

A model and typology of reduplication in Sora¹

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Abstract

Reduplication is found in an unparalleled thirteen percent of the lexicon in Sora, a Munda language of eastern India with 310,000 speakers. Most cross-linguistically attested forms of reduplication are present in Sora, from full to partial, faithful to unfaithful, fixed segmentism, triplication and ordered reduplication. Reduplication in Sora is often onomatopoeic and occurs at higher rates in children's language. However, reduplication is not productive; many of the base forms are not distinct lexemes in Sora. Previous models like the morphological doubling model (Inkelas & Zoll 2005) cannot successfully derive reduplication that is not semantically-driven. Other models, like Optimality Theory (Prince & Smolensky 1993; McCarthy 2006) cannot successfully account for all forms of reduplication with a single set of constraints. However, the precedence relations model (Raimy 2000) is a loop-based model which accounts for all forms of reduplication in Sora, regardless of their semantics. Full reduplication, like [baŋ-'baŋ] 'to be strong', is derived from a precedence loop placed at the coda /ŋ/ that leads to the onset /b/, repeating the entire base. Partial reduplication, like [dʒu-'dʒud] 'to lull to sleep', requires that the beginning or the end of the loop be altered to encompass a portion of the base. Triplication, like [ke-ke-'ke] 'the scream of the peafowl', requires repetition of the loop and ordered reduplication, like [da-'daŋ-da-'daŋ] 'the sound of cutting wood', requires the interaction of distinct precedence loops. My intent is to provide a typology of reduplication in Sora and show that a single model can account for all forms.

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1 Introduction

1.1 Introduction

Sora is an under-documented Munda language spoken in the hills eastern India. In the summer of 2011, I worked in Professor K. David Harrison's laboratory for endangered language research and documentation to create an online talking dictionary for Sora. The project involved segmenting, transcribing and uploading soundfiles to database. The dictionary now hosts over 1200 entries. Spending hours with the language, listening to soundfile after soundfile, I began to notice that a remarkable amount of the language was reduplicated and this reduplication gave it a very unique rhythm and sound. Moreover, it was particularly remarkable because reduplication wasn't acting in ways I expected; it wasn't obviously productive. It didn't intensify an adjective, didn't make an action iterative, and didn't pluralize a noun. Even more striking was the realization that reduplicated forms in Sora often existed when their base form did not, a phenomenon that seems to intuitively violate the economy condition (Moravcsik 1978). It was these two parallel realizations that lead me to this thesis on the morphophonological representation of reduplication in Sora.

In this thesis, I will examine reduplication as a phenomenon in Sora. I will begin by introducing my reader to the Sora language and its speakers. I will then present three existing cross-linguistic models of reduplication: the Optimality Theory model presented by McCarthy (2006) and Prince and Smolensky (1993), the morphological doubling model presented by Inkelas and Zoll (2005), and precedence relations model presented by Raimy (2001). While each of these models has been demonstrated to be capable of generating cross-linguistic patterns of reduplication, I will select Raimy's precedence relations model to apply to Sora as it is the simplest and most universal. Thus, using

Raimy's model, I will present a typology of reduplication in Sora illustrating the breadth of reduplicated forms found in Sora as well as how they can all be unified under a single model. I hope that through this thesis I will illustrate that Sora is a language that exhibits reduplication and that it can contribute to the dialogue on the morphophonology of reduplication regardless of its productivity.

1.2 Data

The data analyzed in this paper comes from two sources. The first, which makes up the greater portion of my corpus, is Rao Sahib Ramamurti's (1933) *Sora-English Dictionary*. This work presents the most expansive collection of the Sora lexicon to date. However, it is also nearly eighty years old; significant shifts and changes in the Sora language may have occurred since Ramamurti's fieldwork in early twentieth century. Out of an estimated 7600 tokens in the dictionary, 1000 tokens exhibit one form or another of reduplication. Thus, over 13.15% of the Sora lexicon is reduplicated, a truly remarkable number.

The second source of Sora data came directly from the field. In four trips from 2007 to 2011, K. David Harrison, Gregory Anderson, and their team recorded elicitation sessions, conversations, and videos in Orissa state. Beginning in 2011 with a grant from Swarthmore College and the National Geographic's Enduring Voices Project, I have segmented, glossed, and transcribed many of these elicitation sessions and videos to create an online talking dictionary (sora.swarthmore.edu). However, this is a work in progress and there are still more files to be segmented, transcribed, and analyzed. Yet the initial results are encouraging, as out of 1085 tokens, 121 display one form or another of

reduplication. These numbers roughly parallel those seen in Ramamurti's dictionary, with 11.15% of all tokens exhibiting reduplication.

1.3 Methodology

The methodology of this research involved consulting two corpora of data and visually selecting the reduplicated forms. For the Ramamurti (1933) *Sora to English Dictionary*, I began by consulting every tenth page to generate a somewhat random sample. However, it became clear to me that this methodology was not sufficiently random. Yet, since the document only existed in print there was no true method for randomization. Thus I consulted all 7,600 tokens to determine visually which tokens demonstrated a form of reduplication. I then followed the same procedure with the data from Harrison and Anderson for visually selecting reduplicated forms.

All 1129 reduplicated forms were then entered into a spreadsheet with their English glosses and parts of speech. If there appeared to be a base form for the token, then that was entered along with its gloss. All tokens were then categorized according to the form of reduplication exhibited and any phonological notes, such as assimilation or vowel change, were noted as well. The full corpus of all reduplicated forms is available in Appendices B and C.

2 The Sora language & people

2.1 The Sora people

The Sora language is also known as So:ra:, Saora, or Savara and is spoken by the tribal people of the same name in eastern India. There are an estimated 452,000 members of the Sora tribe (Vitebsky 1993), although Ethnologue (Lewis 2009) estimates that

number of Sora speakers is around 310,000. The Sora live primarily in the state of Orissa, located on the far east of the Indian subcontinent on the Bay of Bengal. However, many Sora are located in the neighboring state of Andhra Pradesh. Within Orissa, the Sora live primarily in the hills of the Rayagada, Koraput, Ganjam and Gajapati Districts, located in the southern portion of the state. Likewise, the Sora in Andhra Pradesh live in the northern-most Srikakulam District, bordering the Gajapati District in Orissa.

According to Vitebsky (1993), the Sora people inhabited these regions long before the arrival of the Aryan or the Dravidian peoples. Furthermore, he asserts that the Sora people are closely related to the peoples of Southeastern Asia, both historically and culturally, which is corroborated linguistically.

The Sora people living in the hills of these regions have a rich history of interaction with their environment. Although historically a hunter-gatherer people, the Sora have also traditionally practiced shifting cultivation (Vitebsky 1993). Recently, however, Vitebsky notes that the Sora have adopted newer Western agricultural developments. The Sora life is centered around agriculture with villages on the hill peaks along rivers to irrigate their paddy fields, and keeping with shifting cultivation the villages are traditionally semi-permanent and move with the agriculture (Vitebsky 1993). Surrounding the fields and villages the hillsides are well-forested despite a growing trend for deforestation in tribal India.

Culturally and religiously, the Sora people have maintained their distinct, traditional culture against the growing pressure to adopt Hinduism from the Indian majority or Christianity from European missionaries. The Sora practice an animistic religion that emphasizes the role and mobility of the human soul as well as the presence

and influence of evil spirits in every day life (Vitebsky 1993). Furthermore, Sora culture differs drastically from the Hindu norm with its clear rejection of a caste system. The Sora villages are organized around the family unit and the society is strictly exogamous.

2.2 The Sora language

2.2.1 Introduction to the language

Sora is a Munda language, a group of Austro-Asiatic languages primarily located in eastern India. Along with the endangered Gorum, Sora comprises half of the Savara sub-branch, within the South Munda branch, which includes Juang, Mundari, Gutob, Remo, and Gta (Anderson 1999). While Sora speakers reported awareness of regional differences in language, no previous studies in Sora dialectology have illustrated clear geographical dialectal differences (Anderson & Harrison 2008). Unlike the critically endangered Gorum, Sora is not at immediate risk for extinction. However, as with Gorum, a shift in adopting the majority languages Oriya and Telugu is occurring among the Sora people (Anderson & Harrison 2008).

Sora is primarily solely a spoken language, although some efforts have been made to develop a writing system. The most successful effort has been in using the Telugu script, although efforts have also been made to adopt the Oriya and Latin scripts as well as the creation of the Sora Sompeng script (Lewis 2009). Most of the efforts have been based in translating the Christian Bible into Sora and have little use outside of religious contexts (Anderson & Harrison 2008). For the purposes of this paper, I will present Sora data using the Latin script. For data collected in Harrison's lab, I will use IPA. However, for data from Ramamurti's (1933) dictionary, I will maintain his transcription standards which differ minimally from IPA, chiefly in the utilization of ⟨j⟩ for the affricate [dʒ] as

well as the lack of representation of retroflex sounds in Sora. See Appendix A for a full comparison of Ramamurti to IPA.

2.2.2 Phoneme inventory

In order to fully understand the phonological properties of reduplication in Sora, I have presented a phoneme inventory for Sora. I propose that the sounds below are all phonemes, with the possible exception of /j/ and /w/ which are different representations of the vowels /i/ and /u/ respectively. From this inventory, we see that Sora exhibits richness in the plosives and nasals, with these stops across many places of articulation. This contrasts drastically with the fricatives, in which we only see only one phoneme /s/ except in rare cases of loans words like /bazara/ ‘market’ from Persian /ba:za:r/.

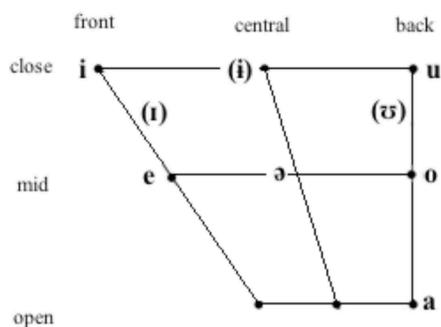
Figure 1: Sora phoneme inventory

	Bilabial		Alveolar		Retroflex		Palatal		Velar		Glottal	
Plosive	p	b	t	d	ʈ	ɖ			k	g	ʔ	
Fricative			s									
Nasal	m		n				ɲ		ŋ			
Trill			r									
Lateral			l									
Approximant	(w)						(j)					
Affricates			dʒ									

The proposed phoneme inventory proposed above is based upon my work on the data collected by K. David Harrison, Gregory Anderson, and their team in Orissa from 2007-2011. However, it is key to note that this inventory contrasts with existing proposals. Firstly, the inventory proposed above contrasts with Ramamurti’s (1933) system, chiefly with regards to retroflex, which Ramamurti does not transcribe. However, it is paramount to note that Ramamurti was presenting an orthographical system for his dictionary and not a phoneme inventory.

Unlike the consonant system, the vowel system of Sora presents few disparities. Ramamurti (1933), Harrison & Anderson (2008), and I agree that Sora presents a simple six vowel system, with /i e a o u ə/.

Figure 2: Sora vowel system



In addition to the six vowels /i e a o u ə/, we also see three additional vowels in parentheses on the chart. I use the central close vowel /i/ in transcriptions from Harrison's lab when the vowel is clearly distinct from the close front /i/ and mid-central /ə/. Ramamurti uses the symbol for the close-mid front vowel /ɪ/, when small distinctions are apparent between the token and the standard pronunciation of the high front /i/. Likewise, he uses the symbol for the close-mid back vowel /ʊ/ in cases in which small distinctions occur between the token and the standard articulation of /u/. However, the occurrence of these additional vowels represent only a small portion of Sora vowel articulation.

2.2.3 A Brief comment on morphology in Sora

The Sora language is morphologically rich, abundant not only with reduplication, as we have seen, but also with affixation and noun incorporation (Harrison 2007; Anderson & Harrison 2008). All Sora verbs can incorporate nouns and nouns can incorporate other nouns. Sora verbs bear many suffixes, depending on person and number. Likewise, Sora adjectives and adverbs bear suffixes, as do most Sora nouns.

Particular note must be made of the nominal suffix /-n/ or /-ən/. Anderson and Harrison (2008) note that the /-ən/ does not act like a traditional case marker as it can be suffixed to any noun in any case. In fact, it is uncommon for any noun to not bear the nominal suffix /-ən/; all nouns in Ramamurti (1933) bear the suffix and the vast majority of the soundfiles analyzed in the lab were elicited with the suffix. Thus, in this paper, I will not treat the suffix /-ən/ in the same way as other suffixes and I will treat reduplicated forms bearing this suffix as fully reduplicated regardless of the fact that the suffix /-ən/ is not reduplicated.

3 The Theory of reduplication

3.1 Reduplication

Repetition in language is nearly universal cross-linguistically (Rubino 2011), whether that be repetition of words, phrases, or segments. However, in this paper, I will focus on a specific form of repetition, namely reduplication, or repetition within a word. Reduplication, also near universal cross-linguistically, can take many forms: it can be full (3a) or partial (3b). It can be faithful, also referred to as simple (Rubino 2011), in both segments (3a-b) or non-faithful, also referred to as complex (Rubino 2011), as in (3c) or it can use a fixed segment (3d). Reduplication can, although rarely, be repeated a second time, yielding triplication (3e).

- | | | |
|--------|----------------|---|
| (3) a. | durru-'durru | 'hurriedly, in confusion' |
| b. | ɲe-ɲeɲ | 'nerve; vein; tendon' |
| c. | bə'riŋ-bə'ra:ŋ | 'to dazzle' |
| d. | 'so:ra-'mo:ra | 'the Sora people and other peoples like them' |
| e. | kur-kur-'kur | 'the cooing of the doves' |

(Ramamurti 1933)

In (3a-e), we see the very different forms that reduplication can take. Additionally, it has been noted that all attested languages that demonstrate partial reduplication also demonstrate full reduplication (Rubino 2011; Moravcsik 1978). All of the example tokens in (3) are taken from Sora and they appear to have very different patterns. However, ultimately the goal of this paper is to show that they can all be explained and derived through very similar processes and models.

It is also important to note that both phonological and morphological processes are occurring simultaneously in reduplication in (3a-e). Reduplication is perhaps one of the most enlightening phenomena in examining the interface between phonology and morphology because the two are inseparable. Because of this reduplication is often treated morphologically as an abstract morpheme, typically an affix of some kind, whose placement in a word determines its phonological properties.

However, there exist some forms of reduplication that appear to be solely phonological. That is, a segment of the word is repeated solely to satisfy phonological constraints of the language. This is the case in Hausa where the plural suffix copies the final consonant of the root due to onset constraints and Newman (2000) has referred to this specific form of phonological reduplication as *pseudoreduplication*. Urbanczyk (1998) refers to a similar phonological constraint driven reduplication as *non-reduplicative copying*. Yu (2005) examines this form of phonological reduplication cross-linguistically which he terms *compensatory reduplication*, defined as phonologically local and serving only a phonological purpose. Yu (2005:397) describes *compensatory reduplication* as “reduplication [with] no obvious semantic import” in contrast with

semantically-salient morphological reduplication. This is an overgeneralization often made with concern to morphophonological reduplication.

While the distinction between purely phonological reduplication and morphophonological reduplication is clear, it should not be made on semantic grounds. Phonological reduplication, or *pseudoreduplication* (Newman 2000) or *non-reduplicative copying* (Urbanczyk 1998), occurs for solely phonological reasons and it appears to be true that it carries no semantic implications. However, it is also the case that not all *true* reduplication is semantically salient. Many forms of reduplication are not productive but also do not exist solely to satisfy phonological constraints. In *non-productive reduplication*, the base may not exist as a unique lexical item and the process of reduplication does not consistently imply the same semantic information, like iteration or intensity. Much existing theory focuses too heavily on solely semantically productive forms of reduplication and ignores the non-productive forms. I do not believe that this distinction is necessary. Any theory of reduplication should be able to account for all productive and non-productive cases of reduplication and any theory of cross-linguistic reduplication should address non-productive forms in addition to productive ones.

Productive or not, morphophonological reduplication involves some form of an abstraction of the reduplicant in the underlying structure. This is often satisfied by treating the reduplicant as some sort of phonetically undefined affix. Many theories have termed this reduplication affix RED as it can't be referred to by any constant phonemic properties. This affix is controlled by the model or language-specific rules as to where it is placed and what it reduplicates, i.e. whether it's a prefix, suffix or affix. Furthermore, model-specific or language-specific rules determine whether it's full, partial, or non-

faithful reduplication. However, many recent theories have rejected the idea of treating reduplication as a phonetically null affix and have proposed various ways for deriving reduplication in a non-affix based system.

In the following section, I will introduce three existing models of reduplication and show how each model explains how and where reduplication occurs. I will then comment on their shortcomings and ultimately select one model to apply with regard to reduplication in Sora in Chapter 4.

3.2 Optimality Theory and reduplication

Optimality Theory (OT) is a linguistic model proposed to explain how observed language is generated by a system of interacting, ranked constraints, which at their core represent the binary between faithfulness and well-formedness (Prince & Smolensky 1993). OT is distinct from other models in that it is comparative and inherently typological (McCarthy 2003). The OT model allows for language specific rankings, but language universal constraints, supporting the Chomskyan concept of Universal Grammar. The OT model has primarily been applied to phonology, but can also be extended to other aspects of language as well (McCarthy 2003), like morphology, which will be discussed here in tandem with phonology in a discussion of reduplication.

With concern to morphology, OT plays a particularly important role in affixation and reduplication in this model is considered a form of affixation. In this model, reduplication exists as an abstract affix RED, which can be prefixed, suffixed, or infix. The location of the morpheme RED determines what part of the word is reduplicated. And OT determines the location of RED due to the interaction of alignment constraints (McCarthy 2006). Prefixation is defined in OT by McCarthy (2006:308) as:

[A] constraint requiring that the left-edge of an affix align with the left-edge of a word ($\text{ALIGN}(\text{Afx}, \text{L}; \text{Wd}, \text{L})$) or a constraint requiring that the right-edge of an affix align with the left-edge of a root ($\text{ALIGN}(\text{Afx}, \text{R}; \text{Root}, \text{L})$).

Suffixation follows when the affix is required to align with the right-edge of the word through similar constraints and infixation requires root-based alignment rules. However, McCarthy (2006) also shows that infixation often occurs when a violation of affix alignment occurs, which will be shown below.

OT rules for affixation and reduplication thus allow for a model that is dynamic and flexible. For example, McCarthy (2006) illustrates how the OT model allows for this flexibility in Timugon Murut, which demonstrates a unique pattern of reduplication that appears to be prefixation at times and infixation at others.

- (4)
- | | | | |
|----|---------|-------------|-----------------------------|
| a. | bulud | bu-bulud | ‘hill’; ‘ridge’ |
| b. | limo | li-limo | ‘five’; ‘about five’ |
| c. | abalan | a-ba-balan | ‘bathes’; ‘often bathes’ |
| d. | ompodon | om-po-podon | ‘flatter’; ‘always flatter’ |
- (McCarthy 2006:308)

Initially, the reduplication in (4a) and (4b) appears to be of a different form than (4c) and (4d); and in most models of reduplication that use language specific parameters they would be treated as different as forms. However, if we analyze these forms under OT, ranking affixation and other language specific constraints, we see that they can be derived from the same ranking of constraints. In Timugon Murut, we rank two simple constraints: ONSET, which disfavors syllables without onsets, and $\text{ALIGN}(\text{RED}, \text{L}; \text{Wd}, \text{L})$ which prefixes the affix.

Tableau 1: ONSET >> $\text{ALIGN}(\text{RED}, \text{L}; \text{Wd}, \text{L})$

/RED + <i>abalan</i> /	ONSET	ALIGN
☞ a-ba-balan	*	*
a-abalan	***!	

(McCarthy 2006:308)

As we see in the Tableau 1 above, the ranking of phonological and morphological rules explain a phenomenon which would require multiple parameters and models in other systems, however OT allows for a single, consistent ranking of constraints.

Furthermore, we see in Prince and Smolensky's (1993) seminal work on Optimality Theory that the interaction of ranked constraints in a language can determine what segment of the base is reduplicated. In Chamorro, again the ranking of two simple constraints explains what segment is reduplicated in the language, here with suffixing reduplication. Similar to in Timugon Murut, reduplication in Chamorro is licensed by the interaction of ALIGN(RED, R; Wd, R), which favors suffixation, and, in contrast with Timugon Murut, -CODA, which disfavors syllables with codas.

Tableau 2: CODA >> ALIGN(RED, R; Wd, R)

/RED + /met,got/	-CODA	ALIGN
met-go-got	**	*
met.got-got	***!	

(Prince & Smolensky 1993)

In Chamorro, like Timugon Murut, we see that OT can explain in one consistent ranking of constraints what would require multiple rules and parameters under different models.

