On the Interaction of Syntax and Phonology in Georgian

Anna Chigogidze

A Thesis

in

The Special Individualized Program

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Arts (Special Individualized Program) at
Concordia University
Montreal, Quebec, Canada

March 2011

ABSTRACT

On the Interaction of Syntax and Phonology in Georgian

Anna Chigogidze

This thesis is an investigation of the interaction of the phonological and syntactic components in Georgian. Presenting a summary and critical analysis of two studies of the interaction of syntax (word order) and intonation in the speech of native Georgian speakers, the findings of these studies are compared with the observations made in the Swans Study – an experimental analysis of freely-generated speech that examines the reading of a fictional story by a Georgian-speaking informant.

The Swans Study compares the intonation patters of experimentally constructed and natural (freely generated) speech, confirming the results of previous studies on Georgian intonation, and offering questions for further exploration. To explain the lack of unique correspondence between case marking and syntactic position (grammatical function) in the story "Mzia and the Swans", an overview of the Georgian case marking system is provided.

Finally, the Georgian lateral fronting rule is described in a discussion on the necessity of maximum specificity in rule representations. The lateral fronting rule also attests to the close relationship between the syntactic and phonological modules, applying only when the triggering segment is found inside the same word as the dark lateral, and not applying when the triggering segment and the dark lateral are separated by a word boundary.

ACKNOWLEDGEMENTS

This thesis has taken its time to ripen. Over the past four years, studying the complexity of the Georgian language has only heightened my wonder at the creative force of the human mind: the design of such an intricate system, learnt so effortlessly by children the world over is truly still a mystery!

I would like to thank my supervisory committee: Professors Dana Isac and Charles Reiss for offering encouragement, understanding, and very necessary reality checks in both academic and personal matters; Professor Mark Hale for inspiring me to keep wondering about the big questions, reminding me that linguistic inquiry is ultimately concerned with shedding light on the nature of the human mind. His ability to weave humor into explanations of the complexities of Georgian verbal morphology is unforgettable.

A heart full of gratitude goes out to my lovely daughter Amelie, without whom my time management skills would never have become fully realized. Thank you to my sister Kathy for traveling from Ottawa to Montreal to babysit Amelie on weekends in an effort to inspire progress in my research; my grandmother for her guidance and friendship, and my mother for instilling in us a love for Georgia – the language, the culture, and the people.

TABLE OF CONTENTS

THE GEORGIAN LANGUAGE: AN INTRODUCTION

The Georgian language is part of the Kartvelian (or South Caucasian) branch of the Caucasian language family, along with its sister languages Laz, Svan, and Mingrelian, which are spoken throughout the western seaboard of the country.
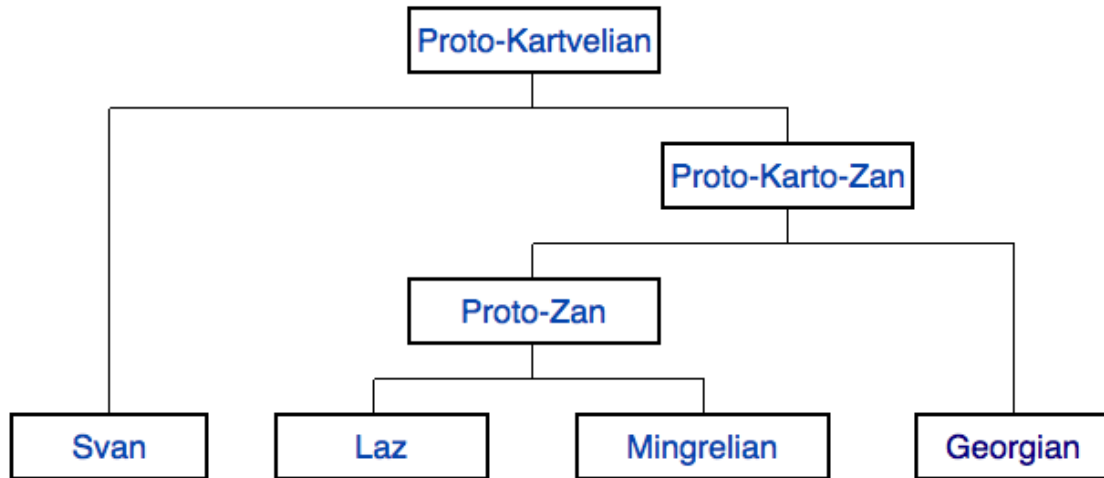
Fig 1 The Kartvelian branch of the Caucasian language family. (based on Gamkrelidze 1966).

Spoken by close to five million people, Georgian is notorious (at least among linguists) for several reasons: it has acquired the reputation of being difficult to learn due to its complex verbal morphology and lengthy consonant clusters; there has been no relationship established between Georgian and any other language family in the world; and its typologically rare split case marking system. Georgian verbal morphology is extensive, and the lexicon contains a number of loanwords from Turkish and Persian.

Georgia is a mountainous country, nestled east of the Black Sea, between Turkey, Armenia, Azerbaijan, and Russia.

Fig 2 Map of Georgia

Known as *sakartvelo* [sakartvelo] to Georgians, the country has an ancient history, with a literary tradition dating back to the fifth century AD, with early Georgian inscriptions and literary texts appearing at that time.

The Georgian language has been described as agglutinative and inflectional, combining morphemes to form words.   The following verb complex illustrates the extent of agglutination and inflection in the language.

i)   და-გვ-ა-ლევ-ინ-ებ-დ-ი-თ-ო
       *da-gv-a-**lev**-in-eb-d-i-t-o*
       preverb - ind.object - pre-radical vowel - verb root (-ლევ- -***lev***- 'drink') - causative
       marker - present/future stem formant - stem augment - screeve marker - plural marker -
       indirect speech marker
       's/he said: "you (plural) would have made us drink" '

Although the verbal morphology is not this elaborate throughout, the above example gives evidence of the complexity of Georgian for second language learners. Of course, Georgian language acquisition in children occurs effortlessly.

The language has seven nominal cases, with three of the cases marking the verbal arguments. There is no one to one correspondence between case and the grammatical function of the verbal argument, which makes it difficult to predict the function of a noun in the sentence simply by looking at its case marking morpheme.

The Georgian writing system uses the *mkhedruli* [mxedruli] script, which first came into use around the 9th century AD. Prior to that time, the *asomtavruli* script was in use from the 5th century AD. The orthographic form of the *mkhedruli* alphabet, along with English transliteration and IPA transcription is shown below in Figure 3.

ა	ბ	გ	დ	ე	ვ	ზ	თ	ი
a	b	g	d	e	v	z	t	i
[a]	[b]	[g]	[d]	[e]	[v]	[z]	[tʰ]	[i]

კ	ლ	მ	ნ	ო	პ	ჟ	რ	ს
k'	l	m	n	o	p	ž	r	s
[k']	[l]	[m]	[n]	[ɔ]	[p']	[ʒ]	[r]	[s]

ტ	უ	ფ	ქ	ღ	ყ	შ	ჩ	ც
t'	u	p	k	γ/ġ	q'	š	č	c
[t']	[u]	[pʰ]	[kʰ]	[ɣ]	[q']	[ʃ]	[tʃʰ]	[tsʰ]

ძ	წ	ჭ	ხ	ჯ	ჰ			
ʒ/ž	c'	č'	x	ǯ/j	h			
[dz]	[ts']	[tʃ']	[x]	[dʒ]	[h]			

Fig 3 The Georgian writing system.

