerde lijst van werkwoordsstammen, afkomstig uit een elektronische database van het Rotokas lexicon ontwikkeld door de auteur. De tweede bijlage is een formele implementatie van de morfologische analyse van het Rotokas binnen het framework van finite state morphology, waarvoor de PARC software toolkit is gebruikt. De derde bijlage bevat twee voorbeeldteksten met interlineaire glossen en vertalingen in het Engels en het Tok Pisin. Het betreft twee verschillende versies van een traditioneel volksverhaal, de n gedocumenteerd door Irwin Firchow en de ander door de auteur zelf.

Curriculum Vitae

Stuart Robinson received a liberal arts education at Reed College, where he received a B.S. in Linguistics in 1996. He continued his studies in linguistics at the Australian National University, where he received a M.A. in Linguistics in 1999. He was offered a Ph.D. scholarship at the Max Planck Institute for Psycholinguistics in Nijmegen, The Netherlands, where he resided intermittently from 2003 and 2007 between fieldwork trips to Bougainville. After leaving the MPI, he joined Powerset, a startup in San Francisco that specialized in natural language web search. The company was acquired by Microsoft in 2008 and was incorporated into Microsoft's search engine, Bing.

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