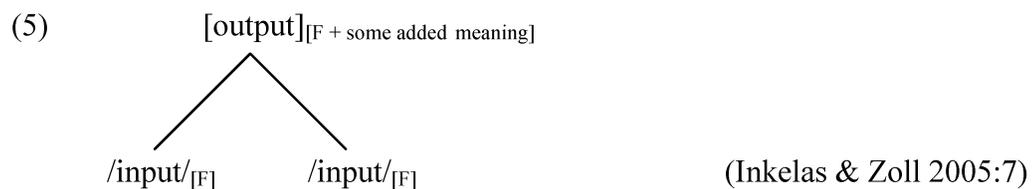
Looking at McCarthy (2003, 2006) and Prince & Smolensky (1993), we see that Optimality Theory can successfully derive multiple forms of reduplication cross-linguistically as well as multiple forms of reduplication within a single language, sometimes with the same rules as we saw in Tableaux 1 and 2. Treating reduplication as an affixed morpheme RED, OT neatly allows for the interaction of phonological and morphological rules, a critical interaction in reduplication, which can be seen as the quintessential interface between morphology and phonology.

Through this explication of Optimality Theory, we have seen that this model can effectively account for many observed forms of reduplication cross-linguistically, which it does effectively and efficiently. However, I will turn toward two rule-based models of reduplication and compare them to Optimality Theory and its treatment of reduplication as phonetically null affix RED.

3.3 Morphological doubling model

The morphological doubling model was proposed by Inkelas and Zoll (2005) as an entirely new approach to reduplication. As the name suggests, this model accounts only for morphological reduplication, while purely phonological reduplication, or *pseudoreduplication*, cannot be derived by this model.

The morphological doubling model proposes that reduplication results from the compounding of two semantically equal constituents, thus rejecting the idea of a phonetically null affix RED (Inkelas & Zoll 2005). Two semantically equal and phonemically identical constituents are then compounded, although one or both of the constituents can be phonologically modified during the process. Inkelas and Zoll's model of morphological doubling can be seen in (5):



The basic structure of the morphological doubling model above illustrates that the two separate yet identical sisters are compounded to form a single output. This contrasts with most existing theories because it rejects the notion of a single input that is then copied and possibly altered through morphophonological processes. This model can be expanded

upon to illustrate the model's capability and inherent need to address syntax, semantics, and phonology in any case of reduplication.

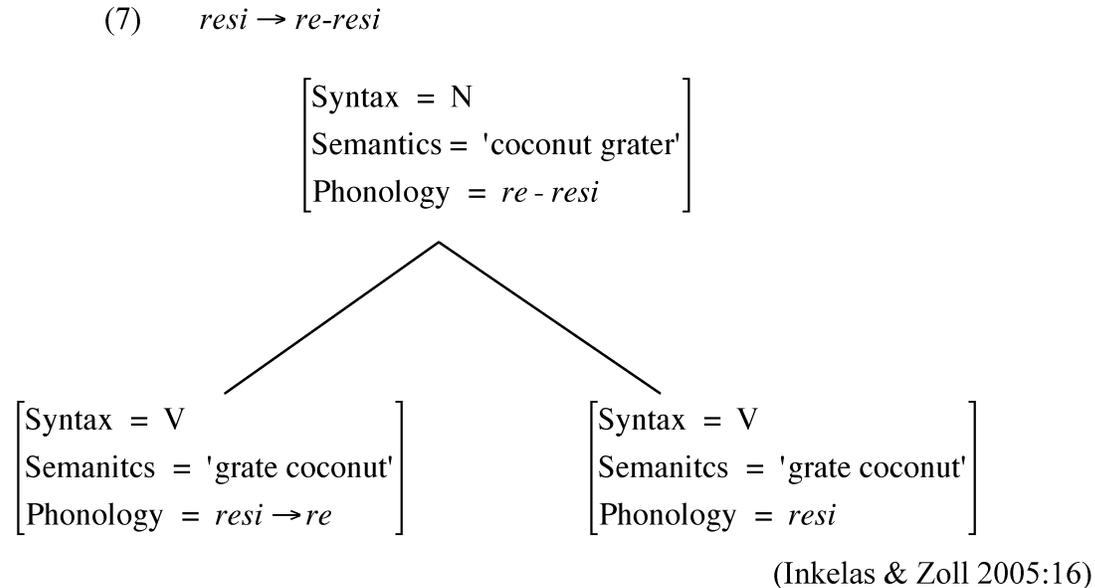
$$(6) \quad \begin{array}{c} \left[\begin{array}{l} \text{Syntax} = Y \\ \text{Semantics} = Q \\ \text{Phonology} = g(P_{X_1}, P_{X_2}) \end{array} \right] \\ \swarrow \quad \searrow \\ \left[\begin{array}{l} \text{Syntax} = X_1 \\ \text{Semantics} = \text{Sem}_{X_1} \\ \text{Phonology} = P_{X_1} \end{array} \right] \quad \left[\begin{array}{l} \text{Syntax} = X_2 \\ \text{Semantics} = \text{Sem}_{X_2} \\ \text{Phonology} = P_{X_2} \end{array} \right] \end{array}$$

In (6), we see my generalization of their model. In the output, we see that syntax can be modified from that in the input, although this is usually not the case. We see that semantics have changed due to the reduplication, which can reflect plurals, intensity, etc. And the phonology reflects the concatenation of the two phonologies of the sisters, if no truncation or alteration occurs at the input level.

Inkelas and Zoll (2005) describe their model as a *construction*. A construction can be any morphological rule that combines two sisters to form a single constituent, like affixation or compounding (Inkelas & Zoll 2005). Unlike other models of reduplication, treating reduplication as construction allows us to treat it in a similar way that we would treat compound nouns in English, where two distinct morphemes, like 'book' and 'case' are concatenated to form a single output 'bookcase.'

This construction model works very well for some languages with productive and consistent reduplication. One example that Inkelas and Zoll (2005) give is reduplication in Banoni. In Banoni, partial reduplication of verbs creates a nominal instrument of that

verb. For example, *resi* ‘to grate coconut’ when partially reduplicated yields *re-resi* ‘coconut grater’ as we can see in (7):



The construction for morphological doubling in (7) yields the syntactic, semantic, and phonological structure desired in Banoni, yet it does so somewhat arbitrarily.

The model of morphological doubling is only a model of reduplication in that it describes the same phenomenon as reduplication. However, there is no true reduplication because no segment of the base is being copied because there is no single base. This seems to work well with examples like Banoni where concatenation of two verbs consistently yields a noun, but this does not work in any non-productive or semantically inconsistent model of reduplication. In many languages, reduplicated forms exist where the base does not, so taking two arbitrary lexemes and concatenating them to form the observed construction is fruitless since the bases do not exist individually with their own syntactic or semantic information. Furthermore, the application of truncation to either the first or second sister to explain prefixing or suffixing partial reduplication is arbitrary in its application and does not sufficiently describe the phenomenon of partial reduplication.

Thus, while a unique and novel model for reduplication, the morphological doubling model is not a practical cross-linguistic model and certainly not a practical model to apply to languages like Sora that champion non-productive reduplication.

3.4 Precedence relations model of reduplication

Like Inkelas and Zoll's model of morphological doubling, Raimy's (2000) model of precedence relations is a unique and innovative approach to reduplication. Raimy (2000), in contrast with existing theory, like McCarthy and Prince (1995), treats reduplication not as a microcosm for phonology, but rather as an interaction between phonology and morphology. Furthermore, Raimy (2000) asserts that his model is universal without resorting to language-specific mechanisms.

Raimy's model of precedence loops is a simple, yet fundamentally new approach to reduplication. The core of his proposal centers on the idea of a loop in the underlying structure which correctly and consistently yields the observed language.

$$(8) \quad \# \rightarrow k \rightarrow \text{æ} \rightarrow t \rightarrow \% = [\text{kætkæ}] \quad (\text{Raimy 2000:1})$$

In (8), we see Raimy's model at its simplest: full, faithful reduplication. The symbol $\langle \# \rangle$ represents the beginning of the representation while $\langle \% \rangle$ represents the end and each $\langle \rightarrow \rangle$ indicates precedence. The larger arrow beneath serves in the same way as the symbol $\langle \rightarrow \rangle$ to indicate precedence, creating the idea of a precedence loop. Thus “# precedes k” and “k precedes æ” and so on, until ultimately, due to the precedence loop, “t precedes k.” Thus, Raimy's model allows for an interactive, abstract representation of the underlying morphophonological structure before linearization. In (8), we see from following the arrow of the loop, that the reduplication loop yields full reduplication [kætkæ] because it encompasses the entire base; the loop begins at the last segment /t/ of the representation

and continues at the first segment /k/. In this model, each arrow of precedence is used minimally, regulated by the economy condition, prohibiting such outputs like [kætkætkæt] or [kætkætkætkæt...]. Moravcsik (1978) illustrates the cross-linguistic pertinence of economy constraints in which a dictated number of repetitions occurs, generally once though occasionally twice yielding triplication.

While I've stressed the novel nature of Raimy's (2000) model of precedence relations, it is also important to see it in connection to other approaches. Most importantly, Raimy treats reduplication as any other morphological process and, following the work of Prince and Smolensky (1993) and Noyer (1997), Raimy approaches morphological processes as structure building. Thus, Raimy's approach to reduplication is consistent with other approaches in that at its core it is purely morphological concatenation; reduplication acts in the same way as other forms of affixation. Raimy's model thus derives other forms of affixation, like prefixation in (9), and allows for the concatenation of different morphological processes.

$$(9) \quad \begin{array}{c} \# \rightarrow l \rightarrow a \rightarrow k \rightarrow \% \\ \downarrow \quad \uparrow \\ \Lambda \rightarrow n \end{array} = [\Lambda n l a k] \text{ 'unlock'} \quad (\text{Raimy 2000:69})$$

In (9), we see that a prefix is added to a free morpheme following the same system of precedence relations as reduplication, with the obvious lack of a precedence loop. In (10), we see Raimy's typology of different morphemes and their treatment within the precedence relations model with their precedence variables clearly defined.

(10)	<i>type</i>	<i>beginning</i>	<i>end</i>	
	free	# →	→ %	
	prefix	# →	{ # → __ }	
	suffix	{ __ → % }	→ %	
	other	{ X }	{ Y }	(Raimy 200:67)

In (10), we see the differences in treatments between morphemes, with ‘other’ encompassing reduplication and infixes. Free morphemes simply have a beginning and an end, leading to linearization. Prefixes have a specified beginning but a variable end, as we see if we return to (9): /lak/ is a free morpheme, as it simply begins at # and ends at % while /ʌn/ is a prefix as it begins at # but ends at prescribed start of the free morpheme. Suffixes mirror prefixes in that they have a variable beginning but a specified end. Infixes have both variable beginning and ending points, with the beginning precedence variable preceding the ending precedence variable. Reduplication works inversely, as the beginning precedence variable temporally follows the ending precedence variable. Thus if turn back to (8), we see that /kæt/ is a free morpheme while reduplication is a precedence loop that beginning at /t/ and ends /k/, which temporally precedes its starting point.

Raimy’s model is clearly dynamic, as specifying a different beginning variable and different ending variable will generate other forms of reduplication in addition to full, faithful reduplication.

- (11) a. # → k → æ → t → % = [kætkæt]

- b. # → k → æ → t → % = [kætæt]

- c. # → k → æ → t → % = [kækæt]


As we see (11a-c), by specifying different beginning and ending variables, the model will yield different results. In (11a), we see the full, faithful reduplication we saw in (8), yet in (11b-c), we see partial reduplication as different beginning and ending variables were specified. However, it is crucial to note that each of these cases of reduplication uses the

same model of precedence relations, with (11a) generating full reduplication, (11b) generating partial, ‘suffixing’ reduplication, and (11c) generating partial, ‘prefixing’ reduplication. As most models, like OT, need to distinguish between prefixing and suffixing reduplication, Raimy’s model does not. We can see full reduplication utilizes the environments of both prefixation and suffixation, and while partial reduplication precedence loops appear to favor either prefixation or suffixation environments, no differences in model are required to derive these ultimately similar phenomena.

Furthermore, Raimy’s model of precedence relations can generate other forms of reduplication like fixed segment reduplication, by treating the fixed segment as a kind infix within a precedence loop.

$$(12) \quad \# \rightarrow k \rightarrow \text{æ} \rightarrow t \rightarrow \% = [\text{kætbæt}]$$

In (12), we see that only different in this model, is that phonological information /b/ has been added in addition to reduplication. Thus, fixed segment reduplication can be treated with the same model as all other forms of reduplication, with the fixed segments embedded in partial reduplication precedence loops.

In addition to deriving most forms of reduplication with a single model, the precedence relations model is also innovative and laudable for that which its name implies, the idea of precedence relations. The precedence model is able to explain complex phenomena in phonology that occur in conjunction with reduplication due to the nature of the precedence loop. In particular, the precedence relations model explains backcopying that occurs in some instances of reduplication. For example, Raimy (2000) presents an analysis of reduplication and backcopying in Malay to give explanation to a

phenomenon unaccountable in previous models. In Malay, nasalization spreads rightwards. However, in instances of reduplication, it initially appears to spread leftwards.

- (13) a. hamẽ ‘germ’ hãmẽ-hãmẽ ‘germs’
 b. aŋẽn ‘wind’ ãŋẽn-ãŋẽn ‘unconfirmed news’
 (Raimy 2000:16)

In the base forms of (13a-b), we see the expected rightward spreading of nasalization. However, in the reduplicated form, we see what initially appears to be leftward spreading as well. However, if we examine the reduplication under Raimy’s precedence model, we see that this phenomenon is accountable and explicable.

- (14) # → a → ŋ → e → n → % = [ãŋẽn-ãŋẽn] (Raimy 2000:16)
- 

Examining the model of precedence loops, we see that the nasalization of the word initial /a/ is licensed because within the precedence loop it is preceded by the word final /n/ even though in its linearized form it is not preceded by /n/. Raimy (2000:54) explains this innovation of the precedence relations as:

Whenever there is a loop in a phonological representation, the beginning and end of the loop will have segments that occur in multiple environments. Segments appearing in multiple environments allow a new and deeper understanding of the interaction between phonological rules and reduplication.

Thus, the truest innovation of the precedence relations model is realized in examining previously inexplicable phenomena like backcopying.

3.5 Summary of models

The precedence relations model proposed by Raimy (2000) is rule-based, simple, and universal. Unlike Inkelas and Zoll (2005), Raimy’s model is equally applicable to

semantically productive and non-productive cases of reduplication. And, while being able to see reduplication as a form of morphological concatenation, it does necessitate a phonologically null morpheme RED like Optimality Theory. Furthermore, the precedence model is capable of deriving multiple forms of reduplication through a single model, simply in which the beginning precedence variable and ending precedence variable must be specified. And finally, the precedence relations model most aptly and accurately accounts for phonological and morphological processing occurring before linearization.

Thus, as I move forward in my examination of reduplication in Sora I will use Raimy's (2000) model of precedence relations. Although it does not appear to be the case that complex processes like those in Malay are present or clarified through precedence relations in Sora, the precedence relations model is the most universal and thus, by using it, I propose that reduplication is a consistent cross-linguistic phenomenon that can be described through a single model. Furthermore, I hope that by using it I can add Sora to the linguistic dialogue on reduplication models. Ultimately, I will examine Raimy's model to see if it can account for the varying forms of reduplication present in Sora. If necessary, I will comment on its shortcomings and propose alterations where necessary.

4 Reduplication in Sora

In a study of reduplication, Sora is noteworthy not only for the sheer amount of reduplication that is present in the language, but also for the range of the forms of reduplication that can occur in the language. In previous studies of reduplication, different models and mechanisms have been required to derive the proper surface representations of different forms of reduplication. I propose in this section that each of

the different forms of reduplication can be derived by Raimy's (2000) model of precedence relations, as we see in (15):

- (15) a. begin → end
 begin: __ → %
 end: # → __
- b. # → X ... X → %
 ↖ ↗
- c. # → g → e → % = ge-'ge 'to be entangled, ensnared'¹
 ↖ ↗

In (15), we see that the base is entered into the precedence loop and repeats itself. Thus the base is both preceded and followed by itself. As we saw in section 3.4, this model can be manipulated by altering the beginning precedence variable and the ending precedence variable, thus accounting for all forms of reduplication present in Sora: full, partial, fixed segment and unfaithful reduplication. In addition, I propose that it can also derive triplication and a form of reduplication that I have termed ordered reduplication, which will be explored at the end of this section, however, for these forms it will require slight modifications.

All examples in this section are taken from Ramamurti (1933) and my work in Harrison's lab (Anderson et al. 2011). Examples taken from Ramamurti will be marked with superscript 1 and those from Anderson et al. will be marked with a superscript 2. A full listing of both corpora can be found in Appendices B and C.

4.1 Full Reduplication

Full reduplication is perhaps the simplest and most basic form of reduplication present in Sora and requires no changes to our model (15). We simply see that beginning precedence variable is set as the coda and the ending precedence variable is set as the

onset, reduplicating the entire base. This phenomenon is seen with monosyllabic bases, as we see in (16-18):

- (16) ku-'ku 'to cough'²
 (17) kur-'kur 'to gnaw, to bite'¹
 (18) meʔ-'meʔ 'breast'²

We see that monosyllabic reduplication can occur in a CV pattern, as in (15c-6) or a CVC pattern as in (17-18). Multiple syllables do not present any challenge to the precedence relations model, as the beginning precedence variable is still the coda and the ending precedence variable is still the onset. Thus, full reduplication is not only possible, but also very common, with disyllabic bases, as we see in (19-22):

- (19) lijur-'lijur 'to glitter, to glow'¹
 (20) boŋi-'boŋi 'further to the rear'¹
 (21) kalik-'kalik 'glitter'²
 (22) pore-'pore 'crooked, bent'²

Despite the capability of the model, full reduplication does not appear to be common in bases with greater than two syllables; a few counterexamples were found, but each involved ordered reduplication and will be discussed in section 4.6.3. It thus appears to be the case that other phonological constraints limit multisyllabic reduplication, because although the model can easily derive these forms, they do not occur in Sora.

Thus, our current model can account for all cases of faithful full reduplication in Sora as we see in (15-22), simply by beginning the precedence loop at the last segment of the base and ending the precedence loop at the first segment of the base.

4.2 *Partial Reduplication*

Partial reduplication, as we saw in section 3.4, is similar to full reduplication in that the base is placed through a precedence loop. The only difference is the placement of the precedence loop; while the precedence loop for full reduplication began at the last segment and ended with the first segment, for partial reduplication only a portion of the base is reduplicated through the precedence loop, as we see in (23):

(23) # → k → e → d → % = ke-'ked 'male genitals'¹


As we see in (23), partial reduplication is derived by a reassignment of beginning and/or ending precedence variables.

Looking at this model (23), we might assume that reduplication is prefixing in Sora, keeping with other models of reduplication that require the specification of either prefixing or suffixing reduplication.

Applying this model to the full range of partial reduplication in Sora, we see that it can be applied to monosyllabic bases in (24-25):

(24) ju-'jum 'ancestor'²

(25) bo:-'bo:d 'to besmear'¹

We can extend this model to disyllabic bases, in which the first syllable is reduplicated, as in (26-27):

(26) ta-ta'laj 'sister's son'²

(27) gi-gi'naŋ 'to scratch'²

However, we can also extend this model to disyllabic bases, in which the second syllable is reduplicated, as in (28-29)

(28) pura-'ra 'heart'²

(32) lii:r ‘soon’¹

Tokens like (32) suggest that reduplication of the vowel can occur in Sora and that it would not occur systematically in those tokens which Ramamurti glosses with long vowels.

However, there is a different form of vowel reduplication in Sora that involves a similar process, as we see in (33-35):

(33) daʔa ‘water’²

(35) dʒiʔi: ‘tooth’²

(36) soʔo ‘bad smell’²

In (33-36), we see tokens with glottally interrupted vowels, which require the reduplication of the vowel so that it occurs both preceding and following the glottal stop. However, my reader may notice that the tokens provided above all came from the laboratory, as Ramamurti glosses them as:

(37) dʔa: ‘water’¹

(38) ɟʔi: ‘tooth’¹

(39) sʔo: ‘rotten; foul-smelling’¹

Initially, I believed that this might have been a form of pseudoreduplication in which a CV words underwent a phonetic process to occur in CVʔV form at surface structure. However, consulting Ramamurti (1933), we do see few CV: tokens, although they are all verbs which implies that in conjugated forms they would be more complex than a simply CV: structure. Furthermore, we see that the glottal stop is presumably not part of the base. We see this contrast in (40-41):

(40) d(a)ʔa: ‘water’^{1,2}

(41) da: 'to water, to irrigate'¹

This suggests that the /ʔ/ enters the lexeme through some phonological process, suggesting that a precedence loop for pseudoreduplication might be plausible as we see in

(42):

(42) # → d → a → % = daʔa 'water'²

In (42), we see a suggestion of what pseudoreduplication may look like in Sora. However, we find that this may not exist due to solely phonological processes because we find the CVʔV constructions followed by suffixes or within the middle of a morpheme. Perhaps the best method to address this form of reduplication is to treat it as a form of fixed segment reduplication, which will be addressed in section 4.4. More research on this interesting phenomenon could shed light on reduplication and phonological constraints in Sora.