3

This thesis is divided into five parts. Chapter 1 is a summary and critical discussion of two treatments of the relationship between syntax, particularly word order, and intonation in Georgian. Chapter 2 presents the Swans Story experiment, which is an analysis of a recording of one native Georgian speaker's reading of a story. The analysis of the intonational properties of several types of sentences (sentences containing focus, declaratives, and interrogatives) is compared with the analysis in Chapter 1. Chapter 3 provides an overview of the Georgian case marking system. Chapter 4 is a discussion of the Georgian lateral fronting rule, and the issue of rule representation in phonology. Finally, Chapter 5 offers a conclusion. As a whole, the thesis aims to shed light on the interaction of the intonational, phonological, and syntactic properties of Georgian.

CHAPTER 1

WORD ORDER AND INTONATION

In this chapter, I explore the relationship between word order and intonation in Georgian. The discussion is based on two treatments of the interaction of word order and intonation in Georgian: *Word order and intonation in Georgian* (Skopeteas et al. 2009) and *Intonational Phonology of Georgian* (Jun et al. 2007). Section 1 includes a summary and critical analysis of the treatment of Georgian word order and intonation in Skopeteas et al. It also discusses the theoretical frameworks upon which the empirical observations of the authors are founded, and offers a discussion of how these observations might be captured in other, more familiar models. Section 2 includes a summary of *Intonational Phonology of Georgian* (Jun et al. 2007), as well as an analysis of the findings through an alternative theoretical framework. Section 3 is a summary and conclusion.

1.1 SUMMARY OF "*WORD ORDER AND INTONATION IN GEORGIAN*"

In *Word order and intonation in Georgian,* by Skopeteas et al. (2009), the authors examine the relationship between word order and intonation by analyzing the way information structure, namely focus, is encoded in the sentence. The examination of this relationship involves the manipulation of two factors in sentences with broad and narrow focus: word order and prosody. The conclusion is that certain word orders can be accommodated in virtually any context given the 'appropriate' intonation, while other word orders are highly restrictive, and have low acceptability among native speakers even when

accompanied by the expected ('congruent') intonational contour.   Interpreting their observations within the Optimality Theory model of grammar, Skopeteas et al. (2009:124) further conclude that: "prosodic constraints outrank syntactic constraints in the encoding of information structure."

Below are example sentences, illustrating *neutral*, *congruent*, and *incongruent* intonation. As an answer to the question "What happened?", the sentence "Chola wrote a letter to Keti." would exhibit neutral intonation – not one syntactic constituent would receive special (marked) prosodic prominence.

1a. NEUTRAL INTONATION

Q: What happened?

A: Chola wrote a letter to Keti.

However, if one is asked the question 'Who wrote the letter to Keti?' there are five intonational patterns that the response can possibly demonstrate.

2a. CHOLA wrote a letter to Keti.'   (CONGRUENT INTONATION)

2b. Chola WROTE a letter to Keti. (INCONGRUENT INTONATION)

2c. Chola wrote a LETTER to Keti. (INCONGRUENT INTONATION)

2d. Chola wrote a letter to KETI.   (INCONGRUENT INTONATION)

The utterance in 2a is an example of congruent intonation, since the intonation pattern of the answer places emphasis on the subject 'CHOLA', which is to be expected as a response to the question 'Who wrote the letter to Keti?' On the other hand, responses 2b-2d demonstrate an incongruent intonation pattern, since there is prosodic prominence on a

6

constituent which does not call for focus as an answer to the question 'Who wrote the letter to Keti?' These utterances are thus an example of a mismatch between focus and intonation.

The experiment in Skopeteas et al. (2009) involved recording native Georgian speakers reading question/answer pairs, with answers arranged in four different word orders (outlined below). Each word order was read either with prosodic prominence, (i.e., marked prosody) to signal the presence of a focused constituent, or without prosodic prominence (i.e., neutral prosody) in answer to an all-new context question. The sentences involving a focused constituent occurred in four different contexts: with subject focus, direct object focus, indirect object focus, and multiple focus (where both the direct and indirect objects were focused). These sentences were later presented to a group of native Georgian speakers who gave acceptability judgments ranging from a score of 1 (best) to 5 (worst). The sentences with marked prosody (or prosodic prominence) were realized with either a congruent prosody (the intonation appropriate for the context question) or a non-congruent prosody (an intonation that was unexpected in the given context).

The following English examples illustrate how word order and intonation might interact.

3. COOKIES, I really like.

4. *COOKIES the delicious, I really like.

In 3, the word order is non-canonical, i.e., marked. Yet with the right (congruent) intonation, with prosodic prominence being placed on the object *cookies*, the utterance is grammatical. On the other hand, in 4, despite the fact that the left-dislocated object receives prosodic prominence and carries congruent intonation, the sentence is nevertheless ungrammatical, since in English movement of the noun out of the DP *the delicious cookies* is

7

not licensed. This example shows that in certain cases, the intonation may 'repair' the effects of marked word order (as in 3), while in other cases, even congruent prosody cannot make up for the negative effects of a marked word order (i.e., in 4).

Skopeteas et al. observe that of the four word orders they tested, some can occur in a variety of contexts while retaining relatively high scores of acceptability, while others tend to incur relatively low scores of native speaker acceptability regardless of the context (whether accompanied with congruent or incongruent prosody does not seem to significantly improve their acceptability). From this observation, Skopeteas et al. (2009:121) conclude that certain word orders incur weak word order violations, while other word orders incur strong violations. They claim that: "in contrast to weak word order violations, strong word order violations cannot be accommodated by prosody.

In the next section, details regarding their observations about Georgian word order and prosody are followed by a description of the experimental design and results.

1.1.1   WORD ORDER IN GEORGIAN

Skopeteas et al. make five main observations regarding the nature of word order in Georgian: 1) the existence of free word order, 2) verb-final default word order, 3) optional verb-fronting, 4) a rule requiring immediate left-adjacency of focused constituents to the verb, and 5) optional argument re-ordering. The details of their claims are offered below.

1) Free word order

Georgian exhibits considerable freedom in the order of its constituents. In keeping with traditional literature on the subject (i.e., Aronson 1982, and Harris 1981), Skopeteas et

al. characterize Georgian as a language with 'free word order', claiming that "all permutations between major clausal constituents are grammatical".

2) Verb-finality

The two most frequent verb orders are given as SOV and SVO, with verb-final SOV considered as the default word order. Explicitly stated, this means that in Georgian declarative sentences, the Subject tends to be the first element in the sentence, followed by the Verb and Object (SVO), or the Object, then the Verb (SOV). Even though both SOV and SVO word orders are found in high frequency in Georgian, Skopeteas et al. take the basic word order to be verb-final SOV (or V-final).

3) V-fronting

Since the authors assume the SOV order to be the canonical word order in Georgian, and since the SVO order also occurs frequently, they offer an account for the "pragmatically neutral occurrence of SVO orders", by positing an optional V-fronting operation:

"The assumption of 'optional' V-fronting implies that VO orders are not necessarily the result of a movement operation that targets a position that is associated with a discrete information structural function. V-fronting is a semantically vacuous operation that may be optionally selected in discourse in order to meet preferences on the linearization of the involved constituents. The exact conditions that determine the choice between VO and OV are not yet studied in detail, but the freedom in the alternation between these orders is acknowledged in all studies on Georgian word order."

9

By saying that the SVO word order is 'pragmatically vacuous', the authors are supposing that the verb, assumed to have sentence final position as its default, can move left of the object for reasons that do not involve the fulfillment of specific pragmatic functions (i.e., focus, etc). The question of positing 'optional' movement is addressed in section 1.1.2.

V-initial word order (where the verb occurs at the beginning of the sentence) is also mentioned as being grammatical, yet occurring in very restricted contexts, namely at the beginning of narratives. Here the authors provide details on the frequency of occurrence of V-initial sentences in several corpus studies, citing that the verb is found sentence initially only in 3.3% of all the examined verb occurrences.

> "We assume that V-initial orders result from a different syntactic operation (of V-movement to a higher clausal position) which is licensed by a restricted subset of contexts. This implies that the optional fronting of the verb [V-fronting] takes place within a lower layer of the clause, that does not include the initial position."

In this way, V-fronting is considered an optional movement operation, while V-initiality results from verb movement in a particular restricted set of contexts (i.e., beginning of narratives).

4) XP$_{FOC}$ V adjacency rule

Skopeteas et al. note that focused constituents in Georgian appear left adjacent to the verb. Since they posit V-final as the canonical word order, and since the verb does occur in places other than the canonical sentence final position, they point out that "a subset of the

non-V-final clauses in Georgian results from the rule for $XP_{FOC}V$ adjacency, which is a distinct phenomenon from V-fronting." Thus they differentiate three kinds of cases where the verb does not occur in sentence final position: 1) as a result of the optional V-fronting operation, and 2) due to the $XP_{FOC}V$ adjacency rule, 3) movement to V-initial position.

The authors claim that V-fronting is "an optional operation that depends on linearization preferences", while the $XP_{FOC}V$ adjacency rule takes effect whenever a particular constituent is being focused in the sentence. The $XP_{FOC}V$ adjacency rule states that the verb must occur directly to the right of a focused constituent, (or, in other words, the focused constituent, XP, must occur immediately left-adjacent to the verb). As seems to frequently be the case with the facts of Georgian, there is a caveat: the $XP_{FOC}V$ adjacency rule applies only to preverbal arguments carrying focus. Focused arguments occurring post-verbally are also grammatical (the authors take this as suggesting that optional V-fronting takes place before the operation that establishes $XP_{FOC}V$ adjacency).

5) Argument scrambling

The default order of the arguments is given as S O_2 O_1 (shown in (a) below), but deviations from this order are frequent, with re-ordering of arguments.

(a) dato nino-s c'ign-s c'a-ak'itx-eb-s.

　Dato(NOM) Nino-DAT book-DAT PR(FUT)-(IO.3)CAUS.read-THM-S.3.SG

　'Dato will cause Nino to read a book.'

(b) dato c'ign-s nino-s c'a-ak'itx-eb-s.

　Dato(NOM) book-DAT Nino-DAT PR(FUT)-(IO.3)CAUS.read-THM-S.3.SG

　'Dato will cause Nino to read a book.'

To summarize, Skopeteas et al. observe that Georgian has free word order, with the basic word order being V-final (SOV). The SVO word order is attributed to an optional movement operation called V-fronting, while V-initiality, or verbs occurring in sentence-initial position, are accounted for by contextually restricted movement. There is an $XP_{FOC}V$ adjacency rule, which specifies that preverbal focused arguments must occur left-adjacent to the verb. The order of arguments is unrestricted.

INTONATIONAL ISSUES

Following a summary of the behavior of syntactic constituents, Skopeteas et al. present a cursory overview of the facts of Georgian intonation. The following observations are made.

Every constituent forms its own prosodic phrase, with the exception of the verb, which can be integrated into the prosodic phrase (p-phrase) of an adjacent argument.

Non-final p-phrases have either a rising (L H) or a falling pattern (H L). The last p-phrase of a sentence is always falling. A high tone appearing late in the p-phrase is analyzed as the H p-phrase boundary tone. The final p-phrase of a declarative sentence ends on a low tone. Only the first p-phrase is realized with a full contour and a large range. Every p-phrase is downstepped relative to the preceding one, which means that the high part of a p-phrase is lower than the high part of the preceding p-phrase.

Skopeteas et al. note that prosodic prominence (on a focused constituent) in Georgian is realized differently from the way that it is realized in other languages. Sentence initially, a focused constituent is accompanied by an increase in F0 height; in sentence medial and sentence final positions, a focused constituent is characterized by a lower and flatter contour, as well as by the optional deletion of prosodic boundaries. This means that instead of

receiving prosodic prominence (phonetically realized as an increase in F0 height), a focused constituent in Georgian is accompanied by prosodic leveling. The following examples illustrate the different intonational contours of a phrase with broad focus (also called the all-new context), and a phrase with Subject focus.

a) Q: {What is happening?}

$[[L* H_P] H*L L_I]$

$[[bavsˇv-i]_P [i-cin-i-s]_P]_I$

child-NOM PV-laugh-PRS-S.3.SG

A: 'The child is laughing.'

b) Q: {Who is laughing?}

$LH*L L_P H* L L_I$

$[[bavsˇv-i]_P [i-cin-i-s]_P]_I$

child-NOM PV-laugh-PRS-S.3.SG

A: 'The CHILD is laughing.'

The examples show that non-prominent (unfocused) constituents have the $L* H_P$ intonational contour, while focused constituents have the $LH* LL_P$ contour (in non-final position) and the $L*L_I$ contour sentence finally.

1.1.2 EXPERIMENTAL STUDY

The goal of the experiment conducted by Skopeteas et al. was to shed light on how word order and intonation interact in Georgian. This was accomplished by examining four types of word orders and two kinds of prosodic phrasing (congruent and incongruent with the

context) in sentences involving broad and narrow focus. The authors postulated the following hypothesis:

"The hypothesis put forth in this paper is that two types of word order manipulation have to be distinguished. We assume that some word order possibilities are not uniquely associated with particular information structure; their occurrence in particular contexts is a matter of preference. Word order markedness of this kind may be contextually accommodated by a marked prosodic structure that distributes phonological prominence in a way that fits the context. Another subset of word order possibilities has strong information structural requirements. We assume that the latter word orders are licit only if the information structural requirements are met; if not, their contextual felicity cannot be 'repaired' by a felicitous prosody. We refer to the former type of word order markedness as resulting from the violation of 'weak' word order constraints and to the latter as resulting from the violation of 'strong' word order constraints." Skopeteas et al. (2009:107)

The four word orders examined were (S – subject, O_1 – direct object, O_2 – indirect object, V – verb):

WO1:	SO_2O_1V
WO2:	O_2O_1SV
WO3:	O_1SVO_2
WO4:	VSO_1O_2

Four answers (phrased in the above-mentioned word orders) to each of the five different context questions were recorded. The questions elicited the following contexts: one

all-new (broad focus) context, and four with narrow focus (subject, direct object, indirect object, and multiple focus, where both subject and direct object were focused). For each context question, two answers with two different intonation patterns, were read out by two native Georgian speakers; one realization of the answer was prosodically congruent with the context, while the other was prosodically non-congruent. These answers were later presented to another group of native speakers, who rated them on a scale of 1 to 5 (1 - the best, 5 - the worst). The experiment was designed to test the following:

> "Our hypothesis concerning the interaction between prosody and syntax is that a marked prosody that is contextually licensed may override the negative effect of weak word order violations such as A-reordering and V-fronting, but not the negative effect of strong word order violations, which are exemplified through V-initiality and violations of $XP_{FOC}V$ adjacency in our data set." Skopeteas et al. (2009:121)

By carrying out an experiment where word orders were manipulated along with congruent (neutral and marked) and incongruent prosody, Skopeteas et al. (2009:124) came to the following findings:

> "Whenever the prosodic properties do not correspond the contextual expectations, a clear negative reaction of the speakers is induced. In languages with free word order, word order is sensitive to information structure too, but word order infelicities may be overridden by an appropriate prosodic structure. This observation may lead to the conclusion that prosodic constraints outrank syntactic constraints in the encoding of information structure."