4.3 Reduplication with Affixation

As I mentioned briefly in Chapter 2, affixation and noun incorporation in Sora is incredibly prolific. It follows then that affixation and/or noun incorporation can occur with reduplicated forms. This presents no complications to our model, as we saw in section 3.4; we simply have to include the affix before or after the precedence loop so that it is included between the starting point # and the ending point %.

Generally, we see affixation with fully reduplicated forms, as in (43-44) but it is possible with partial reduplicated forms as well, as in (45-46):

(43) paŋe-paŋe-ga:m-le 'in a wheezing manner'¹

(44) al-lo-'lo 'to employ labourers to rake the clearing'¹

(45) ʒʊ-'ʒʊn-ʒi 'ancestor-pl'¹

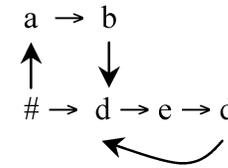
(46) pa-par-ən 'grasshopper-n'²

In (43), we see full reduplication with the suffix /ga:m-le/, meaning 'in that manner.' In (44), we see full reduplication with the prefix /al/ which makes a verb causative. In (45), we see partial reduplication with the plural suffix /dʒi/ and in (46) we again see partial reduplication with the nominal suffix /-ən/.

As we see above, affixation is perfectly grammatical in conjunction with reduplication in Sora. I will briefly present a model for prefixation and suffixation to illustrate how they are included within our model of reduplication.

4.3.1 Reduplication with prefixation

With prefixation, we simply have to add the prefix into the precedence model, as we can see in model (47):

(47)
$$\begin{array}{c} a \rightarrow b \\ \uparrow \quad \downarrow \\ \# \rightarrow d \rightarrow e \rightarrow d \rightarrow \% \end{array} = ab-ded-'ded \text{ 'to shake one's head'}^1$$


In (47), we see that the model has a beginning precedence variable at # and ending precedence variable at the first segment of the free morpheme base. The precedence loop is simply added in after the prefix, with its beginning precedence variable at the last segment of the base and its ending precedence variable at the first segment. In this model, the prefix is shown above the base and the precedence loop below it; this holds no theoretical significance, but has been done so for aesthetic purposes to keep the affixation clearly distinct from the precedence loop.

In Sora, there are three main prefixes that occur with reduplication /ab/ /al/ and /er/. The former two often make the base verb causative, but it is important to note that

(52) jakkum-'jakkum-ga:m-le 'in a hopping manner'¹

(53) lagir-'lagir-ga:m-le 'like the sound of thunder'¹

Other suffixes include /dəm/, as we see in (54-55) which changes the original syntactic class to an adjective.

(54) da-'da'dəm 'firm, strong'¹

(55) ge-'ge-dəm 'difficult, unpassable'¹

Clearly, suffixation is grammatical and prevalent in Sora and is easily derivable with our model of precedence relations.

4.3.3 Reduplication with noun incorporation

In addition to suffixation, Sora favors noun incorporation into nouns and verbs (Harrison 2007; Anderson & Harrison 2008). Again, noun incorporation can be treated in the same way as suffixation, with the incorporated noun following the precedence loop. The only difference is that here the added information is a free morpheme in contrast to the suffixes we saw in section 4.3.2.

The most common incorporated noun is /mar/ meaning 'man,' which agentizes any verb, as we see in (56):

(56) gar-gar-'mar-ən 'beggar'¹ (gar-gar = to beg)

The incorporated noun acts in a suffix-like manner because while an independent lexical item in the language, the incorporated /mar/ changes the syntactic class of the reduplicated item.

Likewise, some incorporated nouns are required in ethnobiological terms, reduplicated or not. We see that the vast majority of trees have an incorporated /ne:b-ən/ 'tree, lit. that which grows.' We can see examples of this in (57-58):

- (57) mur-mur-ne:b-ən ‘a kind of timber tree’¹
 (58) sim-sim-ne:b-ən ‘a kind of fir tree’¹

Other common incorporated nouns are /ber/ meaning ‘word’ as we see in (59) and body parts, like /mu/ ‘nose’ as we see in (60):

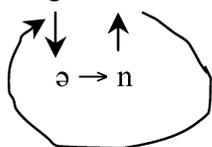
- (55) jid-jid-ber ‘to chatter incoherently’¹
 (60) po:-po:-'mu ‘have a sunken nose’¹

However, despite the trends for certain nouns being incorporated frequently, there are not limitations on the nouns that can be incorporated, as we can see in (61-62):

- (61) ba:-l-ba:-l-'jo-n ‘grilled fish’¹
 (62) ba:-l-ba:-l-'bo:ŋ-ən ‘roasted buffalo’¹

4.3.4 Reduplication and infixation

In addition to the prefixation, suffixation, and nominal incorporation that we see in Sora, we also see infixation in reduplication. There are two underlying infixes that can be added to a reduplicant and it appears that a constraint exists allowing infixation to only operate in conjunction with full reduplication. Infixation in reduplication is again easily derived in our model of reduplication by adding the infix within the precedence loop, as we see in (63):

- (63) # → g → a → % = gəna-ga ‘food’²
- 

As we see in (63), the infix and the precedence loop but have precedence variables within the free morpheme base. And, with a two segment, we have to ensure that infixation precedes reduplication yielding /gəna-ga/ and not /ga-ən-ga/. However, since the beginning precedence variable of the infix /ən/ is defined as the first segment /g/ and the

ending point is /a/, and the beginning precedence variable for reduplication is the last segment /a/ and the ending precedence variable is the first segment /g/, precedence arrows lead us to proper realization. Furthermore, outputs like /gəna-gəna/ are avoided due to the economy condition, which prevents use of the infix twice.

The two infixes are /ən/ and /ər/ and appear to overwhelmingly nominalize a verb, as we see in (64-65):

- (64) ʃənʊm-ʃʊm-ən ‘food’¹ (ʃʊm = to eat + ən)
 (65) gəriʃ-ʻgiʃ-ən ‘window’¹ (giʃ = to see + əʃ)

As we see in (64) and (65) the infixes /ən/ and /ər/ nominalize the verb, often making it an instrument or an object, theme, or patient. Few exceptions exist to this in which the reduplicated form remains a verb, as we see in (66) and (67):

- (66) ləlʃʃ-ʻloʃ ‘to remove the outer shell’¹ (lʃʃ = to peel + əʃ)
 (67) dərər-ʻder ‘to set vertically’¹ (der = to lean + əʃ)

In (67) we see the only example of a non-nominal reduplicated form with the phonetic realization of the [ər] infix. In (66) we see that the infix is realized as [əl], but Ramamurti claims that this is assimilation from /r/ to [l]. It is also interestingly to note that the other instances of the infix [əl] are the only other instances of non-nominal forms after reduplication and infixation have occurred. While this could be purely coincidental, this may suggest that [əl] is not underlyingly /ər/, but rather a third infix /əl/ that does not nominalize reduplicated forms in the same way as the morphemes /ən/ and /ər/.

4.4 Fixed segment reduplication

Fixed segment reduplication is similar to standard reduplication in that a sound or set of sounds is repeated. However, in fixed segment reduplication, the reduplicant does

not completely mirror the base, as single segment or feature in the reduplicant is distinct from that of the base, most often at the far-left or far-right. This segment is typically invariant; the same segment is utilized in all reduplication of that kind in a language. As we saw in Chapter 3, fixed segment reduplication is easily derivable under Raimy's model of precedence relations, as we see in (68):

$$(68) \quad \# \rightarrow l \rightarrow a \rightarrow k \rightarrow \% \quad = \quad [lakʃmak] \quad \text{'lock-schmock'}$$

In English, the fixed segment /ʃm/ is applied to the beginning of the reduplicant and has semantic implications of negating the importance or validity of a previous statement or claim. We can see the application of /ʃm/ - reduplication in (69-70):

$$(69) \quad \text{table-schmable} \quad (\text{Alderete et al. 1999})$$

$$(70) \quad \text{gravity-schmavity} \quad (\text{Alderete et al. 1999})$$

In (69), the onset [t] is deleted and overwritten by [ʃm], so that 'table' becomes 'table-schmable.' This is repeated in (70), where the onset consonant cluster [gr] is deleted and replaced with [ʃm].

However, it is key to note that Alderete et al. (1999) divide fixed segment reduplication into two fundamental groups: phonological and morphological. The example of *schm-* reduplication in English is classified as morphological reduplication because *schm-* acts more like an affix than the mere segment overwriting reduplication like we see in many other languages. However, it is also key to note that Alderete et al. (1999) apply Optimality Theory based on the work of Prince and Smolensky (1993), which requires that such a distinction be made. I believe that following Raimy's (2000)

proposal, we can continue to treat all instance of reduplication, whether they involve fixed segment epenthesis or not, as both phonological and morphological processes and that a single mechanism as proposed in (68) can account for both of Alderete et al.'s (1999) classes.

While my proposed mechanism for fixed segment reduplication can generate correct surface structures irrespective of Alderete's (1999) classes or regardless of semantic or syntactic domain, it is interesting to note that once again Sora does not appear to apply the rules of reduplication to any productive semantic end. We see both verbs and nouns reduplicated with fixed segments and, within these classes, we can draw no wider conclusions about any unifying features these tokens have in common. Keeping with full and partial reduplication, fixed segment reduplication is used with everything from onomatopoeic representations of sound to everyday business affairs and actions. This contrasts to Alderete et al.'s (1999) investigation of fixed segment reduplication in which each language appears to apply reduplication productively: fixed segment reduplication nominalizes verbs in Yoruba, makes nouns or verbs diminutive in Nancowry, and adds the meaning of 'etc.' to nouns in Kolami.

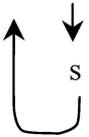
Turning once again to Sora, we see that there appear to be eight segments used in fixed segment reduplication: /b/, /p/, /t/, /k/, /m/, /s/, /r/, and /l/. They are found in varying degrees of frequency with /m/ by far the most frequent, followed by /b/, /k/, and /t/. /r/ and /l/ were each only found in one token in Sora. And as previously discussed in section 4.2, there is the possibility that /ʔ/ acts as a fixed segment in vocalic reduplication.

Firstly, we see that the most common form of fixed segment reduplication is full reduplication which we see in (71):

(71) gad-'sad 'to settle an affair'¹

In (71), we see that the entire base has been reduplicated but the reduplicant is not faithful to the base because the [g] segment of the base has been deleted and [s] has been epenthesized to replace it. We also see that Sora is in keeping with Raimy's proposal in (72).

(72) # → g → a → d → % = [gad-'sad] 'to settle an affair'¹



In (72), we see that this model appears to correctly and accurately derive the observed structure of fixed segment reduplication in Sora. However, while we have been proposing this model, it is worthwhile to note that this model of reduplication works under the assumption that the onset is the consonant in the base and that the first consonant of the second syllable is the fixed segment. To see if there is support or counterevidence for this argument, we examine each segment separately, seeing that [sad] means 'to move out of the way' or 'to sting (as a bee)' and that [gad] means 'to cut, to split, to amputate.' Neither appears to have any connection to the form in (72), allowing us to assume that like many reduplicated forms in Sora, (72) appears as a static construction.

Thus, to be sure of the process of fixed segment reduplication in Sora, we turn to another example.

(73) al'ja:ble-mal'ja:ble 'touching each other'¹

In (73), we once again see a fully reduplicated term, the second segment appearing with the morpheme /m/ where the first has no consonantal onset. In order to determine which

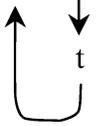
appears to be the base and which the reduplicant, we must consult each segment. We see that [al'ja:ble] means ‘adjacent’ while [mal'ja:ble] is marked only to be the tag of [al'ja:ble] in ‘touching each other.’ From these definitions, we can say with certainty that the first time in fixed segment reduplication is the base while the second is the reduplicant.

Importantly, in addition to fixed segment reduplication in full reduplication, we also see fixed segment reduplication utilized with partial reduplication, as we see in (74):

(74) arid₀-tid₀ ‘a trifle’¹

Again, this is easily derived under our model by adjusting the ending precedence variable, as we can see in (75):

(75) # → a → r → i → d₀ → % = [arid₀-tid₀] ‘a trifle’¹



Looking at fixed segment reduplication in Sora, we see firstly and importantly that Sora exhibits this feature in addition to employing faithful full and partial reduplication. In addition, we see that we can apply the same theory of precedence loops to fixed segment reduplication that we applied to faithful reduplication by simply adding the segment within the loop itself. This mechanism allows us to treat the different forms of reduplication in the same way, which was previously impossible under Optimality Theory.

4.5 Non-faithful reduplication

Up to this point, this examination of Sora has dealt only with simple and faithful reduplication. When we examined full reduplication, we saw no discrepancies between the base and the reduplicant. The same was true when we examined partial reduplication.

When we turned to fixed segment reduplication, we saw that a single feature was not faithful to the base, but this was accounted for in the single segment embedded within the precedence loop. In this section, we will look at cases of non-faithful reduplication, chiefly consonant assimilation and changes in vowel quality. First, we will look at consonant assimilation in reduplication in Sora.

4.5.1 Consonant Assimilation in Reduplication

Consonant assimilation in reduplication is not uncommon, although it may initially appear counterintuitive when we preliminarily examine Raimy's (2000) model.

(76) # → b → e → d → % = [beb-'bed] 'to feel thirsty'



Looking at (76), one may initially assume that assimilation would not take place because neither the onset nor the coda is preceded by a sound which could alter its phonetic representation. We might expect the phonetic representation to be unaltered as in (77):

(77) *bed-'bed 'to feel thirsty'

However, this construction is not realized in Sora. If we turn back to (76), we see that by the nature of the precedence loop, the onset /b/ is preceded both by # and /d/. Similarly, the coda /d/ is followed by both % and /b/. Thus the phonetic representation of (78) is not unexpected:

(78) beb-'bed 'to feel thirsty'¹

We see that in (78) the place feature of the coda is assimilated from alveolar to bilabial due to the precedence loop, which was similar to the process of nasalization spread in Malay that we examined in Chapter 3.

We see that this rule of assimilation holds true in other manners of articulation. In (79) we see that, like in (78), the place feature of the nasal assimilates in the same way that that of a plosive did in.

(79) den-de:ŋ-ən ‘to become fat and strong’¹

However, in (80) and (81) we see that in cases in which the coda and onset are not alike in manner of articulation, the coda assimilates completely, both in place and manner.

(80) kok'kum ‘collected, gathered’¹

(81) bub'bur ‘to peep’¹

In (80), we see that the segment /m/ assimilates both the orality and velar articulation of the onset /k/ and that in (81), the segment /r/ assimilated the obstruent and bilabial articulation of the onset /b/.

These simple changes in coda assimilation are not at all surprising, but what is surprising is the seemingly arbitrary manner in which they are applied. In contrast to [beb-'bed] given in (78) meaning ‘to be thirsty,’ we find that the non-assimilated version is also grammatical in (82), yet with a different semantic meaning.

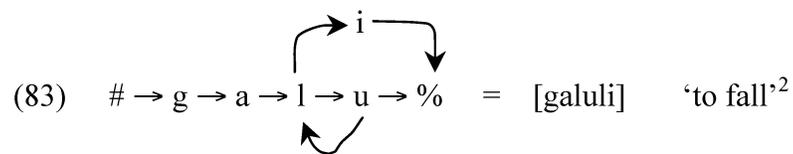
(82) be:d-'be:d ‘to absorb’¹

Both the assimilating (78) and the non-assimilating (82) appear to stem from the same base [bed] which means ‘to drink,’ and both are influenced by the same precedence loop, so the distinction between when assimilation is grammatical and when it is not must rest in the precedence loop itself but in some other phonological mechanism. Other cases in which place or manner was not assimilated are common throughout the language, but the semantic minimal pair between the assimilated lexeme and the unassimilated one are incredibly rare. It is thus not in the scope of this paper to examine when assimilation can

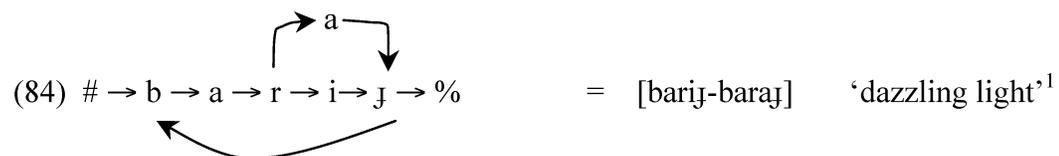
occur and when it cannot, although further study on this topic could provide more meaningful information about the interface between semantics and phonology in reduplication and the general phonology of Sora.

4.5.2 *Vowel Changes in Reduplication*

In addition to consonant assimilation, changes in vowel quality are common in reduplication in Sora. In some languages, vowel shift in reduplication occurs to satisfy phonological rules, like vowel harmony or sonority contour restraints. However, in many others changes in vowel quality are treated in the same way as fixed segment reduplication (Alderete et al. 1999; Raimy 2000). In Sora, due to a lack of phonological study to prove the need for phonological rules for vowel harmony, etc., we will treat changes in vowel quality in the same way which we treated fixed segment reduplication, that is, simply introduce the vowel into the precedence loop as we see in (83).



The most common phenomenon we see with changes in vowels is the change in vowel quality. By far the most frequent vowel change was the from [i] to [a], in which [i] occurs in the base and [a] in the reduplicant, as we see in (84):



However, it is paramount to note that all vowels can occur either in the base or the reduplicant and there do not appear to be any restrictions on their realizations.

(85) bur-'ber ‘to churn’¹

(86) *pata-'pate* 'to become blistered'¹

Another common phenomenon we see with vowel changes is the change in vowel length, nearly always from a short vowel in the base, to a long vowel in the reduplicant.

We see that this is the case with any vowel, as we can see in (87-89):

(87) *gemer-'ge:me:r* 'itching'¹

(88) *gati-ti:* 'to tickle'¹

(89) *go-'go:* 'to become large, big, wealthy'¹

Changes in vowel length are often treated as their own form of reduplication in which the vowel is reduplicated in its own precedence loop. However, this form of vowel reduplication was not examined in Sora because vowel length is not phonemic and can vary dramatically from speaker to speaker. Further studies could provide valuable insight into vowel length in Sora and its interplay with other morphophonological processes like reduplication.

It is also of note that this change in vowel length can exist in any form of reduplication, whether full or partial. While we have no examples yet of it occurring with fixed segment reduplication, there is no reason to expect that this is ungrammatical. While this rule is consistently applied, making the first vowel short and the second vowel long, it does not consistently convey any productive semantic or syntactic information nor does it exclusively apply to a certain semantic or syntactic class. It also must be noted that there was a single exception (90) to this rule.

(90) *aŋa:n-te-'aŋan-te* 'wherever'

While the representation in (90) is unexpected because it contradicts the general trend, it is still derivational under a switching of the embedded information in the precedence loops.

4.6 Multiple Loops in Reduplication

In addition to the reduplicated forms we've seen above, there also exist forms of reduplication in Sora in which reduplication occurs more than once. This includes lexemes with two distinct loops that reduplicate different parts of the word independently, triplication where the entire base is reduplicated twice, and ordered reduplication in which the entire form is reduplicated and then that output is reduplicated again.

4.6.1 Reduplication with distinct loops

Firstly, we examine reduplication in which two distinct loops reduplicate two distinct segments of the lexeme independently. We can see this phenomenon in Sora in (91-93):

(91) duŋ-'duŋ-jeŋ-'jeŋ 'like a storm'¹

(92) siuŋ-'siuŋ-ŋoi-'ŋoi 'the cry of a kind of mina'¹

(93) so:b-'so:b-so:r-'sa:r 'the cry of the wild fowl while it is on the ground'¹

In (91-93), we see that clearly two separate reduplication processes are occurring in the tokens. Additionally, we see that this can be used for onomatopoeic tokens, like we see in (92-93), but not exclusively, as we see in (91).

These two separate reduplication processes are easily derivable with our existing model, simply adding in two distinct precedence loops, as we see in (94):

(94) # → d → u → ŋ → j → e → ŋ → % = [duŋ-'duŋ-jeŋ-'jeŋ] 'like a storm'

As we see in (94), two distinct precedence loops are occurring to derive an observed form with two separately reduplicated forms. Multiple distinct loops present no problems

to Raimy's (2000) model as they are two processes with distinct beginning and ending precedence variables, much in the same way as forms with reduplication and affixes.

4.6.2 *Triplication*

Another rare form of reduplication with multiple precedence loops in Sora is triplication, in which the entire base is reduplicated twice, as we see in (95-96):

(95) iŋa:-iŋa:-'iŋa: 'cry of a newborn'¹

(96) kur-kur-'kur 'cooing of the doves'¹

Interestingly, as we see in (95-96), most of the examples of triplication that occur in Sora are onomatopoeic.

Keeping with the model of two distinct loops in (94), our first attempt is derive a model for triplication is simply adding another loop with same defined precedence variables.