15

Unsurprisingly, prosodic incongruence had a negative effect on scores of contextual felicity. To compare the scores of acceptability among the four word orders, they did not show a great deal of variance depending on whether the word order was accompanied by prosodic congruence or incongruence. That is, WO1 received the highest scores of acceptability compared to the other word orders, whether it was accompanied by congruent or incongruent prosody, while WO4 received the lowest scores of acceptability whether this word order was presented to native speakers with congruent or incongruent prosody. Yet, for all four word orders, in the environment of non-congruent prosody, their scores of acceptability were lower than the scores they received in the environment of congruent prosody.

The results are illustrated in their Table 1.2, repeated below.

FOCUS	WO1		WO2		WO3		WO4	
	Strong	Weak	Strong	Weak	Strong	Weak	Strong	Weak
All-new		•		•		•	•	
Subject	•			•		•	•	
Direct object			•	•	•	•	•	•
Indirect Object	•		•	•		•	•	•

Table 1 The interaction of word order, focus, and weak and strong violations. (From *Word order and intonation in Georgian.* Skopeteas et al. 2009)

The experiment carried out by Skopteas et al. confirmed their hypothesis that a congruent prosody may accommodate the negative effect of weak word order violations on contextual felicity, but it cannot accommodate the negative effect of strong word order

violations, leading them to the conclusion that prosodic constraints rank higher than syntactic constraints.

1.1.3 ANALYSIS OF "WORD ORDER AND INTONATION IN GEORGIAN"

CLAIM REGARDING FREE WORD ORDER

Skopeteas et al. claim that Georgian is a free word order language, yet this claim is questionable. Although they demonstrate that under the right context, virtually any word order is possible, certain word orders, such as WO4 (VSO_1O_2) receive very low acceptability judgments from native speakers, even when accompanied by a congruent prosodic realization. Skopeteas et al. note that:

> "Whenever the prosodic properties do not correspond to the contextual expectations, a clear negative reaction of the speakers is induced. In languages with free word order, word order is sensitive to information structure too, but word order infelicities may be overridden by an appropriate prosodic structure."

There seems nothing surprising about the fact that native speakers would react negatively to utterances with incongruent prosody, yet the claim that free word order exists in Georgian alongside "word order infelicities" seems contradictory. Claiming that a language has free word order would entail that any permutation of syntactic constituents would be acceptable and grammatical. If indeed, Georgian is a free word order language, then it seems odd that Skopeteas et al. refer to every word order that deviates from the canonical WO1 (SO_2O_1V) as being marked, incurring violations, and being in need of repair by an 'appropriate prosodic structure'. After all, a major issue addressed in Skopeteas et al. (2009:121) is whether "a congruent prosody can accommodate word order markedness?"

The authors note that "prosodic infelicities had an additive effect to word order infelicities". If there are word order infelicities, the question remains about the validity of characterizing Georgian as a free word order language. At the same time, the notion of 'infelicity' is distinct from the concept of 'grammaticality'. As such, syntactically well-formed sentences can be taken to be infelicitous due to native speakers' conceptualization of rarely occurring or non-standard forms as ones that are 'ungrammatical'. Of course, this is a separate issue that will not be addressed here.

CLAIM REGARDING 'OPTIONAL' MOVEMENT

Skopeteas et al. analyze two types of deviations from the canonical word order SO_2O_1V as resulting from 'optional' movement operations. Three word orders besides the canonical one were examined in the study, including ones resulting from: V-fronting, A-reordering, $XP_{FOC}V$ adjacency, and V-initiality. They note that:

"Operations are 'optional' in the sense that they are chosen in order to satisfy

discourse related preferences that affect the linearization, but do not display the

properties of movement that targets particular positions that are associated with

discrete semantic or pragmatic functions. The latter two operations are restrictive:

a violation of the preference for left adjacency of focused XPs to the verb results

in loss of acceptability, and placement of the verb in the sentence initial position

is contextually restricted to a particular type of contexts."

Optional operations are posited by Skopeteas et al. to account for verb movement that seems to have no functional designation; in the case of SVO word order, the movement of the verb from sentence-final default position does not seem to be motivated by attraction to a particular targeted position. Yet, describing this movement as an optional operation is a sloppy addition to syntactic theory, since movement can now occur for unexplainable, unpredictable reasons. Saying that optional operations are "chosen to satisfy discourse related preferences" does not clarify how movements motivated by discourse-related preferences, and movements satisfying "discrete semantic and pragmatic functions" actually differ, since pragmatic and discourse-related functions seem to be referring to things that are very much the same.

Also, the authors claim that "violation of the preference for left adjacency of focused XPs to the verb results in loss of acceptability". It is unclear whether this means that the sentence is ungrammatical due to XP_{FOC} V violation, or unacceptable because speakers react negatively to it for various reasons.

Having noted this, I do not at this time offer my own account of verb movement out of V-final position. Further analysis might show that it is motivated by the fulfillment of specific semantic or pragmatic functions.

Skopeteas et al. note one point of divergence between the two studies on the issue of pitch accent. They claim that Jun et al. analyze focus as being phonetically realized with a pitch accent, while Skopeteas et al. (2009:105) make an alternate claim. They note:

"Their [Jun et al.] analysis of declarative sentences agrees with ours, but the analysis of sentences containing a focus does not, since they find that a narrow focus is always accompanied by a pitch accent (H* or L + H*), while we find that

a focus can have a flat and low intonation, depending on the place of the sentence it appears."

In fact, Jun et al. also observe that a focused constituent can have a low intonation if it appears sentence-finally, which could be due to declination effects, as mentioned below.

ADDITIONAL CRITICISMS

Skopeteas et al. note that "prosody applies on a subset of structures that are syntactically well-formed," and that "word orders that are non-well-formed cannot be rendered grammatical through prosodic manipulation." These statements are at issue with certain fundamental tenets of the generative framework, since non-well-formed word orders would never be generated by the syntactic component, and as such could never exist as part of the output of a native speaker.

Skopeteas et al. cite the following research regarding the interaction of prosody and word order:

"Turning now to phenomena that relate to the contextual felicity (rather than to the grammaticality) of particular expressions, a different relation between prosody and syntax is suggested by the linguistic data. Empirical studies on intonational languages show that the role of prosody outranks the role of syntax on the felicity conditions of a particular linguistic expression. Keller and Alexopoulou (2001) present evidence from Modern Greek that violations of prosodic constraints have a stronger negative effect on contextual felicity than violation of word order constraints." (Skopeteas et al. 2009:107)

This is true, because they are dealing with a language that already has free word order. If the word order is restricted, then violations of syntactic constraints would probably have a stronger negative effect than violations of prosodic constraints.

20

1.1.4 MODEL OF GRAMMAR IN "WORD ORDER AND INTONATION IN GEORGIAN"

Skopeteas et al. examined the interaction of word order and prosody in encoding the information structure of focus. In an all-new context, WO2 and WO3 are taken to be 'pragmatically vacuous' word orders, which can occur in any context as long as accompanied by context-congruent prosody, while WO4 can only occur in restrictive contexts even when coupled with context-congruent prosody.

Reference to word order variations as ones which either can or cannot be 'accommodated' in a given context (in this case, to express constituent focus) when accompanied by the appropriate prosody, reflects the theoretical framework through which the authors are filtering the data. Assuming the Optimality Theory model of grammar, Skopeteas et al. interpret occurrences of non-canonical word orders (WO2, WO3, and WO4) as outcomes of the rankings of syntactic constraints. Since WO2 and WO3 only violate weak word order constraints (one of which probably states that all word orders must be faithful to WO1), and since native speakers do not react too negatively if these word orders occur with context-congruent prosody, Skopeteas et al. conclude that prosodic constraints outrank syntactic constraints. This would explain why WO2 and WO3 retain relatively high acceptability despite incurring weak word order violations – because they fulfill the higher ranked constraint for faithfulness to context-congruent prosodic structure. Thus WO2 and WO3 are said to "be accommodated in any context if realized with the appropriate prosody", despite violating syntactic constraints which prohibit Georgian word orders from straying from the default WO1.

1.1.5 CAPTURING OBSERVATIONS IN ANOTHER MODEL

In the Minimalist model of grammar, word order variations are explained as operations resulting from constituent movement to satisfy feature checking and functional requirements. As such, 'optional, pragmatically vacuous' movement of the verb, resulting in WO3 would be ruled out. Although I do not offer an account of WO3, further examination might be able to attribute verb movement out of default sentence final position to movement to a designated functional projection of one sort or another. The essential issue for a generative model would be to come up with a theory of grammar that accounts for the fact that the four word orders examined in Skopeteas et al. do occur in Georgian, and to explain the motivations that result in word order variation in the language.

Since each of the four word orders examined in Skopeteas et al. are attested in Georgian, and since the generative model assumes that structures that are generated by speakers are grammatical structures, then all the four word orders would be interpreted to be grammatical, regardless of the fact that they were given scores of 'low acceptability' by native speakers.

Skopeteas et al. (2009:121) note that when word orders incurring weak violations are accompanied by a contextually licensed prosody, the effects of word order markedness disappear. This observation could be interpreted within the generative model of grammar in the following way: word orders incurring weak violations result from movement (from the canonical position, WO1) that fulfills structural requirements for expressing, for example, focus. A syntactic structure would then be generated that must in turn be accompanied by a prosodic structure appropriate for the context of focus. To express focus in Georgian, the appropriate structure (corresponding to word orders that incur weak violations) is sent to the phonology-syntax interface. Then, a prosodic structure for focus (the second requirement for

expressing focus) is generated in the phonological component (responsible for generating the prosodic structure). Finally the two structures are combined in the phonology-syntax interface.

When the syntactic structure is spelled out without the appropriate prosodic structure for narrow focus, the resulting sentence is infelicitous, although the syntactic structure is well-formed. In other words, to express focus in Georgian, both the syntactic component, and the phonological component must interface.

Addressing word orders that incur strong violations, the $XP_{FOC}V$ adjacency rule would require that the verb move immediately to the right of a focused constituent. Even if the phonological component generated an appropriate prosodic structure for expressing focus in Georgian, when it interfaced with a syntactic structure that did not meet the requirement for a focused constituent to appear left adjacent to the verb (thus incurring a strong violation), the merger of the two structures would generate a sentence that native speakers would find infelicitous.

With this basic description, the observations of Skopeteas et al. can be captured within the generative framework.

1.2 SUMMARY OF "INTONATIONAL PHONOLOGY OF GEORGIAN"

In the *Intonational Phonology of Georgian*, Jun et al. examine the prosodic structure and tonal pattern of Georgian. They examine four types of sentences: declaratives, yes/no questions, wh-questions, and sentences involving focus. The findings are interpreted within the Autosegmental-Metrical (AM) model of intonation.

After giving an overview of the prosodic structure of Georgian, Jun et al. characterize the intonational properties of each type of sentence they examine, and provide a tonal inventory of the language. They postulate a hierarchy of three types of prosodic units above the word: the Accentual Phrase (AP), Intermediate Phrase (ip), and Intonational Phrase (IP).

Noting that Georgian is known to have free word order, Jun et al. (2007:55) observe that certain sentence types had a 'preferred word order and pitch contour". Georgian is described as an 'exotic' language "by virtue of having two additional tones" – a pitch accent linked to a stressed syllable, and a phrase accent linked to the antepenult of the AP. They also claim that: "compared to English or Spanish, Georgian has shows much closer connection between syntactic/semantic grouping and prosodic phrasing".

In contrast to previous studies that postulated antepenultimate secondary stress in Georgian (with primary stress found on the first syllable), Jun et al. interpret the high pitch on the antepenultimate syllable as a property of the Accentual Phrase, since it always occurs on the antepenult of the AP regardless of its location on the word. They observe the complex tonal contour HLH to be an interesting property of the language.

Jun et al. observe that an Accentual Phrase (AP) is a tonally marked unit which can consist of one word, but is usually more than one word, is marked by either a rising (L H) or falling (H L) tonal pattern. The first syllable of an AP is stressed, and the HL falling tone distributed over the antepenult and penult of the AP is interpreted as the H+L phrase accent. The phrase accent is found in interrogatives and sentences with focus.

The ip consists of one or more APs, while the IP consists of one or more ips. The IP and ip are marked with phrase-final lengthening. All three prosodic units, (the AP, IP, and ip) are marked with a boundary tone.

24

DECLARATIVES

The pitch contour of declarative sentences is characterized by a sequence rising APs (L* Ha), with L% as the sentence final boundary tone. In comparing Fig. 2 and Fig. 3, Jun et al. show that prosodic groupings correspond to syntactic constituency.
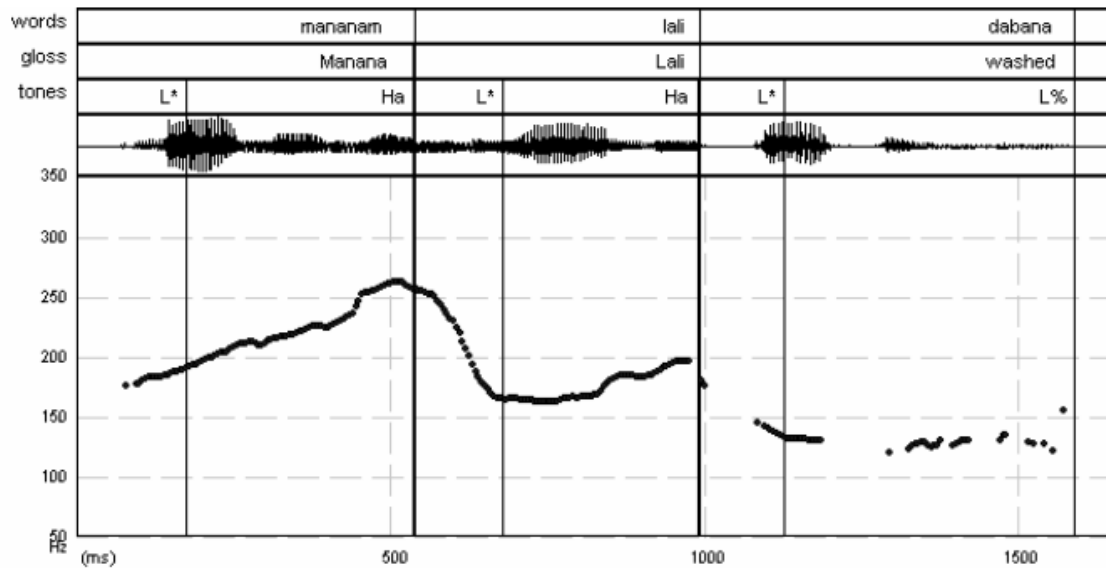
Fig.2. From *Intonational Phonology of Georgian*. Jun et al. (2007:45)