(97) # → k → e → % = [ke-ke-'ke] 'the scream of a peafowl'¹



In (97), we see that the addition of a second loop can accurately describe the phenomenon of triplication in Sora. However, I propose that a simpler model exists in which the existing precedence loop is simply repeated a second time, as we can see in (98):

(98) # → k → e → % = [ke-ke-'ke] 'the scream of a peafowl'¹



Both (97) and (98) accurately describe the phenomenon of triplication in Sora. However, I have selected (98) because it does not require the addition of a new precedence loop. This is due to a change in the economy condition of that loop; instead of restricting the repetition of the loop, it licenses a second loop.

Other cases of triplication occur in which one or two of the reduplicants, or triplicants, is not faithful to the base. It is these forms, in contrast with the faithful triplicated forms above, that are not onomatopoeic:

(99) ji-ja:-ja: 'whatever'¹

(100) pur-par-pur-lam-ge 'ragingly'¹

We see in (99) and (100) that all three segments can logically be assumed to be reduplications of the same base, with minor vocalic change occurring. We see in (99) that the base [ji] changes to [ja] in the first reduplicant and remains [ja] in the second. Conversely, we see in (100) that the base [pur] changes to [par] in the first reduplicant and then to back to the original [pur] in the second reduplicant. This presents an interesting contrast for determining the nature of the precedence loop that yields a triplicated form. Perhaps (99) suggests that [a] is part of the precedence loop and thus occurs in both reduplicants. However, (100) contradicts this proposal as the second reduplicant does not bear the same vowel quality as the first reduplicant. More studies into the phenomenon of triplication could shed more light on this interesting phenomenon.

4.6.3 Ordered reduplication

The final form of reduplication that occurs in Sora is the most rare, both in Sora and certainly cross-linguistically. There appears to exist forms that have a base form and three reduplicants as we see in (101):

(101) du'du-du'du 'in haste'¹

We see that the base /du/ is reduplicated three times leaving us with a possibly quadruplicated form. This would suggest that, like triplication, for quadruplication to be

realized, the precedence loop must be repeated three times and the economy condition now licensed a third loop. This appears to be the case in other languages, like Fante (Abakah 2004), in which a single base is placed in the same precedence loop three times. In Fante, reduplication is used as an intensifier and triplication and quadruplication simply intensify to increasingly greater degrees.

In this form of reduplication in Sora, which I have termed ‘ordered reduplication,’ I propose that the base first undergoes a single precedence loop and then is entered into a second, distinct precedence loop which ultimately yields what appears to be quadruplication. If we examine cases of ordered reduplication other than those which are fully-faithful full reduplicants like (102), we see that ordered reduplication is a more plausible theory.

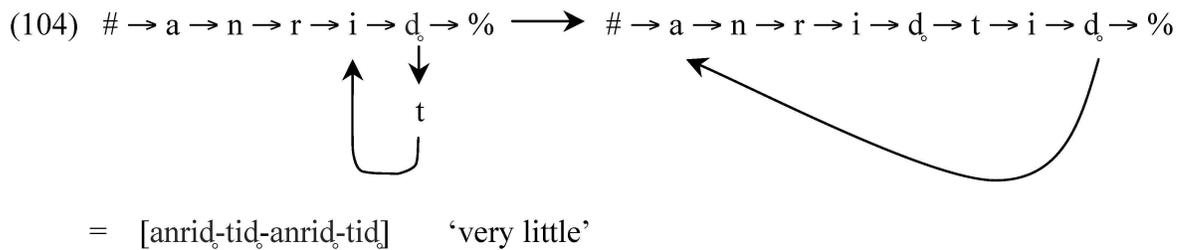
(102) anrid_ḱ-tid_ḱ-'anrid_ḱ-tid_ḱ 'very little'¹

In (102), we see what initially appears to be simple case of full reduplication in which the trisyllabic [anrid_ḱ-tid_ḱ] is fully reduplicated faithfully. However, examining the proposed base [anrid_ḱ-tid_ḱ], we see what appears to be a case of fixed segment reduplication. Thus (102) appears firstly to have undergone partial fixed segment reduplication and then secondly full faithful reduplication. My first attempt at what ordered reduplication might look like can be seen in (103):

(103) *# → a → n → r → i → d_ḱ → % = [anrid_ḱ-tid_ḱ-anrid_ḱ-tid_ḱ] ‘very little’

However, see in (103) that this model does not successfully derive the observed structure. Instead, we find that (103) would derive [anrid_ḱ-tid_ḱ-anrid_ḱ] in which the fixed segment

reduplication is a sort of infix in the full reduplication loop of the base. However, we are still attempting to derive [anri_ḍ-ti_ḍ-anri_ḍ-ti_ḍ] in which the entire structure derived by the first fixed segment reduplication loop is then reduplicated. In order to account for this structure, and all lexemes that demonstrate ordered reduplication, we must treat the two loops as two separate processes. Thus, the correct derivation of ordered reduplication can be seen in (104):



In (104), we see that the two separate processes model correctly derives the observed structure. This model then explains other cases of ordered reduplication like (105):

(105) da:daŋ-da:daŋ 'the sound of cutting wood'¹

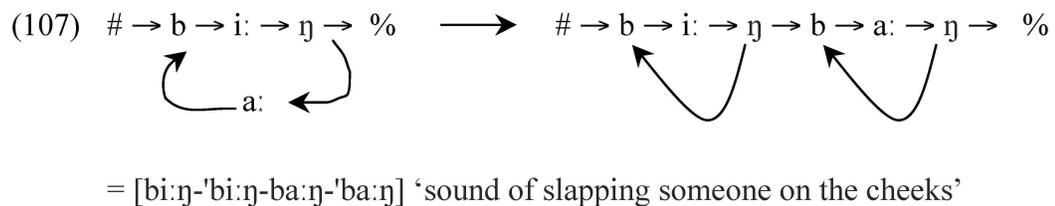
In (105), we see that the base has first been partially reduplicated and then fully reduplicated, putting it through two distinct precedence loops.

Some cases of possible ordered reduplication seem to cast some doubt on this proposal, as in (106):

(106) bi:ŋ-'bi:ŋ-ba:ŋ-'ba:ŋ 'sound of slapping someone on the cheeks'¹

The reduplication in (106) seems to contrast with the previously seen examples of ordered reduplication because we would expect the vowel shift to occur in an alternating pattern, suggesting that the initial vowel shift occurred in the first precedence loop and the second precedence loop fully reduplicated that first. However, this is not the case in (106), which suggests that perhaps we are seeing two parallel cases of reduplication in

which [bi:ŋ] and [ba:ŋ] both enter precedence loops of their own. I hypothesize that this is another form of ordered reduplication in which the form [bi:ŋ] was reduplicated with a vowel shift to [bi:ŋ-ba:ŋ] and then two distinct new precedence loops were utilized for each segment, as we see in (107):



In (107), we see an alternative form of ordered reduplication that can account for the reduplication forms seen in (106).

Initially, I believed these forms of reduplication to be derived by some process of recursion, but as we have seen in (104) and (107), this process is not recursive, but rather ordered and stratal. These ordered processes are perfectly derivable under other models of reduplication, like OT, but present problems for Raimy’s (2000) precedence relations model, particularly, to the claim that there is a single beginning and a single end in the precedence relations model. Raimy (2000:69) states that “[m]ultiple instances of either # or % will collapse into a single entity that combines the precedence information from them.” However, in order to achieve the surface structures of (104) and (107), we need to linearize the output of the first precedence relations process and use that as the input into the second. This necessitates that there be two distinct but ordered beginning and ending points, which is clear from the two instances of # and % in (104) and (107).

However, while these examples challenge Raimy’s proposal, I do not believe that they contradict the model. Rather, I believe that they require modifications to the precedence relations model that only contribute to its depth and universality, allowing it

to derive complicated structures like backcopying in Malay and ordered reduplication in Sora.

5 Conclusions

The initial goal of this thesis was to add Sora to the existing dialogue on morphophonological theory and to provide evidence that Sora exhibits reduplication. Moreover, I hoped to show that a single model can be demonstrated to derive each form of reduplication present in a language. Yet through the process of this thesis, my goals have been surpassed, leading to greater implications that I imagined.

This paper began by presenting an introduction to the language and to existing theory of reduplication. Selecting Raimy's model as a viable model for Sora and presumably all other languages, I moved to present a typology of reduplication in Sora. I illustrated that Sora exhibits full and partial reduplication, faithful and unfaithful reduplication, fixed segment reduplication, triplication, and what I have termed as ordered reduplication, a newly described, intriguing phenomenon.

Through ordered reduplication, we saw the limitations of the precedence model, as it does not allow multiple beginning and ending points. However, I propose that adding the capability of ordered processes does not contradict the model, but rather enhances it. Thus, with modifications, Raimy's (2000) precedence relations model is universal and highly generative, allowing for the derivation of drastically different forms through a single model with differing specifications of the precedence variables.

Furthermore, as I suggested within the body of this paper, further studies in Sora reduplication may also shed light on the interface between phonology, morphology, and

semantics. In particular, further studies on assimilation in Sora can illuminate the particular parameters in which assimilation is grammatical. An understanding of assimilation could also illuminate the interaction between assimilation and semantics, perhaps with cross-linguistic implications. Furthermore, continued studies in vowel overwriting in reduplication in Sora will have implications on Sora phonology outside of reduplication while also contributing to the conversation on vowel replacement in reduplication cross-linguistically, and whether it should consistently be treated as a fixed segment, as the result of phonological parameters, or whether cross-linguistic generalizations about vowel change in reduplication are not plausible.

Despite the aspects requiring further study, the insights from Sora into the theory of reduplication are undeniable. To begin with, I remind my reader that Sora may have one of the lexicons with the single greatest percentage of reduplication, around thirteen percent. Yet surprisingly, reduplication in Sora is chiefly non-productive. Previous assertions claimed that true reduplication carries semantic and syntactic information (Inkelas and Zoll 2005); that reduplicative forms that existed solely for phonological purposes were *pseudoreduplication* (Newman 2000). However, we have seen that the reduplication in Sora certainly is not *pseudoreduplication*. Ordered reduplication is certainly not fulfilling any parameters of *pseudoreduplication*—it appears to push the limits of a proposed fundamental language parameters: the economy condition (Moravcsik 1978).

In addition to the implications of productivity in reduplication, Sora has implications for what forms are possible in reduplication cross-linguistically. The observance of such forms as ordered reduplication suggests that the full extent of

reduplication has not been documented or described in the existing literature. Ordered reduplication, and the existence of multiple precedence loops in different locations in a single lexeme, suggest that reduplication can do more than was previously believed. Sora, as an under-documented language, suggests that we should continue the description and documentation of other endangered and under-documented languages and add their contributions to the theoretical dialogue. With these sorts of observations adding to existing theories and parameters, we may see the many new, previously undescribed possibilities in reduplication, morphophonology, and language.

Appendix A: Orthographical Comparison

Ramamurti	IPA	Description
ə	ə	mid central vowel
a	a	low back vowel
b	b	voiced bilabial plosive
d	d	voiced alveolar plosive
e	e	mid front vowel
g	g	voiced velar plosive
i	i	high front vowel
ɪ	[ɪ]	mid-high front vowel
j	j	palatal approximant
ʃ	dʒ	voiced post-alveolar affricate
k	k	voiceless velar plosive
l	l	lateral approximant
m	m	bilabial nasal
n	n	alveolar nasal
ŋ	ŋ	velar nasal
ɲ	ɲ	palatal nasal
o	o	mid back vowel
p	p	voiceless bilabial plosive
r	r	alveolar trill
s	s	voiceless alveolar fricative
t	t	voiceless alveolar plosive
u	u	high back vowel
ʊ	[ʊ]	mid-high back vowel
z	[z]	voiced alveolar fricative
ʔ	ʔ	glottal stop
:	:	long vowel
-		morpheme break

Not present in Ramamurti, but proposed for Sora:

	i	central high vowel
	ʈ	unvoiced retroflex plosive
	ɖ	voiced retroflex plosive

* The highlighted lines illustrate the differences between the orthographies.

[Bracketed symbols] represent those unused symbols, but consistent nonetheless.

Appendix B: Inventory of reduplicated lexical items from Harrison, Anderson & Phillips (2011)

Full Reduplication in Sora				
Monosyllabic				
Sora Term	English Gloss	POS	Speaker	Notes
1	bar-bar	to exchange	v	Mariam Roita
2	bo pal-pal	half rupee	n	Mariam Roita
3	dzu-dzu-n	granfather	n	Mariam Roita
4	ka-ka	crow	n	Mariam Roita
5	ku-ku	cough	n	Opino Gomango
6	me-me-n	breast, teat	n	Zasina Roita
7	me?-me?	breast	n	Marie Gomango
8	saŋ-saŋ	turmeric	n	Opino Gomango
9	ta-ta	father's elder brother	n	Zasina Roita
10	ti-ti	there	adv	Mariam Roita
11	ti-ti-n	tamarind	n	Oranchu Gomango
Disyllabic				
Sora Term	English Gloss	POS	Speaker	Notes
12	kalik-kalik	glitter	n	Zasina Roita
13	pore-pore	crooked, bent	adj	Mariam Roita
Partial Reduplication in Sora				
Prefixing				
Sora Term	English Gloss	POS	Speaker	Notes
14	bu-bud-ən	worm	n	Mariam Roita
15	dzu-dzum	ancestor	n	Opino Gomango
16	ga-gan-ən	gaping	n	Zasina Roita
17	gel-gelsitoŋ-ən	a traditional dance	n	Mariam Roita
18	gi-gin-ən	to have scratches from one's nails	v	Zasina Roita
19	gi-ginaŋ	to scratch	v	Mariam Roita
20	ja-jam	mother's elder sister; stepmother	n	Mariam Roita
21	ju-julī	wrinkle	n	Mariam Roita
22	ju-jum	ancestor (fem.)	n	Opino Gomango
23	ju-ju?a	to be shaken	v	Mariam Roita
24	pa-pa.r-ən	grasshopper	n	Zasina Roita
25	pu-pun	cake	n	Zasina Roita
26	so-som-ən	spectacles	n	Zasina Roita
27	ta-talaj	sister's son	n	Mariam Roita
28	tu-tudzan	star	n	Opino Gomango
29	tu-tul-mər	guard	n	Zasina Roita
30	tu-tum-ən	a kind of garden lizard	n	Zasina Roita
Suffixing				
Sora Term	English Gloss	POS	Speaker	Notes
31	aniŋa-dzu-dzu-n	his father's father	n	Zasina Roita
32	arsu-sun-ən	to fight with one another	v	Zasina Roita
33	bon-do-do-n	to turn on	v	Opino Gomango
34	džali-li	to extend	v	Mariam Roita
35	džona-na-baj	ear of corn	n	Mariam Roita
36	əpsana-na	to make another small	v	Opino Gomango
37	kunti-ti	there	pron	Zasina Roita
38	pura-ra	heart	n	Marie Gomango
39	pura-ra-n	heart	n	Opino Gomango
Infixing				
Sora Term	English Gloss	POS	Speaker	Notes
40	a-du-du-gi jira	to flee, hasten, go away	v	Zasina Roita
41	akuj-kuju	plaited hair	n	Zasina Roita
42	oka-ka?	sack	n	Opino Gomango
43	tenem-jim kon-ondun	a mutual grappling	n	Mariam Roita
44	tiri-ru pe?	flute	n	Mariam Roita
Vowel				
Sora Term	English Gloss	POS	Speaker	Notes
45	agur dzoʔon	ripe fruit	n	Mariam Roita
46	boʔor-ən	a kind of large bee	n	Zasina Roita
47	da?a	water	n	Oranchu Gomango
48	de?eti	to be	v	Zasina Roita

Sora Term	English Gloss	POS	Speaker	Notes	
49	dəʔo	body	n	Opino Gomango	
50	kandrabri siʔi	left hand	n	Opino Gomango	
51	kaʔargari	car	n	Zasina Roita	
52	leʔemli	to be dissolved	v	Opino Gomango	
53	luʔu	ear	n	Marie Gomango	
54	moʔo	eye	n	Opino Gomango	
55	moʔor-dən	eye	n	Opino Gomango	
56	muʔu	nose	n	Marie Gomango	
57	ndʒeʔe	red	adj	Opino Gomango	
58	əʔəndersi	finger of hand	n	Zasina Roita	
59	raʔa	elephant	n	Oranchu Gomango	
60	sindi dʒoʔo-n	sindi fruit	n	Opino Gomango	
61	siʔi	hand	n	Marie Gomango	
62	siʔiŋ-ən	house	n	Opino Gomango	
63	soʔo	bad smell	n	Zasina Roita	
64	soʔo-təm	to stink	v	Zasina Roita	
65	su-sum-ən	spectacles	n	Zasina Roita	
66	waʔ-an	father	n	Mariam Roita	
Vowel (Full)					
Sora Term	English Gloss	POS	Speaker	Notes	
67	iʔi	headlice	n	Opino Gomango	
68	uʔu	hair	n	Oranchu Gomango	
69	uʔu	yes	int	Opino Gomango	
Reduplication + Affixation					
Reduplication + Suffixation					
Sora Term	English Gloss	POS	Speaker	Notes	
70	beʔ-beʔ-dən	to suck	v	Mariam Roita	
71	dir-dir-na	to thrust	v	Mariam Roita	
72	dʒib-dʒib-na	to swear	v	Zasina Roita	
73	kən-kən seriŋ	like this (used in songs)	phras	Zasina Roita	
74	kon-on-dun	to grapple	v	Zasina Roita	
75	ku-ku-təm-na	to gargle	v	Zasina Roita	
76	kum-kum-si	fist	n	Marie Gomango	
77	miʔ-miʔ-dəm	to doze	v	Mariam Roita	
78	ɲɔ-ɲɔ-ŋa	to teach	v	Opino Gomango	
79	pum-pum-ti	to make swell	v	Zasina Roita	
80	wanəm aməŋ dʒib-dʒib-na	swearing by ones father	n	Mariam Roita	
Reduplication + Noun Incorporation					
Sora Term	English Gloss	POS	Speaker	Notes	
81	di-di-boj	school mistress	n	Opino Gomango	
82	diŋ-diŋ-tin	to stretch	v	Mariam Roita	
83	dumba tur-tur-mar	a village guard	n	Zasina Roita	
84	dʒi-dʒi-sir	tie the paddy field	n	Zasina Roita	
85	ir-ir-boj	wifes younger sister	n	Zasina Roita	i to i
86	ir-ir-siʔ	wifes younger brother	n	Mariam Roita	i to i
87	kur-kur taman	to kiss	v	Zasina Roita	
88	lo-lo-gaj	the month of April-May	n	Zasina Roita	
89	me-me-n arub	breast milk	n	Zasina Roita	
90	saŋ-saŋ-gulur	yellow	adj	Opino Gomango	
91	ti-ti adʒaita	down there	adv	Zasina Roita	
92	ti-ti seriŋ	the one belonging to that place	pron	Zasina Roita	
Reduplication + Infixation					
Sora Term	English Gloss	POS	Speaker	Notes	
93	a-dʒənən-dʒən	according to	n	Zasina Roita	/ən/
94	dʒənid-dʒid-ən	attachment	n	Mariam Roita	/ən/
95	dʒənəm-dʒəm-ən	food	n	Opino Gomango	/ən/
96	gani-gi-n apar	spittle	n	Mariam Roita	/ən/
97	gəna-ga	food	n	Opino Gomango	/ən/
98	gəri-gir-ən bate-gi-gir-ən	scratching another with a claw	n	Opino Gomango	/ər/
99	jənu-ju	shaking	n	Zasina Roita	/ən/
100	sənaj-saj	want	n	Opino Gomango	/ən/
101	sənaj-saj-dəm	want	n	Opino Gomango	/ən/
102	sənu-su	beginning	n	Opino Gomango	/ən/
103	sinaj-saj	desire	n	Opino Gomango	/in/

Unfaithful Reduplication				
Full Unfaithful Reduplication				
Sora Term	English Gloss	POS	Speaker	Notes
104 ba-bu	a term of endearment for children	n	Zasina Roita	a to u
105 ka-ki	elder sister	n	Zasina Roita	a to i
106 ki-ka	mad	n	Zasina Roita	i to a
107 pore-pare god-en	serpentine, snakelike (road etc.)	n	Mariam Roita	o to a
108 ki-ka-mər	mad person	n	Opino Gomango	i to a
Partial Unfaithful Reduplication				
Sora Term	English Gloss	POS	Speaker	Notes
109 bi-bara-mar	a trader (male)	n	Zasina Roita	i to a
110 ən-ta-ti-kisa?-le	in spite of	prep	Mariam Roita	i to a
111 galu-li	fall	v	Opino Gomango	u to i
112 _si-se-malajtər	flash of lightning	n	Zasina Roita	i to e
113 tənta-ti-ki	next	adj	Opino Gomango	i to a
114 wan ka-ko-mər	kinsmen	n	Mariam Roita	a to o
115 dʒi?i:	tooth	n	Mariam Roita	i to i:
Triplication				
Sora Term	English Gloss	POS	Speaker	Notes
116 ga-ga-gaj	the month of October-May	n	Zasina Roita	
117 ja-ja-jaŋ əwa	mother's father	n	Zasina Roita	
Not true reduplication				
Sora Term	English Gloss	POS	Speaker	Notes
118 ajer tapin aminjnim	next year	n	Mariam Roita	
119 dʒu-mar-mar	man eater	n	Zasina Roita	
120 mip-le-mip-dəm	doze	v	Mariam Roita	
121 munu-n	black gram	n	Opino Gomango	

Appendix C: Inventory of reduplicated lexical items from Ramamurti

Full Reduplication			
Monosyllabic			
Sora term	English gloss	POS	Notes
1	<i>am-'am</i>	to skim, to pass over the surface	v
2	<i>ba:ba:</i>	father	n
3	<i>ba:ba:-n</i>	cooked rice given to children	n
4	<i>bad-'bad</i>	to coddle	v
5	<i>ban-'ban</i>	to fondle as children and pets	v
6	<i>baŋ-'baŋ</i>	to be strong, to be prosperous	v
7	<i>be-'be</i>	thirst (children's language)	n
8	<i>be-'be</i>	to be elated; to be reassured	v
9	<i>be-'be</i>	to be thirsty (children's language)	v
10	<i>be-'be</i>	to surround; to crowd around someone	v
11	<i>be:d-'be:d</i>	to absorb (as dry soil)	v
12	<i>bem-'bem</i>	to become weak, to be emaciated	v
13	<i>bi:ŋ-'bi:ŋ</i>	a ringing sound	n
14	<i>bid-'bid</i>	to cover up a crack	v
15	<i>boi-'boi</i>	large, big, very much, many	adj/adv
16	<i>bor-'bor</i>	to peep into something	v
17	<i>bud-'bud-ən</i>	to have rotten teeth	v
18	<i>buŋ-'buŋ</i>	the humming of the bees	n
19	<i>bur-'bur</i>	to peep	v
20	<i>da'da</i>	firm, tight	adj
21	<i>da:-'da:</i>	to be drenched, to be wet	v
22	<i>da:-'da:</i>	watery	adj
23	<i>dab-'dab</i>	to save; to prevent	v
24	<i>dam-'dam</i>	the sound produced when one knocks on the door	n
25	<i>daŋ-'daŋ-ən</i>	a kind of drum (children's language)	n
26	<i>de-'de</i>	to wait for; to watch; to protect	v
27	<i>deb-'deb</i>	the sound of drumming	exp
28	<i>ded-'ded</i>	to remove, to dismantle	v
29	<i>der-'der</i>	to trust, believe, hope	v
30	<i>did-'did</i>	soon, at once	adv
31	<i>diŋ-'diŋ</i>	banging or rattling sound	n
32	<i>diŋ-'diŋ</i>	to take time; to delay; to be delayed	v
33	<i>diŋ-'diŋ-ən</i>	abduction of a woman	n
34	<i>do-do</i>	both	pron
35	<i>du:di:-n</i>	dust	n
36	<i>dul-'dul-ən</i>	scar, cicatrice	n
37	<i>dum-'dum</i>	to hatch eggs	v
38	<i>dum-'dum</i>	to lean upon	v
39	<i>duŋ-'duŋ</i>	thud, thump, bang	n
40	<i>dəl-'dəl-ən</i>	atonement, compensation, retaliation	n
41	<i>ed-'ed</i>	above	adv
42	<i>gad-'gad</i>	to cut repeatedly	v
43	<i>gad-'gad</i>	to scent (used in songs)	v
44	<i>gal-'gal-ən</i>	knitting, stringing	n
45	<i>gal-'gal-ən</i>	scar, cicatrice	n
46	<i>gar-'gar</i>	rotten	adj
47	<i>gar-'gar</i>	to be rotten	v
48	<i>gar-'gar</i>	to beg, to ask, to request	v
49	<i>ge-'ge</i>	to be entangled, to be ensnared, to be embarrassed	v
50	<i>ge-ge</i>	the cry of a wild fowl while it soars in the sky	n

Sora term	English gloss	POS	Notes
51 <i>gol-'gol-ən</i>	a carpel of the jack fruit	n	
52 <i>gum-'gum</i>	sobbing	adv	
53 <i>gum-gum-'ber</i>	to mumble	v	
54 <i>guŋ-'guŋ</i>	buzzing sound	n	
55 <i>guŋ-guŋ</i>	to strike, to knock	v	
56 <i>gōi-'gōi</i>	to murmur, to complain; to find fault	v	
57 <i>jar-'jar</i>	around, on all sides	prep	
58 <i>jeŋ-'jeŋ</i>	to blow gently as a breeze	v	
59 <i>jo-'jo:-n</i>	fish (children's language)	n	
60 <i>jum-'jum</i>	to cover the body with cloth; to thatch a house	v	
61 <i>jur-'jur</i>	[Unkown]		
62 <i>ja:ja:n</i>	debt, which bears interest	n	
63 <i>ja:l-'ja:l</i>	to lick	v	
64 <i>ja:m-'ja:m</i>	heard in the cry of a grail	?	
65 <i>jab-'jab</i>	to adjure; to abut	v	
66 <i>jal-'jal</i>	[Unkown]		
67 <i>jar-jar-ən</i>	fibre within yam and other tubers	n	
68 <i>je:d-'je:d</i>	peeping of small birds	n	
69 <i>je:d-'je:d</i>	to importune	v	
70 <i>ji-'ji</i>	to yoke oxen	v	
71 <i>ji-'ji-n</i>	a bundle, a packet	n	
72 <i>jid-'jid!</i>	peep! peep!	n	
73 <i>jin-jin</i>	to increase, to outnumber, to excel	v	
74 <i>jiŋ-jin</i>	the cry of a squirrel	n	
75 <i>jiŋ-jin</i>	to ask for a woman	v	
76 <i>jo-'jo-n</i>	grandfather	n	
77 <i>joŋ-'joŋ</i>	equal, alike, of the same caste/rank	adj/adv	
78 <i>joŋ-'joŋ</i>	to be equal	v	
79 <i>jub-jub</i>	sounds of footsteps	n	
80 <i>jum-'jum</i>	to take back, to restore, to return	v	
81 <i>juŋ-'juŋ</i>	to take a girl to her husband's house	v	
82 <i>juŋ-'juŋ-ən</i>	a send off	n	
83 <i>ka:'ka:</i>	crowling	n	
84 <i>ka:'ka:-n</i>	crow	n	
85 <i>kal-'kal</i>	difficult, inconvenient	adj	
86 <i>kem-'kem</i>	roaring laughter	n	
87 <i>ken-'ken</i>	to sing	v	
88 <i>ken-'ken-ən</i>	song, singing chant	n	
89 <i>kib-'kib</i>	to gnaw, to bite	v	
90 <i>kiki</i>	afterwards, behind	adv	
91 <i>kur-'kur</i>	to gnaw, to bite	v	
92 <i>kur-'kur-ən</i>	dove	n	
93 <i>ku?'ku?</i>	the cry of a male cuckoo	n	
94 <i>kōŋ-kōŋ</i>	to deceive	v	
95 <i>la:'la:</i>	to spread over or cover with	v	
96 <i>le:'le:</i>	to toss, to pitch, to fling	v	
97 <i>le:b-'le:b</i>	the cry of a wild goat	n	
98 <i>le:ŋ-'le:ŋ</i>	to be damp, to be dripping	v	
99 <i>li'li</i>	to toss, to fling	v	
100 <i>liŋ-'liŋ</i>	narrow, difficult	adj	
101 <i>lo-'lo:</i>	to hoe	v	V to V:
102 <i>lo-'lo:</i>	to protect	v	V to V:
103 <i>lo-'lo:</i>	to take rest	v	V to V:
104 <i>lo:ŋ-'lo:ŋ-ən</i>	a row of houses close to one another in the village	n	
105 <i>loŋ-'loŋ</i>	lurkingly; stealthily	adv	

Sora term	English gloss	POS	Notes
106 <i>lu'lu</i>	to take rest	v	
107 <i>ma: ma:!</i>	get away! go soon!	exp	
108 <i>me-'me</i>	to node, to shake; to be shaky, to become loose; to move one's head to indicate approval	v	
109 <i>me-'me</i>	to nurse a baby	v	
110 <i>me-'me</i>	to suck	v	
111 <i>me-'me:-n</i>	the breasts of a woman; the udders of a cow, etc.	n	V to V:
112 <i>mel-'mel</i>	to examine, to inspect	v	
113 <i>mib-'mib</i>	to be closed	v	
114 <i>mib-'mib</i>	to be sleepy, to nudge	v	
115 <i>mir-'mir-ən</i>	a kind of insect that hops	n	
116 <i>muṽ-muṽ</i>	to draw; to detach, to remove	v	
117 <i>na:'na:-n</i>	my dear child	exp	
118 <i>na:p na:p!</i>	here! take it!	exp	
119 <i>ṽam-'ṽam</i>	to eat (children's language)	n	
120 <i>ṽaṽ-'ṽaṽ</i>	to teach, to instruct, to abet	v	
121 <i>ṽar-ṽar-ən</i>	voice	n	
122 <i>ṽil-'ṽil-ən</i>	self-abuse, masturbation (for either sex)	n	
123 <i>ṽoṽ-ṽoṽ</i>	to sacrifice (children's language)	v	
124 <i>ṽak-'ṽak</i>	dead silence, as at midnight	n	
125 <i>ṽo:r-'ṽo:r</i>	peal of bells	n	
126 <i>ṽo:r-'ṽo:r</i>	to ring (as in bells)	v	
127 <i>ṽa:-'ṽa:</i>	to part the hair with a comb	v	
128 <i>ṽa:l-ṽa:l-ən</i>	half a rupee	n	
129 <i>ṽam-'ṽam</i>	to flow from the breast (as milk)	v	
130 <i>ṽar-'ṽar</i>	to blaze	v	
131 <i>ṽeṽ-'ṽeṽ-ən</i>	crevice, crack	n	
132 <i>ṽid-ṽid</i>	to cast frequently in small quantities	v	
133 <i>ṽiṽ-'ṽiṽ</i>	to be cracked	v	
134 <i>ṽo:-'ṽo:</i>	to pierce, to gore	v	
135 <i>ṽo:-'ṽo:-n</i>	cake, pudding loaf	n	
136 <i>ṽob-'ṽob</i>	to corrode	v	
137 <i>ṽoi-'ṽoi</i>	curly, spiry	adj	
138 <i>ṽoi-'ṽoi</i>	to curl	v	
139 <i>ṽop-'ṽop</i>	dirty	adj	
140 <i>ṽul-'ṽul</i>	to be sprinkled	v	
141 <i>ṽul-'ṽul</i>	to sprinkle frequently	v	
142 <i>ṽuṽ-'ṽuṽ</i>	to be swollen, to be bloated	v	
143 <i>ṽür-'ṽür-ən</i>	worship, sacrifice	n	
144 <i>ṽad-'ṽad</i>	the sound produced by the wheels of a country cart	n	
145 <i>ṽai-'ṽai</i>	piece	n	
146 <i>ṽam-'ṽam</i>	the cry of a singing bird	n	
147 <i>ṽan-ṽan</i>	to be tight	v	
148 <i>ṽed-'ṽed</i>	to tie around one's head as a turban	v	
149 <i>ṽiṽ-'ṽiṽ</i>	silent	adj	
150 <i>ṽiṽ-'ṽiṽ</i>	silently	adv	
151 <i>ṽu:-'ṽu:-n</i>	trifling articles	n	
152 <i>ṽud-'ṽud</i>	to pluck	n	
153 <i>ṽum-'ṽum</i>	rapidity of movement while dancing	n	
154 <i>ṽuṽ-'ṽuṽ-ən</i>	a kind of tree	n	
155 <i>ṽuṽ-'ṽuṽ-ən</i>	name of a Sora deity	n	
156 <i>ṽa:d-'ṽa:d</i>	to make room for	v	
157 <i>ṽa:l-'ṽa:l</i>	to cut off with a sickle	v	
158 <i>ṽa:l-'ṽa:l-ən</i>	a boundary marked by cutting off some trees	n	
159 <i>ṽab-'ṽab</i>	to pare wood	v	
160 <i>ṽab-'ṽab</i>	to pound and sift grain, rice	v	

Sora term	English gloss	POS	Notes
161 <i>sai-'sai</i>	to be agitated	v	
162 <i>sam-'sam</i>	to press, to crush	v	
163 <i>sap-'sap</i>	to shell or break open (nuts, etc)	v	
164 <i>se-'se</i>	to choose, to select	v	
165 <i>se-'se</i>	to hatch more than one egg	v	
166 <i>sed-'sed</i>	to throw in disorder	v	
167 <i>sib-'sib</i>	to feel the sensation of being pinched	v	
168 <i>so:r-'so:r</i>	to wash by rubbing (as a fish)	v	
169 <i>soj-soj</i>	to jeer, to mock, to mimic	v	
170 <i>sub-sub</i>	false, sham, dishonest	adj	
171 <i>sud-sud</i>	to be mixed up (as seeds)	v	
172 <i>tad-'tad</i>	completely, quite	adv	
173 <i>tam-'tam</i>	to clean, to wash	v	
174 <i>tan-'tan</i>	to rub (as ointment)	v	
175 <i>taŋ-'taŋ</i>	to clean, to wash	v	
176 <i>taŋ-'taŋ</i>	to look at eagerly, to glance with an evil eye	v	
177 <i>taŋ-'taŋ</i>	to vaccinate	v	
178 <i>taŋ-'taŋ-ən</i>	vaccinator	n	
179 <i>tar-'tar</i>	to wake up, to arose	v	
180 <i>te-'te</i>	name of a Sora deity	n	
181 <i>ted-'ted</i>	to move or turr sideways frequently, to swing	v	
182 <i>tem-'tem-ən</i>	act of selling	n	
183 <i>teŋ-'teŋ</i>	much	adv	
184 <i>ti-'ti</i>	to distribute	v	
185 <i>toj_h-toj_h</i>	adjacent, contiguous, neighboring	adj	
186 <i>tor-'tor</i>	to form fence	v	
187 <i>tor-'tor-ən</i>	fence	n	
188 <i>tu-tu</i>	coitus	n	
189 <i>tub-'tub</i>	like the sound when one strikes on a basket to remove dust	adv	
190 <i>tub-'tub</i>	to distribute; to wash clothes	v	
191 <i>tud-'tud</i>	to shake	v	
192 <i>tum-'tum</i>	to collect, to gather	v	
193 <i>tuy-tuy</i>	extremely	adv	
194 <i>tuy-tuy</i>	openly, outright	adv	
195 <i>tuy-tuy</i>	to be able, to be efficient	v	
196 <i>tuy-tuy</i>	to husk paddy, to cuff repeatedly	v	
197 <i>tɔr-'tɔr</i>	to watch, to guard	v	
198 <i>ud-'ud</i>	to mix, to stir up	v	
199 <i>u_h-'u_h</i>	bale out	v	
200 <i>u?u:-de:</i>	what! is it so?	exp	
Disyllabic			
Sora term	English gloss	POS	Notes
201 <i>'ajid-'ajid</i>	little, slight	adj	
202 <i>'anrid-'anrid</i>	little by little	n	
203 <i>'baŋe:d-'baŋe:d</i>	chattering of the monkeys	n	
204 <i>'rige-'rige</i>	the creaking sound produced by the bamboo yoke carried on shoulder with loads attached to either end of it	n	
205 <i>al-'gɔn-al-'gɔn</i>	vie with one another, compete with one another	v	
206 <i>bade-'bade</i>	enough!	int	
207 <i>badu-'badu</i>	the rapidity of movement in dancing	n	
208 <i>bo:te-'bo:te</i>	some	pron	
209 <i>boŋi-'boŋi</i>	more and more to the rear	adv	
210 <i>bu:kər-bu:kər</i>	the chirping of the birds and the squealing of the rats	n	
211 <i>da'dib-da'dib</i>	clock	n	
212 <i>da'diŋ-da'diŋ</i>	the tinkling of coins	n	

Sora term	English gloss	POS	Notes
213 <i>da'jab-da'jab</i>	clock	n	
214 <i>da:daŋ-da:daŋ</i>	sound caused by cutting wood with an axe	n	
215 <i>dak'kib-dak'kib</i>	tick-tock	n	
216 <i>dak'kob-dak'kob</i>	clack	n	
217 <i>dam'buŋ-dam'buŋ</i>	the ting of the strings of a musical instrument	n	
218 <i>dame-'dame</i>	to be jolting;	n	
219 <i>darru-darru!</i>	exp used by the mother while playing bo-peep with her child	exp	
220 <i>də'bib-də'bib</i>	a dull sound	n	
221 <i>də'pub-də'pub</i>	the action of puffing as in smoking a pipe	n	
222 <i>durru-'durru</i>	hurriedly, in confusion	adv	
223 <i>et'ten-et'ten</i>	let it be so	exp	
224 <i>gajo:-gajo:</i>	[unknown]	[]	
225 <i>gata-'gata</i>	itching	adj	
226 <i>guju:r-guju:r</i>	[unknown]	[]	
227 <i>guntur-guntur!</i>	the cry of a falcon	n	
228 <i>jar'rub-jar'rub</i>	roar of a tiger	n	
229 <i>jar'ru-i-jar'ru-i</i>	sound of churning	n	
230 <i>jatta:b-jatta:b</i>	sound of crunching and munching	n	
231 <i>kimpel-'kimpel</i>	huddled together	adv	
232 <i>kudu-'kudu</i>	the cry of the female cuckoo	n	
233 <i>ladbud-'labbud</i>	thud; sound when a man is struck or the sound when vegetables are cut	v	
234 <i>ladeb;-ladeb;</i>	to be suppurated	v	
235 <i>laduŋ-'laduŋ</i>	the sound heard when tubers are boiled in water	v	
236 <i>ladur-'ladur</i>	snoring	v	
237 <i>layur-'layur</i>	indicates how a tiger growls when we sees the tigress	[]	
238 <i>lanka:-lanka:</i>	desultory, cursory, superficial	adj	
239 <i>lided-'lided</i>	to jolt	v	
240 <i>lijur-'lijur</i>	to glitter, to glow	v	
241 <i>lupur-'lupur</i>	loose	adj	
242 <i>lupur-'lupur</i>	to be loose	v	
243 <i>malaŋ-'malaŋ</i>	to flicker as a flame	v	
244 <i>mauŋ-'mauŋ</i>	the mewling of a cat	n	
245 <i>mede:r-'mede:r</i>	dim, dusky, faint	adj	
246 <i>nadur-'nadur</i>	dazzling	adj	
247 <i>paŋs:-paŋs:</i>	the sound producing by pounding or blowing or thumping	n	
248 <i>nod-i-'nodi</i>	pattering	n	
249 <i>paʔo:i-'paʔo:i</i>	the bellowing of a buffalo	n	
250 <i>pa'dar-pa'dar</i>	the sound produced by the wings of a bird when it is hit	n	
251 <i>pa'jud-pa'jud</i>	smack of whipping	n	
252 <i>pada:-'pada:</i>	smack	adv	
253 <i>pata:-'pata:</i>	as in burning	adv	
254 <i>pe'koŋ-pe'koŋ</i>	the cry of the pea-hen	n	
255 <i>pə'ta:-pə'ta:</i>	blistered, cracked	adj	
256 <i>pi'e:b-pi'e:b</i>	the cry of birds	n	
257 <i>pi'ja:ŋ-pi'ja:ŋ</i>	peep peep	n	
258 <i>pi'jeb-pi'jeb</i>	the cry of chickens	n	
259 <i>pukui-'pukui</i>	to put forward buds (as a tree)	v	
260 <i>ra'jo-ra'jo</i>	the sound of pattering drops of water	n	
261 <i>ra'kib-ra'kib</i>	the sound of crashing or crunching	n	
262 <i>riŋe-'riŋe</i>	having streaks or stripes of different colors	adj	
263 <i>rijo-'rijo</i>	the sound of clanking	n	
264 <i>ru'teŋ-ru'teŋ</i>	the sound produced by sawing or cutting with a blunt knife	n	
265 <i>ruŋaŋ-'ruŋaŋ</i>	the roar of a tiger	n	
266 <i>saga:g-'saga:g</i>	in a sobbing way	adv	
267 <i>sodor-'sodor</i>	snoringly	adv	