In their Fig. 2, repeated above, the Subject NP is accompanied by the L* Ha tonal contour (characteristic of APs in Georgian); in Fig 3, the Subject NP once again displays the L* Ha tonal contour, yet this sentence contains a heavy NP (Possessive + Adjective + Head Noun), while the sentence in Fig. 2 had a Subject NP consisting of a bare noun. This shows that a syntactic constituent, regardless of number of sub-constituents, is marked with a corresponding tonal contour.
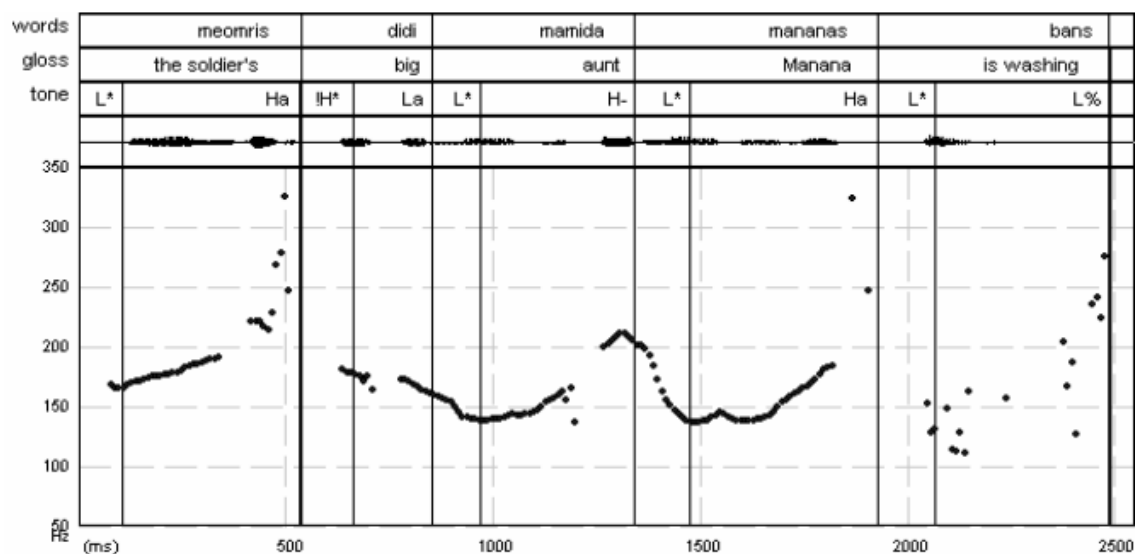
Fig. 3. From *Intonational Phonology of Georgian*. Jun et al. (2007:46)

YES/NO QUESTIONS

Jun et al. posit SVO as the default word order of Yes/No questions. The sentence final boundary is H% or HL%. Following the verb, a significant prosodic break is produced. The H+L phrase accent is found on the antepenult of the AP which also has the H* pitch accent. Their Fig. 6, included below, shows evidence of prosodic phrasing mirroring the grouping of syntactic constituents. In this case, a heavy object NP consisting of three words, [very big sour-cherry], is marked with the intonational contour of an AP, illustrating that it is treated as one constituent.
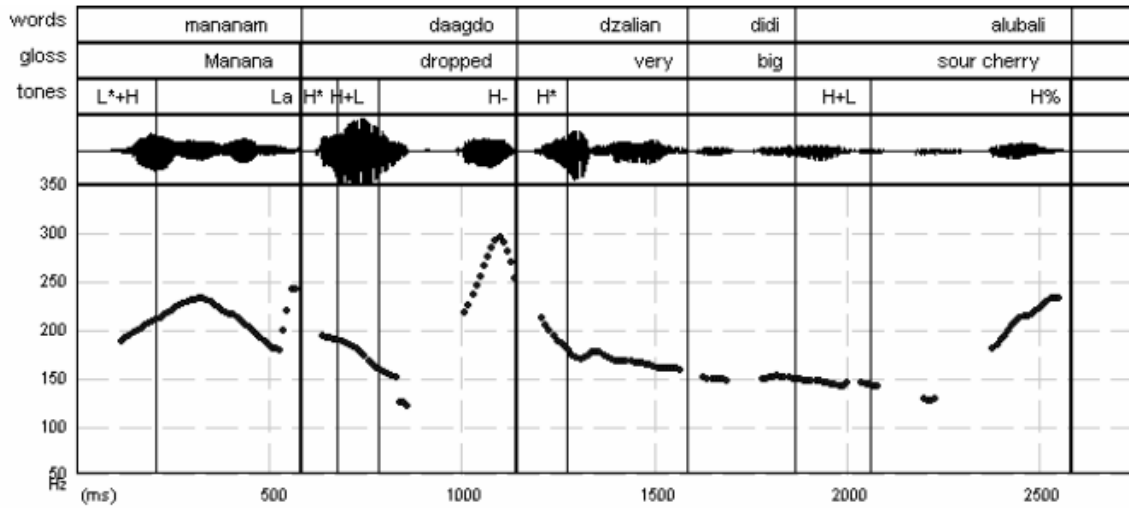
Fig.6. From *Intonational Phonology of Georgian.* Jun et al. (2007:48)

Comparing a declarative and interrogative sentence (Figures 4 and 7), the authors show another example of prosodic grouping reflecting syntactic constituency.
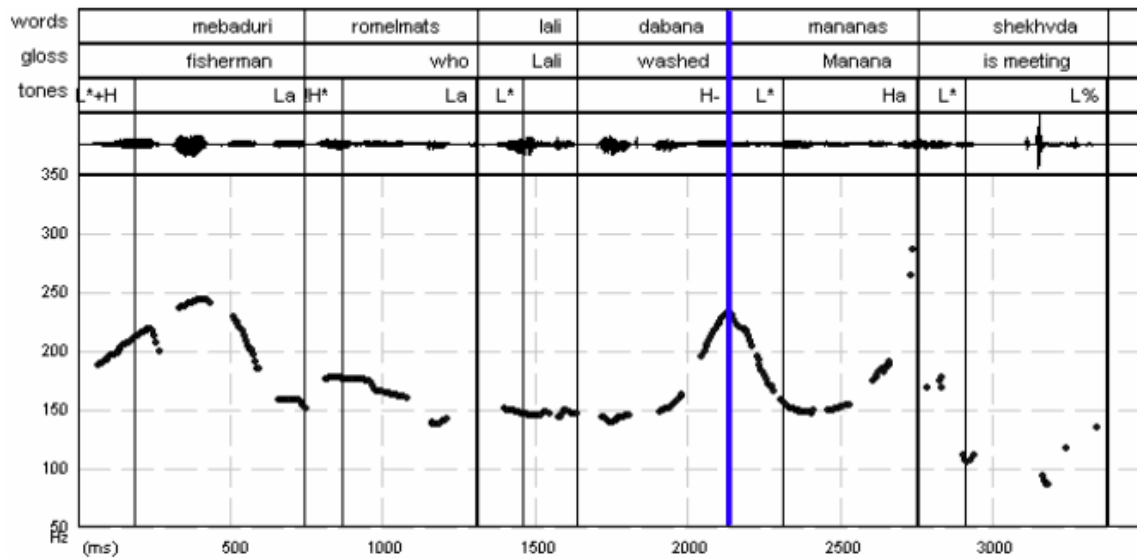
Fig.4 From *Intonational Phonology of Georgian.* Jun et al. (2007:46)

The prosodic groupings of the declarative and interrogative sentence (Fig 4 and 7) are shown below.

27

(1) /{[the fisherman][who][Lali+washed]} {[Manana][is meeting]}/

(2)/{[the fisherman] [who+Lali+washed] [Manana+is meeting]}/
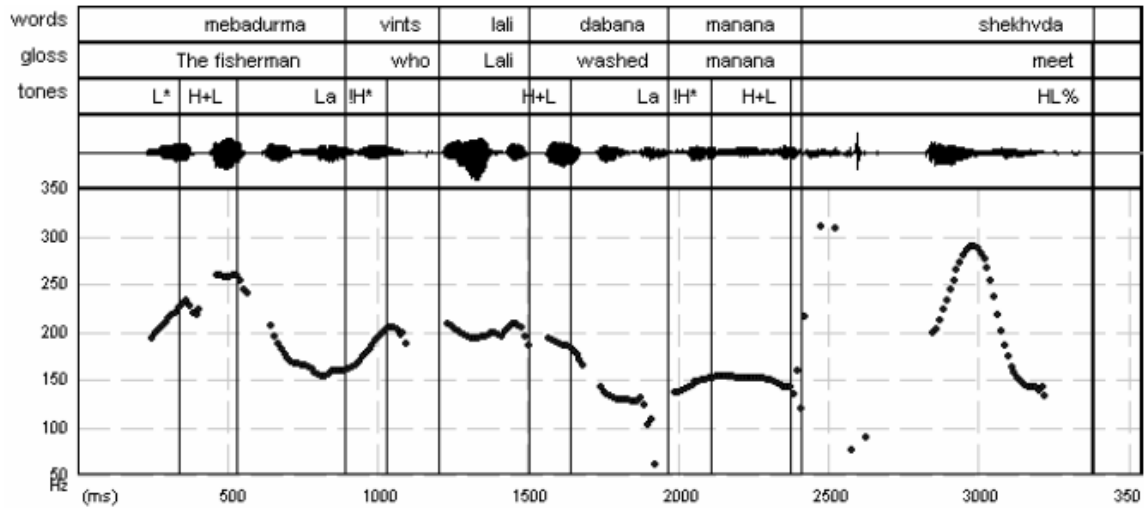
Fig.7. From *Intonational Phonology of Georgian.* Jun et al. (2007:49)

Jun et al. (2007:48) point out that "even though the word order and a higher level prosodic grouping are the same in these two sentences, the tonal pattern of an AP and the sentence final boundary tone are different."

Wᴴ-Qᴜᴇsᴛɪᴏɴs

Wh-questions were found to have a similar tonal pattern as Yes/No questions, along with the H+L phrase accent; one exception was that the verb was integrated into the same AP as the wh-phrase. An interesting observation was that there was variance in the kinds of boundary tones produced by native speakers. The authors point out:

> "Though the boundary tones shown in these figures are all High tones (H- after
> the Verb and H% at the end of the sentence), some speakers produced L- after the
> Verb and HL% at the end of the sentence. When the boundary tone was HL%,

the tonal pattern of the complement phrase was [H* ... H+L HL%]. That is, the antepenult showed a H tone, the penult showed a L tone, and the final syllable showed a HL contour tone. We are not sure at the moment if the choice of a different boundary tone is associated with a different meaning. Though speakers tend to have their favorite tone choice, we sometimes found that the same speaker was using a different type of the boundary tone in the same session." Jun et al. (2007:50)

In Fig 8, the authors demonstrate the H+L phrase accent is a property of the AP, not the word; the H tone of the phrase accent occurs on the second (and final) syllable of one word, while the L tone occurs on the first syllable of the next word.

(3) [ramdeni mela ijda] [navze]?

    L*H   H+L H- L*   H%
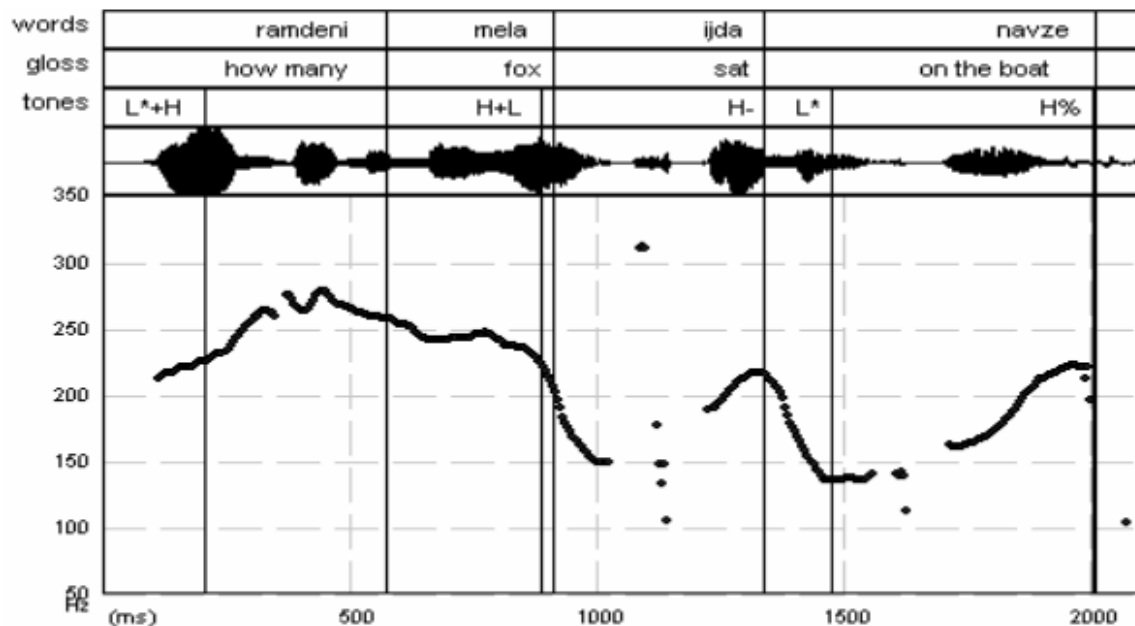
Fig.8 From *Intonational Phonology of Georgian.* Jun et al. (2007:50)

The prosodic grouping of the wh-phrase + the verb is marked by a rising L*H H tonal contour, which once again mirrors the syntactic grouping of constituents.

FOCUS

Jun et al. found that a focused word was realized with a high pitch accent H* or L+H*. A post focus word was either deaccented (deletion of pitch accent), dephrased (deletion of prosodic boundary), or integrated with the focused word, while carrying the H+L phrase accent. However, when focus falls on a sentence final word, Jun et al. (2007:53) found "little or very minor effect in prosody, especially if the word is short." This could possibly be due to declination effects over the course of the sentence.