Sora term	English gloss	POS	Notes
268 <i>tab-ˈpa:p-tab-pa:p</i>	expressing the sound of the flapping of the wings of birds	n	
269 <i>tada:j-ta'da:j</i>	in a state of intoxication	adv	
270 <i>takei-'takei</i>	expressing the sound of violent coughing or sobbing	n	
271 <i>taku-'kai-taku-'kai-bud</i>	the chattering of gibbering of a monkey	n	
272 <i>tande-'tande</i>	?	?	
273 <i>tetten-tet-ten</i>	now and then; then and there	adv	
274 <i>tirri-'tirri</i>	an exp used to hurry cattle	n	
275 <i>togəl-togəl</i>	during night	adv	
276 <i>toʔo:d-'toʔo:d</i>	viva voce	adv	
277 <i>ude:ude:</i>	yes, very good	exp	
Trisyllabic			
Sora term	English gloss	POS	Notes
278 <i>'daragam-'daragam</i>	separate	adj	
279 <i>'rakkib-ge-'rakkib-ge</i>	the sound produced by biting	adv	
280 <i>boŋkode-'boŋkode</i>	crooked, awkward	exp	
281 <i>də'kɔ:-ta:-də'kɔ:-ta:</i>	continuity of an action	n	
282 <i>kudduble-kuddable</i>	entirely	adv	
283 <i>pi:m-pi'duŋ-pi:m-pi'duŋ</i>	the cry of the hawk	n	
Quadrasyllabic			
Sora term	English gloss	POS	Notes
284 <i>kadik-'kadan-kadik-'kadan</i>	the cry of a wild fowl while it soars in the sky	n	
Partial Reduplication			
Prefixing			
Sora term	English gloss	POS	Notes
285 <i>'pampane-ne:b-ən</i>	plant use for stomach aches	n	n to m
286 <i>bari-'su:ŋ-eri-'su:ŋ</i>	the neighboring house	n	
287 <i>barri-'su:ŋ-erri-'su:ŋ</i>	neighboring house	n	
288 <i>be-'ber-sadu-'a:r-ən</i>	a species of bird	n	
289 <i>bem-be:-n</i>	calf (children's language)	n	
290 <i>bo:'bo:d</i>	to besmear	v	
291 <i>bom'bo:n</i>	cow (children's language)	n	
292 <i>bur-bur-'u</i>	to be scattered	v	
293 <i>da-da-'kalli-n</i>	a kind of pulse	n	
294 <i>dad-'dad-den</i>	a kind of snail	n	
295 <i>dad-dab-'ban-ən</i>	a kind of lizard	n	
296 <i>diŋ-diŋ-gadi:-n</i>	bicycle	n	
297 <i>ed-'ed-ten</i>	there	adv	
298 <i>gaga:j</i>	an edible tuber	n	a to aj
299 <i>gan̄ga:-n</i>	kind of millet	n	
300 <i>ge-ge-da</i>	difficulty, confusion	n	
301 <i>ge-ge-da:-ge</i>	like one that is caught	adv	
302 <i>ja:'ja:ŋ-ən</i>	mother's younger sister; father's younger sister; step-mother	n	
303 <i>ju-'juŋ-ən</i>	grandmother	n	
304 <i>jan̄'jan̄-ruŋ-ən</i>	a fair sky, fair weather	n	
305 <i>je'je:b</i>	to swear	v	
306 <i>je'je:m</i>	to swear	v	
307 <i>jeʃje:m</i>	to swear	v	
308 <i>ji-'jan̄-ən</i>	bamboo thicket	n	i to a
309 <i>jo-'jo-n-ji</i>	ancestors	n	
310 <i>jo-'jo:-le-tar-'jo-le</i>	having swept; entirely	adv	V to V:
311 <i>ju-'jud</i>	to lull to sleep	v	
312 <i>jul-jul-taŋ-ən</i>	a string of beads	n	

Sora term	English gloss	POS	Notes
313 <i>ʃɔ-ʃɔ:n</i>	grandfather	n	
314 <i>ʃɔ-ʃɔ:n-ji</i>	ancestors	n	
315 <i>ka:'ka:b-ən</i>	cloth (children's language)	n	
316 <i>ka:'ka:d-ən</i>	crab (children's language)	n	
317 <i>ka:'ki:n</i>	elder sister	n	l to a
318 <i>kareb-kareb-'kur</i>	cry of the hen	n	
319 <i>karəkare-m-ge</i>	piteously	adv	e to ə
320 <i>ke-'ked</i>	male's private parts (children's language)	n	
321 <i>koko:'ʃaŋ-ən</i>	cock (children's language)	n	
322 <i>koko:miɖ-daŋ</i>	a little of anything, as tobacco	adj, adv	
323 <i>ku-'kum-ən</i>	rat (children's language)	n	
324 <i>ku-ku-'kid-ən</i>	panther	n	
325 <i>ku'kur-ən</i>	basket which holds three puttis	n	
326 <i>kuk'kum-a:i</i>	to tear of piece of something	v	m to k
327 <i>kuk'kur-ən-ə-arred- 'tuŋ-ən</i>	the fourth of the lunar mansions	n	r to k
328 <i>kur-kur-jo:-daŋ-ən</i>	angling rod	n	
329 <i>kək'kək</i>	to cough	v	
330 <i>la:'la:d</i>	to offer liquor to the gods	v	
331 <i>la:'la:r-na:-n</i>	junction (of roads)	n	
332 <i>lam-'lam-ka:ra:-'ne:b- ən</i>	a creeping plant	n	
333 <i>liŋ-liŋ-'bo:ŋ-ən</i>	[unknown]	[]	
334 <i>lu'lu-na:n-ə-dinna:</i>	the day of rest	n	
335 <i>ma:'ma:ŋ-ən</i>	maternal uncle	n	
336 <i>me'med-ən</i>	goat (children's language)	n	
337 <i>mi-'miɖ</i>	sleepy (children's language)	adj	
338 <i>mor'mo:ri:-n</i>	mist	n	
339 <i>mumu-da:</i>	to be suffocated	v	
340 <i>padi:-paduŋ</i>	outright	adv	
341 <i>pe-peŋ-ən</i>	nerve, vein, tendon	n	
342 <i>pa:-'pa:ra:-n</i>	pigeon	n	
343 <i>pa:-pa:-'ur-ən</i>	split-bamboo	n	
344 <i>pe'pen-na:</i>	dung, feces (children's language)	n	
345 <i>pür-pü:ri:-n</i>	a variety of grass which grows on a rocky soil	n	
346 <i>rai-'rai-len</i>	singing	n	
347 <i>ru'rum-ən</i>	plucking the pods of a plant	n	
348 <i>sar-sara:-ge</i>	thinly	adv	
349 <i>se-'se-da:</i>	to choose, to select	v	
350 <i>si'sid</i>	flesh, meat (children's language)	n	
351 <i>sisij'gɔ:l</i>	to whistle (without putting the knuckles inn the mouth)	v	
352 <i>sisij'gul</i>	to whistle (without putting the knuckles inn the mouth)	v	ŋ to s
353 <i>so'so:!'padir-pi:r!</i>	an exclamation in a children's game	exp	V to V:
354 <i>ted-'ted-ra:de-'kid-ən</i>	a royal tiger, man eater	n	
355 <i>te'tedu:-n</i>	bugle made of the horn of a goat with a bamboo tube attached	n	d to t
356 <i>ti-tij</i>	[unknown]	[]	
357 <i>to'tomid-' daŋ</i>	very little	adv	
358 <i>tot'todi:-ne:b-ən</i>	a plant whose root is given as medicine for diarrhea	n	d to t
359 <i>tu-'tuŋ-ən</i>	a pumpkin (children's language)	n	
360 <i>tu-tud-ən</i>	fire (children's language)	n	
361 <i>tut'tudia-n</i>	a small green caterpillar	n	
362 <i>tuttud-silla:-n</i>	squirrel	n	
363 <i>um-'um-ba</i>	bopeep	n	

Suffixing			
Sora term	English gloss	POS	Notes
364 <i>al-'ko:ra-ber-'ber</i>	to exchange hard words	v	
365 <i>areŋ-'reŋ</i>	useless, trifling	adj	
366 <i>attad-'tad</i>	none or nothing	n	
367 <i>bunda:da:</i>	to bud	v	
368 <i>ded-da-de-n</i>	snail	n	
369 <i>er-na:na:-n</i>	name of a Sora deity	N	
370 <i>gatiti:</i>	to tickle	v	i to i:
371 <i>gə'na:-na:-n</i>	food	n	
372 <i>ɟaita:-gig'gij-ən</i>	downcast look	n	
373 <i>madidi:</i>	knee	n	
374 <i>mando:da</i>	kind of dish or pot	n	a to o
375 <i>munda:-da:-n</i>	name of a Sora deity	n	
376 <i>tumbai-bai</i>	expressing the sounds produced by beating drums	n	
Infixing			
Sora term	English gloss	POS	Notes
377 <i>ɟa:i-te:ji-god-'god-te:ji</i>	they are scraping, they are scratching	exp	
378 <i>andi'dakka:-n</i>	anklet, ring worm around the ankle	n	i to a
379 <i>andidokkən</i>	anklet	n	i to a
380 <i>andu-dokka:-n</i>	anklet, ring worm around the ankle	n	u to o
381 <i>əndə'dakkən</i>	anklet	n	e to a
382 <i>əndidokkən</i>	anklet	n	i to a
383 <i>əndudukkən</i>	anklet	n	
384 <i>lii:r</i>	soon	adv	V to V:
V?V Reduplication			
Sora term	English gloss	POS	Notes
385 <i>iʔi:-n</i>	louse, nit	n	
386 <i>koʔo-n</i>	bottle-gourd	n	
387 <i>kuʔu:-n</i>	long gourd, bottle gourd; ladle	n	V to V:
388 <i>laʔa:</i>	to be split, to be thrown out	v	V to V:
389 <i>muʔu:-n</i>	bird's beak	n	V to V:
390 <i>oʔo:n</i>	to have child	v	V to V:
391 <i>oʔo:n-ən</i>	child	n	V to V:
392 <i>oʔo:n-le:n-ji-gam-tun-le:n-ji</i>	our children	n	V to V:
393 <i>oʔo:n'rab</i>	to drink	v	V to V:
394 <i>raʔa:</i>	to become envious	v	V to V:
395 <i>raʔa:</i>	to blossom, to be in bloom as the mango	v	V to V:
396 <i>raʔa:-'ji-n</i>	the tusk of an elephant	n	V to V:
397 <i>raʔa:-mad</i>	to be envious	v	V to V:
398 <i>raʔa:-n</i>	elephant	n	V to V:
399 <i>raʔa:d-'ne:b-ən</i>	a kind of tree that produces fibres	n	V to V:
400 <i>raʔa:d-'o:l-ən</i>	the leaf of the raʔa:d tree	n	V to V:
401 <i>raʔa:d-lu:d-ən</i>	the fibre of the raʔad tree	n	V to V:
402 <i>raʔad</i>	a kind of tree that produces fibres	n	V to V:
403 <i>raʔam</i>	to scratch	v	V to V:
404 <i>reʔe:</i>	to be torn	v	V to V:
405 <i>reʔe:d</i>	fat, stout	adj	V to V:
406 <i>reʔe:d</i>	to become fat or stout	v	V to V:
407 <i>saʔa:</i>	to come off as a rind or bark; to be open or gaping	v	V to V:
408 <i>saʔa:-'kad-ən</i>	the tendon or nerve of the male genital organ	n	V to V:
409 <i>saʔa:-ruŋ-ən</i>	husked seeds of millet panicum	n	V to V:

Sora term	English gloss	POS	Notes
410 <i>saʔa:r</i>	to dawn	v	V to V:
411 <i>seʔe:d</i>	to be missing	v	V to V:
412 <i>seʔe:d</i>	to be wasted, ruined, or spoiled	v	V to V:
413 <i>seʔe:d</i>	to pass, to lapse	v	V to V:
414 <i>siʔi:-n</i>	hand, arm	n	V to V:
415 <i>siʔi:ŋ-ən</i>	house	n	V to V:
416 <i>soʔo:</i>	to be rotten, to emit a foul smell	v	V to V:
417 <i>soʔo:-'gar</i>	foul-smelling liver; a term of abuse	n	V to V:
418 <i>soʔo:-'gar-bun</i>	a term of abuse	n	V to V:
419 <i>soʔo:-'gar-ti-'bo:ʒ-ən</i>	indecent woman	n	V to V:
420 <i>soʔo:da:na:-ne:b-ən</i>	a kind of tree	n	V to V:
421 <i>soʔo:r</i>	to bubble up, to effervesce	v	V to V:
422 <i>suʔu:</i>	to come to an end, to be finished	v	V to V:
423 <i>suʔu:ŋ</i>	to live with husband	v	V to V:
424 <i>suʔu:ŋ-ən</i>	house, home, abode	n	V to V:
425 <i>səʔs:r</i>	to boil	v	V to V:
426 <i>taʔa:l-ən</i>	spleen	n	V to V:
427 <i>taʔa:ŋ</i>	to remove burning sticks and charcoal from the fire	v	V to V:
428 <i>taʔa:r</i>	to shine, to be bright	v	V to V:
429 <i>taʔa:r-gij</i>	to be clearly visible	v	V to V:
430 <i>taʔa:r-ʒəŋ-ən</i>	sunlight	n	V to V:
431 <i>teʔe:r</i>	to reveal oneself, to respond	v	V to V:
432 <i>toʔor-u'jəŋ</i>	at midday when birds take rest	adv	V to V:
433 <i>tuʔu:l-dəm</i>	stout	adj	V to V:
434 <i>tuʔu:l-dəm</i>	to be stout	v	V to V:
435 <i>tuʔu:l-do:ŋ-mar-ən</i>	a stout bodied man	n	V to V:
436 <i>tuʔu:ŋ</i>	to collapse, to drop down	v	V to V:
V?V Full Reduplication			
Sora term	English gloss	POS	Notes
437 <i>eʔe</i>	is it really so?	exp	
438 <i>i:'i:-n</i>	laughter of young children, the cry of the Indian grouse	n	
439 <i>iʔi:</i>	to be lousy, to be nitty	v	
440 <i>uʔu:-n</i>	hair	n	
441 <i>səʔs:</i>	yes	exp	
Reduplication + Affixation			
Reduplication + Prefixation			
Sora term	English gloss	POS	Notes
442 <i>'al-lo-'lo:</i>	to employ labourers to rake the clearing with hoes	v	/a/
443 <i>'am-ma'ma:</i>	to drive on as a horse or an ox; throw down on one's face	v	/aX/
444 <i>'am-ma'ma:</i>	to wash (children's language)	v	/aX/
445 <i>a-ja:r-'ja:r-ən</i>	the fibrous part of the fruit of the palm tree	n	/a/
446 <i>a'je:ŋ-a'je:ŋ</i>	some	n	/aX/
447 <i>a:j-jeŋ-jeŋ-'riŋ</i>	a whiff of breeze	n	/aX/
448 <i>ab-aŋ-'aŋ</i>	to stir up fire, etc., also used figuratively	v	/ab/
449 <i>ab-bʔob-'bʔob</i>	to keep something under one's head as a pillow	v	/ab/
450 <i>ab-ded-'ded</i>	to shake one's head; to indicate disapproval	v	/ab/
451 <i>ab-der-'der</i>	to assure; to convince; to cheat; to delude	v	/ab/
452 <i>ab-diŋ-'diŋ</i>	to keep one waiting	v	/ab/
453 <i>ab-joŋ-'joŋ</i>	to cause to put in	v	/ab/
454 <i>ab-jid-'jid</i>	to affix, to attach, to gum	v	/ab/
455 <i>ab-joŋ-'joŋ</i>	to equalize; to compare, to adapt, to measure	v	/ab/
456 <i>ab-lo-lo</i>	to employ labourers to rake the clearing with hoes	v	/ab/

Sora term	English gloss	POS	Notes
457 <i>ab-tam-'taŋ</i>	to cut a groove	v	/ab/
458 <i>ab-tod-'tod</i>	to ignore	v	/ab/
459 <i>ab-tuŋ-'tuŋ</i>	suddenly	adv	/ab/
460 <i>ad-diŋ-'diŋ</i>	to delay, to tarry	v	/ad/
461 <i>aj-jeŋ-'jeŋ</i>	caus. to blow gently as a breeze	v	/aX/
462 <i>al-'majo:ŋ-'majo:ŋ</i>	abreast	adj	/al/
463 <i>al-boŋ-'boŋ</i>	back to back	adj	/al/
464 <i>al-ja:-'si:-ja:-'si:-n</i>	from one hand to another	exp	/al/
465 <i>al-kaŋ-'kaŋ</i>	to abuse one another, to altercate	v	/al/
466 <i>al-kaŋ-'kaŋ-ən</i>	altercation	n	/al/
467 <i>al-kiŋ'doŋ-kiŋ'doŋ</i>	back to back	adv	/al-/
468 <i>al-pa:du-'pa:du-le</i>	by turns, alternately	adv	/al/
469 <i>al-run'daŋ-run'daŋ</i>	pushing one another, jostling, crowding out in disorder	adv	/al/
470 <i>al-sad-moŋ-sad-'moŋ</i>	to elude one another, to out-march one another	v	/al/
471 <i>al-sammoŋ-sammoŋ</i>	to elude one another, to out-march one another	v	/al/
472 <i>an-did-'did</i>	soon, at once	adv	/aX/
473 <i>aŋŋam-'ŋam-ən</i>	the ceremony of giving a name to the baby	n	/aX/
474 <i>ap-pe-'pe</i>	cause of pe, to flow, to let out	v	/ab/
475 <i>ar-majoŋ-majoŋ</i>	abreast	adj	/ar/
476 <i>er-ga'ga:-na</i>	without food	adj	V to V:
477 <i>er-ŋaŋ-'ŋaŋ</i>	stupid (without learning)	adj	/er/
478 <i>er-tam-'tam</i>	inappropriate	adj	/er/
479 <i>ə-bubu-'da:-n</i>	foam, lather	n	/ə/
480 <i>ə-de'de-dəm</i>	sharp	adj	/ə/
481 <i>ə-gam-'gam</i>	crop of birds	n	/ə/
482 <i>ə-ge'ge-n</i>	liver (in children's language)	n	/ə/
483 <i>ə-gim-'gim</i>	crop of birds	n	/ə/
484 <i>ə-gob-'gob</i>	while seated	adv	/ə/
485 <i>ə-güm-'güm</i>	crop of birds	n	/ə/
486 <i>ə-guŋ-'guŋ</i>	crop of birds	n	/ə/
487 <i>ə-ju'ju-n</i>	to be insipid (as fruit), to be wrinkled (skin), to fade (flower)	v	/ə/
488 <i>ə-jaŋ-jaŋ-'lo</i>	hard soil	n	/ə/
489 <i>ə-jaŋ-jaŋ-'mar</i>	skeleton	n	/ə/
490 <i>ə-la:la:-o:l</i>	leaves with which the head is covered	n	/ə/
491 <i>ə-mad-'mad</i>	knot, joint	n	/ə/
492 <i>ə-mad-'mad-je:ŋ</i>	knee joint	n	/ə/
493 <i>ə-mam-'mad</i>	knot, joint	n	/ə/
494 <i>ə-mam-'maŋ-je:ŋ</i>	knee joint	n	/ə/
495 <i>ə-pata-'pata</i>	to be blistered, to crack	v	/ə/
496 <i>ə-sus'sub</i>	false	adj	/ə/
497 <i>ə-tad-'tad</i>	(used as a tag)	[]	/ə/
498 <i>ə-tuŋ-'tuŋ</i>	(prefixed to adjectives or verbs, especially the superlative)	[]	/ə/
499 <i>ə'kurjub-kurjub-u:n</i>	curled hair	n	/ə/
500 <i>ə'sub-ə;sub</i>	sharp	adj	/ə/
501 <i>ədu'du</i>	shouting or exclaiming as a mark of joy	v	/ə/
502 <i>ər-uŋ-'uŋ</i>	to use something as a baling basket to bale water	v	/ər/
Reduplication + Suffixation			
Sora term	English gloss	POS	Notes
503 <i>'ragadəm-'ragadəm-loge</i>	rattling, as the beating of the drum	adv	
504 <i>'ragu:-'ragu:-ga:mle</i>	rattlingly	adv	
505 <i>a:'de-a:'de de:</i>	to be separated	v	
506 <i>ba:ba:-ji</i>	an ascetic	n	
507 <i>ban-'ban-le</i>	carefully	adv	
508 <i>baŋ-'baŋ-le</i>	to be strong, to be prosperous	v	
509 <i>bar-'bar-lo-ge</i>	with a bubbling sound like that heard when water boils	n	

Sora term	English gloss	POS	Notes
510 <i>bar-bar-roge</i>	with a bubbling sound like that heard when water boils	n	l to r
511 <i>bə'doŋ-bə'doŋ-ga:mle</i>	splashingly, noisily	adv	
512 <i>bə'ned-bə'ned-ga:mle</i>	to chatter	v	
513 <i>bə'rum-bə'rum-ga:mle</i>	the blowing of the wind	v	
514 <i>bom-'bom-ta:l</i>	to prowl	v	
515 <i>boŋ-'boŋ-lo-ge</i>	whizzingly	adv	
516 <i>boŋ-boŋ-'ta:l</i>	to lie on one's stomach	v	
517 <i>bur-bur-'pud</i>	to be scattered	v	
518 <i>da'da:-dəm</i>	firm, tight, strong	adj	
519 <i>də'da:-dəm</i>	strong, firm, hard	adj	ə to a
520 <i>dub-'dub-sam-'mar</i>	coward	n	
521 <i>dub-dub-tam-e 'kabjed</i>	to strangulate	v	
522 <i>dun-'dun-dəm</i>	sloping, slanting	adj	
523 <i>dun-'dun-gəd-ən</i>	sloping path	n	
524 <i>gaga:-na:-'jɔŋ</i>	to be time for breakfast	n	
525 <i>gal-gal-'goi</i>	to foment	v	
526 <i>gatar-i-gataran-ge:</i>	in a struggling manner; painfully	adv	i to a
527 <i>ge-'ge-dəm</i>	difficult, unpassable as a bad footpath	n	
528 <i>gig'gid-dəm</i>	to look at one's self	v	j to g to d
529 <i>go-go-mar</i>	a great man	n	
530 <i>go:go:-dəm</i>	large, great, rich	adj	
531 <i>goŋ-'goŋ-ga:m</i>	slantingly	adv	
532 <i>gu-gu-da:n</i>	scratching, scraping	n	
533 <i>gu-gu-deŋ-ən</i>	shout	n	
534 <i>gɔ-'gɔ:-dəm</i>	great, rich	adj	
535 <i>gɔ-'gɔ:-dəm-ən</i>	chieftainship, being a great man	n	
536 <i>je-'je-baŋ-loge</i>	in good health	adv	
537 <i>jiŋ-'jiŋ-ga:mle</i>	like the sound of the blowing wind	adv	
538 <i>ja:ja:n-'rida:n</i>	debts	n	
539 <i>ja:ja:n-'suja:n</i>	debts	n	
540 <i>ja:l-'ja:l-le</i>	having licked	v	
541 <i>jab-'jab-dəm</i>	rough, course	adj	
542 <i>jadib-jadib-ga:mle</i>	in a stream	adv	
543 <i>jakkum-'jakkum-ga:mle</i>	in a hopping manner	adv	
544 <i>jan'jan-le</i>	strongly	adv	
545 <i>je:d-'je:d-loge</i>	pressingly, as beggars do	adv	
546 <i>jel-jel-do:ŋ</i>	strong bodied	adj	
547 <i>jid-jid-'dem</i>	sticky, greasy, oily	adj	
548 <i>jiŋ-jiŋ-'riŋ-ən</i>	gentle breeze	n	
549 <i>jo-jo:-'bar</i>	to sweep with a dry bramble twig	v	
550 <i>kar-'kar-loge</i>	in a trembling manner	adv	
551 <i>keb-'keb-loge-ber</i>	to prattle	v	
552 <i>keker-'ker-loge</i>	in a loud giggling manner	adv	
553 <i>ker-'kar-loge</i>	like some birds' cries	adv	e to a
554 <i>kodi-'kodi-te</i>	there; at some time	adv	
555 <i>koŋ-koŋ-'gaj-ən</i>	the horns of the moon	n	
556 <i>kuk-'kur-jodi:</i>	dove	n	r to k
557 <i>kuku:-'mad-ən</i>	drowsiness	n	
558 <i>kuma:b-'kuma:b-ge</i>	like ashes	adv	
559 <i>la:ŋ-'la:ŋle</i>	nicely, well	adv	
560 <i>lagir-'lagir-ga:mle</i>	indicating the sounds of drums or thunder	adv	
561 <i>lakai-'lakai-ga:mle</i>	[unknown]	adv	
562 <i>lakai-'lakai-ga:mle</i>	[unknown]	adv	
563 <i>lakur-'laker-ga:mle</i>	actively, strongly	adv	e to u
564 <i>lal'la:r-ga:mle</i>	in solidified state	adv	r to l

Sora term	English gloss	POS	Notes
565 <i>le:ŋ-'le:ŋ-ga:mle</i>	with a gentle slope	adj	
566 <i>lo-'lo:-ba:</i>	place of rest, resting; cultivation	n	
567 <i>lo-'lo:-pəŋ</i>	to give rest to the stomach	v	
568 <i>me-me:-'kul-ən</i>	projecting lumps, resembling breasts, supporting the boilers	n	
569 <i>mede:r-'mede:r-de:</i>	to become dim	v	
570 <i>medo:r-medo:r-'jəŋ-ən</i>	the evening sunlight	n	
571 <i>mer-'mer-loge</i>	crying piteously	adv	
572 <i>mimir-bud--ən</i>	a kind of insect that hops	n	
573 <i>muy-muy-dəm</i>	to be detached, to detach oneself	v	
574 <i>muy-muy-le</i>	[unknown]	[]	
575 <i>ŋa padəm-'padəm-le</i>	to amble	adv	
576 <i>ŋakur-'ŋakur-ga:mle</i>	the sound produced by munching or chewing	n	
577 <i>ŋaŋ-'ŋaŋ-ga:m</i>	without any movement	adv	
578 <i>ŋaŋiŋ-'ŋaŋiŋ-le</i>	proudly	adv	
579 <i>ŋidur-'ŋadur-ge</i>	glittering (as the eyes of a cat during night)	adv	i to a
580 <i>ŋidur-'ŋudur-ge</i>	glittering (like a ghost's eye)	adv	i to u
581 <i>ŋoŋ-ŋoŋ-'je:ŋ</i>	to stand on tip-toe	v	
582 <i>ŋad-'ŋad-dəm</i>	silently	adv	
583 <i>ŋar-'ŋar-loge</i>	with a quaver	adv	
584 <i>pa'ŋad-pa'ŋad-ga:mle</i>	in a whining manner	adv	
585 <i>paŋe-paŋe-ga:mle</i>	in a wheezing manner	adv	
586 <i>par-'par-de</i>	to sparkle, to send out sparks	v	
587 <i>par-'par-loge</i>	scorchingly, crackling	adv	/loge/
588 <i>pe:r-'per-lo-ge</i>	abundantly	adv	V: to V
589 <i>pijul-'pijul-ga:m-le</i>	in a sparkling manner	adv	
590 <i>pim'piŋ-da:</i>	to sparkle	v	ŋ to m
591 <i>pim'piŋ-ge</i>	in a tinkling manner	adv	ŋ to m
592 <i>pip'pirroge</i>	bright	adj	r to p; l to r
593 <i>pir-'pir-roge</i>	bright	adj	l to r
594 <i>po'de-pa-de-ge</i>	in coils, in fold	adj, adv	o to a
595 <i>po:'pa:-loge</i>	noisily	adv	o to a
596 <i>poi-'poi-loge</i>	effusively, vigorously, freely	adv	
597 <i>rakkib-rakkib-ga:mle</i>	like the sound produced by biting	adv	
598 <i>rud-'rud-loge-'ber</i>	to prattle	v	
599 <i>rum-'rum-ga:mle</i>	rapidly, with the sound produced while dancing	adv	
600 <i>ruŋ-'ruŋ-pəŋ</i>	to be sickening	v	
601 <i>rure-'rure-de:</i>	to crackle	v	
602 <i>sabui-'sabui-ga:mle</i>	so as to produce the noise heard in sucking eagerly	adv	
603 <i>sai-sai-'laŋ</i>	to help in a contest	v	
604 <i>sai-sai-laŋ-'mar-ən</i>	arbitrator	n	
605 <i>saŋe:-'saŋe:-ga:mle</i>	in a breathless manner	adv	
606 <i>ser-'ser-dəm</i>	to wriggle oneself through a narrow passageway	v	
607 <i>sid-sa:d-loge</i>	in a hurry	adj	i to a:
608 <i>sir-sa:r-tam</i>	to eject small drops of saliva while speaking	v	i to a:
609 <i>sir-sar-loge</i>	in spray	adv	i to a
610 <i>sis'sid-laŋ</i>	to look on, to cast longing looks so as to produce a rustling sound with reference to mice, birds	v	d to s
611 <i>so:r-so:r-loge</i>		adv	
612 <i>tad-tad-'maj</i>	to strike on one's chest to indicate astonishment, grief	v	
613 <i>tar-tar-re</i>	awake	adj	le
614 <i>ted-'ted-jeŋ</i>	to fidget	v	
615 <i>toʔo:d-toʔo:d-'ber-ən</i>	verbal message	n	
616 <i>tur-'tur-a:l-ən</i>	the cry of the people watching the crops on the hillside	n	
617 <i>tur'tur-te</i>	to crush, to bruise	v	

Reduplication + Incorporated Noun			
Sora term	English gloss	POS	Notes
618	<i>ba:-l-ba:-l-'aŋ-ən</i>	firewood to burn a dead body	n
619	<i>ba:-l-ba:-l-'bo:ŋ-ən</i>	roasting a buffalo	n
620	<i>ba:-l-ba:-l-'jo-n</i>	grilled fish	n
621	<i>ba:-l-ba:-l-'jo:-ba</i>	to grill fish	v
622	<i>ba:-l-ba:-l-'jo:-'mar-ən</i>	man who grills fish	n
623	<i>bud-'bud-timər</i>	express insects or worms	n
624	<i>buŋ-buŋ-bud-ən</i>	wood-hover, humming bee	n
625	<i>doi-doi-lu:d-ən</i>	earring	N
626	<i>dub-dub-'la</i>	to keep the tail between the legs	N
627	<i>dub-dub-mad-ən</i>	blindman's buff	n
628	<i>dub-dub-mar-ən</i>	player who is blindfolded	n
629	<i>ə-beb-'ba:b-ə-beb-'la:m</i>	with a loud voice, crying loudly	adj
630	<i>ga'ga:-na:-n</i>	eating, food	n
631	<i>gal-gal-ta:ŋ-ən</i>	yoke of an oxen	n
632	<i>gar-gar-'bud-ən</i>	an insect that bores holes	n
633	<i>gar-gar-'mar-ən</i>	beggar	n
634	<i>gar-gar-'ruŋ-ən</i>	rice given as alms	n
635	<i>giggim-'mad</i>	evil eye	n
636	<i>god-'go:d-na:-n</i>	bath, ablution	n
637	<i>guŋ-guŋ-'mar</i>	hunter	n
638	<i>jer-jer-'de:sa:-n</i>	foreign country	n
639	<i>jiŋ-jiŋ-riŋ-ən</i>	the wind that blows	n
640	<i>ju-'ju:-bo:j-ən</i>	the goddess of smallpox	n
641	<i>ja:ja:-'mar-ən</i>	debtor	n
642	<i>jan-jan-'neb-ən</i>	a kind of tree	n
643	<i>jaŋ'jaŋ-mar-ən</i>	a strong-limbed man	n
644	<i>jeŋ-'jaŋ-lo-ge-'ber</i>	to talk confusedly	v
645	<i>ji-'ji-aŋ-ən</i>	a bundle of sticks, faggot	n
646	<i>ji-'ji-jo-n</i>	broom	n
647	<i>jid-jid-'ber-ən</i>	incoherent talk; balder dash	n
648	<i>jiŋ-jiŋ-'maŋ</i>	to carry a pot by means of suspenders attached to it	v
649	<i>jul-jul-boj-ən</i>	[unknown]	[]
650	<i>ka:'ka:-mim'mar</i>	coward	n
651	<i>ken-ken-siŋ-ən</i>	school-boy	n
652	<i>ken-ken-su:ŋ-ən</i>	school	n
653	<i>kib-kib-'je:m</i>	to hold one's breath	v
654	<i>ko-ko'o:l-ən</i>	a roll of leaves	n
655	<i>koi-koi-o:l-ən</i>	a roll of leaves	n
656	<i>küb-'küb-ji:-n</i>	incisor tooth	n
657	<i>kub-kub-'mad</i>	to work complainingly, lit to shut the eyes	v
658	<i>kub-kub-'mu</i>	to close the nose	v
659	<i>kuj-kuj-o:l-ən</i>	a roll of leaves	n
660	<i>kukkur-'tam</i>	to kiss	v
661	<i>kukkur-'tuŋ-ən</i>	pleiades	n
662	<i>kuku:-'mad</i>	to be drowsy	v
663	<i>kur-'kuri-'ne:b-ən</i>	a kind of tree	n
664	<i>kur-kur-'jo</i>	to gnaw, to bite	v
665	<i>kur-kur-'ji:-n</i>	incisor teeth	n
666	<i>kŋŋ-kŋŋ-'ar-ən</i>	a sharp pointed stone	n
667	<i>kŋŋ-kŋŋ-bo:b-ən</i>	ceremony of shaving the head of a baby	n
668	<i>kŋŋ-kŋŋ-bo:b-mar-ən</i>	barber	n
669	<i>la:la:-'laŋ-ən</i>	a digging stick which is sharpened at one end	n

Sora term	English gloss	POS	Notes
670 <i>le:ŋ-'le:ŋ-mar-ən</i>	a dandy	n	
671 <i>le:ŋ-le:ŋ-'bur-ən</i>	steep hill	n	
672 <i>le:r-le:r-'lud-ən</i>	tragus of the ear	n	
673 <i>leŋŋed-'leŋŋed-'ber</i>	to mince words	v	
674 <i>lə'di-lə'di-ber</i>	to chatter	v	
675 <i>liŋ-liŋ-'bur-ən</i>	valley	n	
676 <i>me-me:-'raj-ən</i>	a stringed instrument with round gourds resembling breasts	n	
677 <i>mum'mur-ne:b-ən</i>	a kind of tree	n	r to m
678 <i>mur-mur-ne:b-ən</i>	a kind timber tree	n	
679 <i>ŋaŋ-ŋaŋ-'ji</i>	to grin, to show one's teeth	v	
680 <i>ŋid-ŋid-'ber</i>	to stammer, to babble, to falter	v	
681 <i>ŋid-ŋid-ber-mar-ən</i>	stammerer	n	
682 <i>ŋe-'ŋe-kur-'tid-ən</i>	a kind or bird	n	
683 <i>ŋid-ŋid-'ber-ən</i>	balder-dash	n	
684 <i>pa:-'pa:-tam</i>	to open the mouth my force	v	
685 <i>pa:-'pa:-u:-'boj-ən</i>	a woman that has combed and parted her hair	n	
686 <i>pa:pi:-'ka:b-ən</i>	a piece of cloth which children wear covering their genitals	n	a to i
687 <i>pa:pi:-'sin-ən</i>	a piece of cloth which children wear covering their genitals	n	a to i
688 <i>par-par-ne:b-ən</i>	a kind of tree	n	
689 <i>pempen-'bud-ən</i>	a variety of dragonfly	n	ŋ to m
690 <i>pim'piŋ-da:-n</i>	a bubble of water	n	ŋ to m
691 <i>po:-po:-'mu</i>	having sunken nose	v	
692 <i>rad-rad-'mad</i>	to have red eyes	v	
693 <i>red-red-'u:-n</i>	hair-knot	n	
694 <i>rub-rub-'pura:da:</i>	to have a palpitating heart, to be agitated in the mind	v	
695 <i>rum-'rum-təd-ən</i>	smoldering fire	n	
696 <i>rup-rup-pura:da:</i>	to have a palpitating heart, to be agitated in the mind	v	
697 <i>sa-sa:-'ji</i>	to grin exposing teeth	v	V to V:
698 <i>sa-sa:-'mad</i>	to open the eyes	v	V to V:
699 <i>sa-sa:-'tam</i>	to open the mouth	v	V to V:
700 <i>sa:d-sa:d-ne:b-ən</i>	glade	n	
701 <i>sab-sab-'mar-ən</i>	carpenter	n	
702 <i>sai-sai-'mar-ən</i>	assistant	n	
703 <i>sas'sar-ga'dəŋ</i>	to come to the edge	v	r to s
704 <i>sassa:r-'u:</i>	to comb hair	v	r to s
705 <i>sassa:r-u:-'boi</i>	the woman that has her hair dressed nicely	n	r to s
706 <i>sassar-'pə:-n</i>	roasted cake	n	r to s
707 <i>sim-sim-'ne:b-ən</i>	a fir-like tree	n	
708 <i>sisi malla:-n</i>	a variety of small knives	n	
709 <i>soi-soi-'aŋəl</i>	fuel	n	
710 <i>soi-soi-'mar-ən</i>	hunter	n	mar
711 <i>sub-sub-ber</i>	lies	n	ber
712 <i>tar-ta:r-jəŋ-ən</i>	sunlight	n	V to V:
713 <i>ted-ted-'par</i>	to swing the bow-string; to practice divination	v	
714 <i>te-le-n-'te-le-n-ŋa</i>	to walk in a staggering or swinging manner	v	
715 <i>tu-tu:-daŋ</i>	to climb by embracing	v	
716 <i>tul-tul-'je:ŋ</i>	to lean on something by holding a stick	v	
717 <i>tuj-tuj-'mar-ən</i>	hunter	n	
718 <i>tuj-tuj-püda:ra:-n</i>	a palpitating heart; an agitated mind	n	
719 <i>tuj-tuj-sassa:i</i>	most willingly	adv	
Reduplication + Incorporated Adjective/Verb			
Sora term	English gloss	POS	Notes
720 <i>joŋ-joŋ-am'me:</i>	to make equal; to compare	v	
721 <i>puŋ-'puŋ-sa'red</i>	to be swollen hard	v	

Reduplication+ Infixation			
Sora term	English gloss	POS	Notes
722 <i>dedij-deŋ-ən</i>	ringing noise in the ear, produced by the presence of spirits	n	/ed/
723 <i>derer-der</i>	to set as a prop, almost vertically	v	/er/
724 <i>də'niŋ-dij-ən</i>	dragging; attractin	N	/ən/
725 <i>dənuł-'dul-ən</i>	payment; compensation	n	/ən/
726 <i>dəriŋ-'dij</i>	a place or vessel to cook in	n	/ər/
727 <i>dəruŋ-'duŋ</i>	[unknown]	n	/ər/
728 <i>dəruŋ-duŋ-juŋ-'se:ŋ-ən</i>	the east	n	/ər/
729 <i>dəruŋ-duŋ-juŋ-ən</i>	the rising sun	n	/ər/
730 <i>dəvəl-'döl-ən</i>	ambush	n	/ər/
731 <i>dəvəl-'döl-ən</i>	use something as a lid	v	/ən/
732 <i>gəna:-ga:-n</i>	food, drink	n	/ən/
733 <i>gənaŋ-'gab-ən</i>	a bundle, a packet	n	/ən/
734 <i>gənu:-gu:</i>	a garden bed or plot in which seeds are planted	n	/ən/
735 <i>gəram-ga:m</i>	meaning	n	/ər/
736 <i>gəriŋ-'gij-ən</i>	window, hole to peep through	n	/ər/
737 <i>gərob-'go:b</i>	seat	n	/ər/
738 <i>gəvəd-gəd-'da:-n</i>	a basket for balancing water	n	/ər/
739 <i>je:ro:d-jo:d-re:-mɪn</i>	ointment	n	/er/
740 <i>janəm-juəm-ən</i>	food; anything that is eaten	n	/ən/
741 <i>kənal-'kal</i>	trouble	n	/ən/
742 <i>kənəd-'kəd</i>	relating to birth	adj	/ən/
743 <i>kənəd-'kəd-ən</i>	birth; birthing ceremony	n	/ən/
744 <i>kənəŋ-'kəŋ-ən</i>	razor	n	/ən/
745 <i>kəruđ-'kuđ</i>	relating to birth (time, place)	adj	/ər/
746 <i>ləla:m-la:m-ən</i>	trellis	n	/əl/
747 <i>ləlu:-'lu:</i>	to serve as a means of taking a rest	v	/ər/ to /əl/
748 <i>lələŋ-'ləŋ</i>	to remove the outer layer	v	/ər/ to /əl/
749 <i>lənu:-'lu:-na:-'su:ŋ-ən</i>	rest-house	n	/ən/
750 <i>mənəl-'mɛl-ən</i>	examination, inspection	n	/ən/
751 <i>jeni:-'ji:-n</i>	purchase	n	/ən/
752 <i>jenəŋ-juŋ-ən</i>	teaching; benefit, gain	n	/ən/
753 <i>pənəŋ-puŋ-ən</i>	the act of swelling	n	/ən/
754 <i>pərad-pad-ən</i>	a means of cross a stream; a raft or boat	n	/ər/
755 <i>rənu:-ru:-n</i>	an ornament	n	/ən/
756 <i>rənu:-ru:-n</i>	serving food	n	/ən/
757 <i>sənəm-sɪm-ən</i>	praise, adoration	n	/ən/
758 <i>səno:-so:-si:-n</i>	a kind of children's game	n	/ən/
759 <i>sənoi-soi-tuŋ-ən</i>	antics, a kind of dance	n	/ən/
760 <i>sənu-'su:-n</i>	end, close, finish	n	/ən/
761 <i>səran-'san-ən</i>	a passage or way	n	/ən/
762 <i>səru:-'su:-n</i>	place of fighting, battlefield	n	/ən/
763 <i>tanteji-'tanda.teji-</i>	they barter	v	/da/
764 <i>təŋəŋ-təŋ-ən</i>	sorcery, witchcraft	n	/ən/
765 <i>tənəm-tɛm-ən</i>	sale, act of selling	n	/ən/
766 <i>tənɪd-tɪd-ən</i>	beating, trashing	n	/ən/
767 <i>tənɪj-tij-ən</i>	gift, payment, offering	n	/ən/
768 <i>təno:j-to:j-ən</i>	stake, wager	n	/ən/
769 <i>təno:l-to:l-ən</i>	a rope with which a cow or any other animal is tied to a post	n	/ən/
770 <i>tənəl-tol-ən</i>	to have sexual intercourse with, to marry, to live with a man	n	/ən/
771 <i>tənub-tub-ən</i>	sexual intercourse	n	/ən/
772 <i>tənub-tub-ən</i>	washing clothes	n	/ən/
773 <i>tənul-tul-ən</i>	prop	n	/ən/

Sora term	English gloss	POS	Notes
774 <i>tənum-tum-ən</i>	collection	n	/ən/
775 <i>tənuy-tuy-ən</i>	ability, competence, aptitude, efficiency	n	/ən/
776 <i>tənur-tur-ən</i>	watching	n	/ən/
777 <i>təns-tu-n</i>	coitus	n	/ən/
778 <i>tənsɪ-tɪl-ən</i>	the act of tying, bond, an ornament	n	/ən/
779 <i>tərab-tab-la:ŋ-ən</i>	corkscrew	n	/ət/
780 <i>tərub-tub-ən</i>	expedient	n	/ət/

Fixed Segment Reduplication

Sora term	English gloss	POS	Notes
781 <i>'əjɪd-tɪd</i>	a little, a trifle	n	/t/
782 <i>'arɪd-tɪd</i>	a little, a trifle	n	/t/
783 <i>'arramle-'borramle</i>	having gathered into a heap	exp	/b/
784 <i>'so:ra-'mo:ra</i>	the Sora and other such people	n	/m/
785 <i>'so:ra-'mo:ra-jo:ɔ:i-'bad-əm</i>	the Sora and the Oriyas	n	/m/
786 <i>al'ja:ble-mal'ja:ble</i>	having touched each other	exp	/m/
787 <i>andəla:i-'sundəla:i</i>	the bubbling sound produced by boiling water	n	/s/
788 <i>arɪd-tɪd-'daŋ</i>	a small piece of	n	/t/
789 <i>arjɔ:-tirjɔ</i>	to rage	v	/t/
790 <i>ersu-'kurse-mar</i>	miser	n	/k/, e to u
791 <i>ersu-'kursu</i>	mumbling, grumbling	n	/k/, e to u
792 <i>əjɪd-tɪd</i>	a little	n	/t/
793 <i>gad-'sad</i>	to settle an affair	v	/s/
794 <i>la'kudle-ji'kudle</i>	holding in the arms	adv	
795 <i>legini-'bogini</i>	strong, healthy	adj, adv	/b/
796 <i>mɪj-lɪj</i>	to detach	v	/l/
797 <i>ja:-'je:ŋ-te-pa:-'je:ŋ-te</i>	to toddle, to walk	v	/p/
798 <i>oroboro-ge</i>	in disorder	adj	/b/
799 <i>pad-'kad</i>	distribute the flesh of a buffalo	v	/k/
800 <i>po'de:le-mo'de:le-'sid</i>	to twist and bend, i.e. to kill	v	/m/
801 <i>ri'keɔ-bɔ'keɔ</i>	the creaking sound of doors	n	ri to bo
802 <i>sə'dir-ga:mle-pə'dir-ga:mle</i>	thin	adv	/p/
803 <i>so:la:-n-mo:la:-n</i>	evil spirits	n	/m/
804 <i>tanliŋ-'manliŋ</i>	cattle	n	/m/

Unfaithful Reduplication

Assimilation

Sora term	English gloss	POS	Notes
805 <i>beb-'bed</i>	to feel thirsty	v	b to d
806 <i>bo:b-'bo:ɔ</i>	to stir water; to prowl	v	ɔ to b
807 <i>bub-'bud-ən</i>	an insect, a worm	n	d to b
808 <i>bub'bar</i>	to peep	v	r to b
809 <i>bur-'ber</i>	to churn	v	u to e
810 <i>daddaŋ-ən</i>	uncle	n	ŋ to d
811 <i>den de:ŋ-ən</i>	fibres of the sheathing petiole of the sago palm	n	n to ŋ
812 <i>dub-'dəb</i>	disgusting	adj	u to ə
813 <i>gag-'gad</i>	to cut repeatedly	v	d to g
814 <i>gɪg'gɪ</i>	to see attentively	v	ɔ to g
815 <i>gɪg'gɪ-ən</i>	sight	n	ɔ to g
816 <i>gog'go:d</i>	to scratch the ground as a cock does	v	d to g
817 <i>jaŋ'jad</i>	to swipe sweat, tears, water; to cease as rain	v	d to ɔ
818 <i>jaŋ'jal</i>	to become fat and strong	v	l to ɔ
819 <i>kilai-loge-kilaŋ-loge</i>	[unknown]	[]	i to ŋ
820 <i>kok'kod</i>	to droop or hang down as an ear of corn	v	d to k

Sora term	English gloss	POS	Notes
821 <i>kok'kor</i>	a big basket which holds 200 measures	n	r to k
822 <i>kok'kum</i>	collected, gathered, folded	adj	m to k,
823 <i>kuk-'kur-ən</i>	dove	n	r to k
824 <i>kuk'kum</i>	to collect, to hold or to press with both hands	v	m to k
825 <i>lal'la:r-ən</i>	scum on the surface of liquids	n	r to l
826 <i>lal'lad</i>	to press	n	d to l
827 <i>lul'lad</i>	to lie down, to rest	v	d to l
828 <i>mam-'mad-ən</i>	a knot, a joint, a node	n	d to m
829 <i>mam'mab</i>	to push down, to thrown down	v	b to m
830 <i>mim-'mib</i>	to be sleepy	v	m to b
831 <i>mim-'mir-ən</i>	a kind of insect that hops	n	r to m
832 <i>ɲo:ŋ-ɲo:ɲ-ən</i>	buffalo (children's language)	n	ɟ to ŋ
833 <i>pap'par-ən</i>	grasshopper	n	r to p
834 <i>pem'peŋ</i>	very dark	adv	ŋ to m
835 <i>pem'peŋ-ən</i>	darkness	n	ŋ to m
836 <i>pim'piŋ</i>	to produce sounds like the tinkling of a bell	v	ŋ to m
837 <i>pim'piŋ-ən</i>	a small bell	n	ŋ to m
838 <i>pip-pid</i>	to cast frequently in small quantities	v	d to p
839 <i>pup'pud</i>	to winnow so as to separate	v	d to p
840 <i>sa:s-'sa:d</i>	to make room for	v	d to s
841 <i>san-saŋ-ən</i>	turmeric	n	ŋ to n
842 <i>sas'sa:l</i>	to clear the ground of grass and weeds	v	l to s,
843 <i>ses'seŋ</i>	to swift well, to winnow thoroughly	v	ŋ to s
844 <i>sis'sid</i>	to look on, to cast longing looks	v	d to s
845 <i>sis'sid̥</i>	flesh, meat (children's language)	n	d̥ to s
846 <i>sis'sid</i>	to extricate, to exorcize	v	d to s
847 <i>sos'so:b</i>	to lie, to cheat	v	b to s
848 <i>sos'so:r</i>	rough	adj	r to s
849 <i>sus'sub</i>	false, in vain, in jest	adj	b to s
850 <i>sus'sud</i>	to take up with both the hands and throw out	v	d to s
851 <i>tat-taɖ</i>	to lull a baby to sleep	v	ɖ to t
852 <i>tet'ten</i>	there	adv	n to t
853 <i>tot'toɟ</i>	to set in a line	v	ɟ to t
854 <i>tun'tum-ən</i>	bloodsucker	n	m to n
855 <i>tuj-taŋ-ən</i>	work that has not been completed	n	u to a
856 <i>tur-'tɔr-ən</i>	watch	n	u to ɔ
857 <i>tut-tuŋ-ən</i>	star	n	ɟ to t
858 <i>tut'tud</i>	to crush, to bruise	v	d to t
859 <i>tut'tud-ən</i>	squirrel	n	d to t
860 <i>tuttum-ən</i>	bloodsucker	n	m to t
861 <i>tuttun-deŋari-n</i>	a kind of worm	n	n to t
862 <i>tuttur</i>	to watch, to guard	v	r to t
863 <i>mom'mo:ri:-n</i>	foggy black vapour	n	r to m
Vowel Change			
Sora term	English gloss	POS	Notes
864 <i>ba:ro:i-ba:ra:i</i>	to utter, to give forth a rumbling sound	v	o to a
865 <i>bariŋ-barəŋ</i>	fullness; dazzling light; harsh sound	n	i to a
866 <i>bariŋ-'baraŋ</i>	dazzling, resplendent	adj	i to a
867 <i>bə'riŋ-bə'ra:ŋ</i>	to dazzle as the sun or lightning	v	i to a:
868 <i>da:di:-n</i>	uncle	n	a to i
869 <i>dai'diŋ-da:'daŋ</i>	the sound produced when trees are cut down	n	i to a
870 <i>də'da</i>	strong, firm, hard	adj	ə to a
871 <i>dikka-'dakka</i>	hurriedly	adv	i to a
872 <i>god-'go:d</i>	to form ruts	v	o: to o

Sora term	English gloss	POS	Notes
873 <i>ji-ʒa-n</i>	a bundle, a packet	n	i to a
874 <i>kasula:-'kasela:</i>	the sound of something falling into the well	n	u to e
875 <i>ke:ka:</i>	stupid, insane	adj	e to a
876 <i>ko'ten-ko'ten</i>	then and there	adv	e to ε
877 <i>kokede-'kakode</i>	crooked, curved	adj	o to a; e to o
878 <i>kudub-'kadub</i>	all	adj	u to a
879 <i>laku-lake</i>	fertile	adj	u to e
880 <i>lasso:-lassɔ̃</i>	to become lowered, to sink down; to diminish	v	o to ʊ
881 <i>lasso:-lassɔ̃</i>	to get down, to descend	v	o to ʊ
882 <i>lo:ŋ-er-'la:ŋ-ər</i>	to be sunken (as the eyes_	v	o to a; e to ə
883 <i>luŋər-'luŋər</i>	[unknown]	[]	u to a
884 <i>mali:-'mala:i</i>	to be bright, to shine	v	i: to a:i
885 <i>me:ŋ-ma:ŋ</i>	the humming of the bees or other insects	n	e to a
886 <i>medo:r-'mado:r</i>	glitteringly	adv	e to a
887 <i>mojed-'mojəd</i>	recently	adv	e to ə
888 <i>mujər-'majər</i>	having given sharp glances	adv	u to a
889 <i>ob-uŋ-ten-'ab-uŋ-ten</i>	roll lazily	v	o to a
890 <i>obuŋ-le-'abuŋ-le-</i>	turing this side adn that side	adv	o to a
891 <i>musə-'musa</i>	Ah! Dear me!	exp	u to e
892 <i>pə:pi:-n</i>	female private parts (in children's language)	n	a to i
893 <i>pata:-'pate</i>	to become blistered	v	a to e
894 <i>po'se:ge-pə'se:ge</i>	in whispers	adv	o to ə
895 <i>pod'ded-ten-pad'ded-ten-</i>	the twisting of the neck by an evil spirit	n	o to a
896 <i>reb-rab</i>	the cracking sound produced by a tree or its branches falling down	n	e to a
897 <i>ri'jub-ra'jub</i>	the sound of frying	n	i to a
898 <i>ri'ked-rə'ke:d</i>	the sound produced by a heavy beam, etc falling down suddenly	n	i to ə; V to V:
899 <i>rob-'rab</i>	to rustle	v	o to a
900 <i>rob-'reb</i>	to produce the sound of snapping or cracking	v	o to e
901 <i>rob-rab-loge</i>	with a rustling sound	adv	o to a
902 <i>rədemai-'rademai-</i>	the sound of cracking	n	ʊ to a
903 <i>rum-'ram</i>	to tread, to trot, to prance	v	u to a
904 <i>sə'gog-səga:g</i>	the sound of sobbing	n	o to a:
905 <i>sir-'sa:r</i>	to be spilt, to sprinkle	v	i to a:
906 <i>sir-'sa:r-ən</i>	drops, spray	n	i to a:
907 <i>so:b-sa:b</i>	rustling	n	o to a
908 <i>so:b-sa:b</i>	the padding sound when a tiger or cat stalks on the ground	n	o to a
909 <i>so:r-'sa:r</i>	the pattering sound caused by the rapid movement of birds	n	o to a
910 <i>so:r-sa:r-ən</i>	rustling sound	n	o to a
911 <i>səm-'süm</i>	to stroke with the hand	v	ʊ to ü
912 <i>suka:l-saka:l-ən</i>	early	adv	u to a
913 <i>tɪŋa:b-tɪŋa:b</i>	at once, hurriedly	adv	i to a
914 <i>tui-'tuj</i>	to dust, to flick, to snuff (a wick)	v	j to i
915 <i>tui-'tuj-ən</i>	a star, a planet, a meteor	n	j to i
916 <i>u-gai-lo-ge-e-gai-lo-ge</i>	groaning	adv	u to e
917 <i>ume:ŋ-əme:ŋ</i>	very active, very dexterous	adj	u to ə

Vowel Lengthening			
Sora term	English gloss	POS	Notes
918 <i>aŋa:n-te-'aŋan-te</i>	when-ever	adv	V: to V
919 <i>gēmer-'ge.me:r</i>	itching, irritation felt when the head is lousy	n	V to V:
920 <i>go'go:</i>	to become large, big, great, wealthy	v	V to V:
921 <i>gu-gu:</i>	to call, to cry as a bird	v	V to V:
922 <i>gu-gu:</i>	to plant	v	V to V:
923 <i>gu-gu:</i>	to build	v	V to V:
924 <i>gō-'gō:-n</i>	greatness	n	V to V:
925 <i>jo:ŋ-'jo:ŋ</i>	to pour rice, etc. into a vessel	v	V to V:
926 <i>ju-'ju:</i>	to droop	v	V to V:
927 <i>ko'ko:</i>	to be defeated	v	V to V:
928 <i>mədəŋ-mə'de:ŋ</i>	globule	n	V to V:
929 <i>rad-'ra:d</i>	to chop	v	V to V:
930 <i>ri-'ri:</i>	diminutive preface	n	V to V:
931 <i>ri-'ri:!</i>	a cry to call a dog	n	V to V:
932 <i>saŋ-'sa:ŋ</i>	to season with turmeric	v	V to V:
933 <i>saŋ-'sa:ŋ-ən</i>	turmeric	n	V to V:
934 <i>sar-'sa:r</i>	to comb, to preen (as birds)	v	V to V:
935 <i>sisi:-n</i>	a glass bottle or phial	n	V to V:
936 <i>so-'so:</i>	to conceal oneself; to be concealed	v	V to V:
937 <i>saŋe-'saŋe:</i>	gasping, panting	adj	V to V:
938 <i>su-'su:</i>	to begin work	v	V to V:
939 <i>su-'su:</i>	to incite, to provoke	v	V to V:
940 <i>su-'su:</i>	to quarrel	v	V to V:
941 <i>ta:d-tad</i>	to hit, to give a box on the ear	v	V: to V
942 <i>tar-ta:r-ən</i>	white leprosy	n	V to V:
Distinct Loop Reduplication			
Sora term	English gloss	POS	Notes
943 <i>ban-ban-'je:ŋ-len-ban-ban-si-len</i>	cautiously, lit. taking care of legs and arms	adv	
944 <i>duŋ-'duŋ-jeŋ-'jeŋ</i>	like a storm	adv	
945 <i>ken-'ken-len-rai-rai-len</i>	singing	[]	
946 <i>kur-'kur! da:-'da:!</i>	used in called fowls	exp	
947 <i>lo:ŋ-'lo:ŋ-len-toi-'toil-ən</i>	touching one another; adjacent	adv	
948 <i>pui-pui-pus-tat'tad</i>	exclamation of hunters to incite dogs to pursue hares	n	d to t
949 <i>ru-ru:-e:te:-n-ti-ti:-e:ten</i>	distribute	v	
950 <i>rum-'rum-teji-jo-jo:-teji</i>	pushing and stuffing	n	
951 <i>siuŋ-'siuŋ-ŋoi-'ŋoi</i>	the cry of a kind of mina	n	
952 <i>so-'so:-a:-du-du:-a:</i>	quick! hide!	exp	
953 <i>so:b-'so:b-so:r-'sa:r</i>	the cry of the wild fowl while it is on the ground	n	o to a
954 <i>tij-'tij-tis-'tis</i>	used to exhort cattle while driving	n	
Triplification			
Sora term	English gloss	POS	Notes
955 <i>bor'ba:r-bor-'ram</i>	loudness in speaking; bubbling of water	exp	o to a
956 <i>dub-dub-'dib-ən</i>	hide and go seek	n	u to i?
957 <i>duŋ-'diŋ-duŋ-'lam-loge</i>	like thunder	n	u to i
958 <i>go-go-goi</i>	to a great extent	adv	
959 <i>iŋa:-iŋa:-'iŋa:</i>	the cry of a newborn baby	n	
960 <i>ji-ja:-ja:</i>	whatever, anything	pron	i to a
961 <i>ke-ke-'ke</i>	scream of a peafowl	n	
962 <i>kur-kur-'kur</i>	cooing of the doves	n	
963 <i>pur-par-pur-lam-ge</i>	in common, ragingly	adv	u to a

Sora term	English gloss	POS	Notes
964 <i>sid-'sid-sid-'lam-ge</i>	commotion, turmoil, tumult	n	
965 <i>sir-sa:r-sira:m-ge</i>	the simultaneous rushing out of the birds	n	i to a:
966 <i>so:r-sa:r-so:ram-ge</i>	expressing the cautious movements of thieves	adv	o to a to o

Ordered reduplication

Sora term	English gloss	POS	Notes
967 <i>anriḍ-tiḍ-'anriḍ-tiḍ</i>	very little	n	
968 <i>beḍe-'beḍe</i>	satisfactorily, enough	adv	
969 <i>beḍe-'beḍe</i>	to surfeit	v	
970 <i>bi:ŋ-'bi:ŋ-ba:ŋ-'ba:ŋ</i>	denotes the sound produced when one is slapped on the cheek	n	i to a
971 <i>du'du-du'du</i>	in haste	adv	
972 <i>jiŋ-'ja:ŋ-jiŋ-'ja:ŋ-ga:mle</i>	in a jingling manner	adv	i to a
973 <i>ju-'ju:-'je-'je</i>	to be wrinkled and puckered	v	
974 <i>jaŋ'jaŋ-jaŋ'jaŋ-dəm</i>	solid, hard, arid	adj	
975 <i>kʔo:b-'kʔo:b-kʔe:b-'kʔe:b</i>	the cry of a crane	n	o to e
976 <i>piŋ'piŋ-paŋ'paŋ</i>	to be sunken, as the eyes of a very old erson	v	
977 <i>ta:p-'ta:p-ta:p</i>	the sound of slapping on the cheeks	n	
978 <i>gu'gu:-n</i>	building	n	V to V:

Requiring further explanation

Sora term	English gloss	POS	Notes
979 <i>adaŋ-'da:n</i>	honey	n	
980 <i>am'daŋ-təŋi-da:-'lud-teji</i>	they hear	exp	
981 <i>ə'da:ja:-do:ŋ-go-'da:ja-do:ŋ</i>	to swear	v	
982 <i>ə'tudu:n</i>	the tuft on the head of a bul-bul, or a cock	n	
983 <i>guŋgu:-n</i>	cattle shed	N	
984 <i>kekke'jub-kekke-'keb</i>	the crowing of a cock	n	
985 <i>kək'kəi</i>	[unknown]	[]	i to k
986 <i>lu'l'u</i>	to take rest	v	
987 <i>mom'mo</i>	a ghost (children's language)	n	
988 <i>mom'mo:-n</i>	dumb person	n	
989 <i>ru:-'e:te:n-to:-'e:te:n</i>	wore ornaments	v	ru to to
990 <i>ru:-le-'la:-le</i>	pouring out	adv	ru to la
991 <i>titti:-n</i>	tamarind	n	
992 <i>tul'tu</i>	to crush	v	
993 <i>tul'tu</i>	to shake	v	

Not true reduplication

Sora term	English gloss	POS	Notes
994 <i>bab-'bai</i>	vomiting	n	
995 <i>bab-bə'job</i>	purring of a cat	n	
996 <i>bo:te-do:ŋ-bo:te</i>	any	pron	
997 <i>duŋ-dəm-'da</i>	natural spring of water	n	
998 <i>duŋ-dəm-'da:-'lo:-n</i>	marsh	n	
999 <i>piŋ'puŋ</i>	to be niggardly	v	i to u
1000 <i>uŋ'tuŋ</i>	to finish	v	

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