SUMMARY

By analyzing declaratives, yes/no questions, wh-questions, and focused phrases, Jun et al. examined the prosodic structure and tonal pattern of Georgian. They found that prosodic groupings into AP, ip, and IP reflect the organization of syntactic constituents. Just as Skopeteas et al., they posit SOV as the basic word order, and attribute characteristic tonal contours to each sentence type they examine.

1.2.1   ANALYSIS OF "INTONATIONAL PHONOLOGY OF GEORGIAN"

Georgian is described as an 'exotic' language "by virtue of having two additional tones". It is unclear which language Jun et al. are using as basis for comparison for the Georgian tonal inventory; it would be interesting to determine which language lacks the tones in its

inventory by virtue of which Georgian is characterized as 'exotic'. Perhaps they are comparing it with English.

Figure 11 shows an example pitch track of a sentence with corrective focus on the subject.
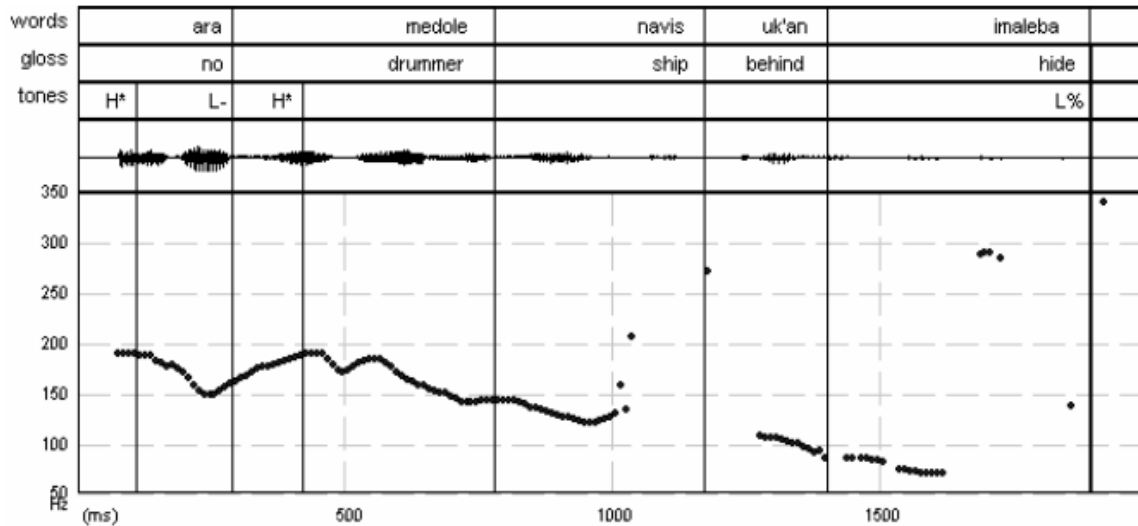
Fig.11 From *Intonational Phonology of Georgian.* Jun et al. (2007:53)

The word order of the sentence is Subject – Indirect Object - Preposition –Verb; this means that the focused subject does not occur adjacent to the verb. As a native speaker of Georgian, the combination of this word order with the intonation bearing focus on the subject seems awkward. My negative reaction to the combination of this word order and intonation could be explained by recalling Skopeteas et al., who claimed that focused arguments must occur immediately left adjacent to the verb (the XP_{FOC} V adjacency rule). In fact, Fig 12 illustrates a pitch track of another sentence bearing subject focus, this time with the verb immediately to the right of the focused constituent.

31
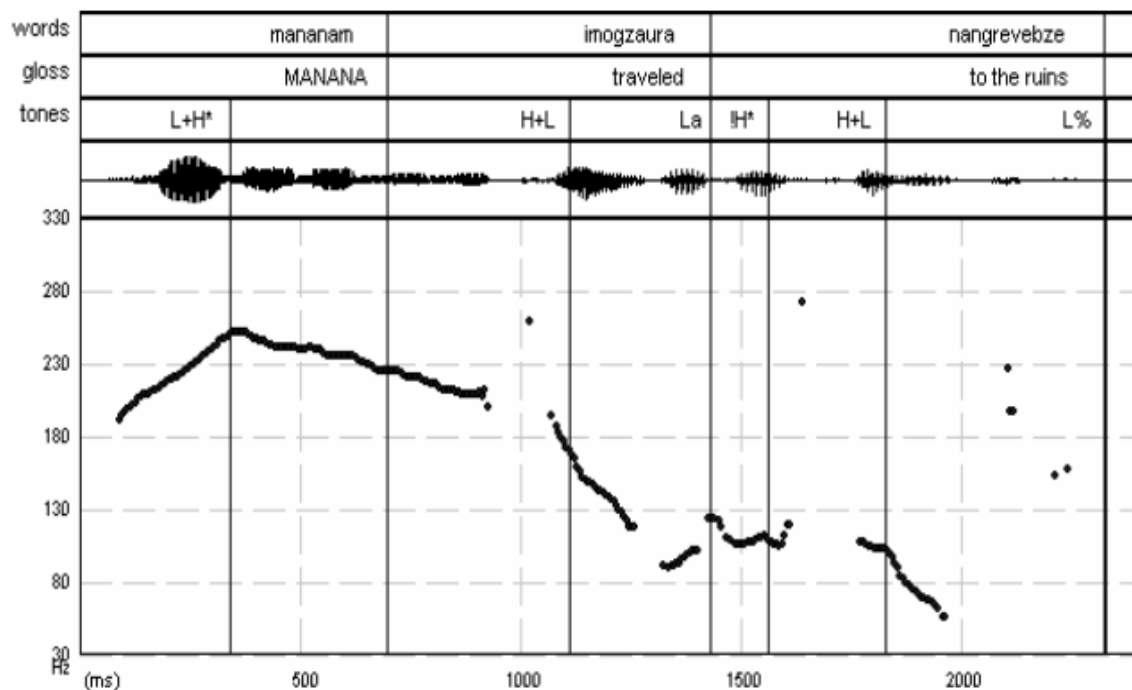
Fig.12 From *Intonational Phonology of Georgian.* Jun et al. (2007:53)

This order seems to be more 'natural'. Perhaps the awkward word order in Fig. 11 could account for the absence of both pitch accent and boundary after the subject. It would be interesting to observe whether a reordering of the constituents to the order [subj-verb-ind.obj-posposition] would result in verb integration into the focused Subject NP, instead of deaccenting and dephrasing that Fig. 11 exhibits. In fact Fig. 12, where the verb immediately follows the focused subject, is described by the authors as being a case of verb integration.

Jun et al. claim that "compared to English or Spanish, Georgian has shows much closer connection between syntactic/semantic grouping and prosodic phrasing". The motivations for positing this claim seem unclear from their paper.

1.2.2   JUN ET AL. MODEL OF GRAMMAR

Jun et al. assume the Autosegmental-Metrical model of intonation. This model "adopts the phonological goal of being able to characterize contours adequately in terms of a string of categorically distinct elements, and the phonetic goal of providing a mapping from phonological elements to continuous acoustic parameters." (Ladd 2008:43) The AM model of intonation grew out of representational issues in intonational phonology. Autosegmental representation was an answer to difficulties in representing tonal structure in the earlier suprasegmental model. The term 'suprasegmental' refers to the fact that the tonal features are not features of individual segments, while the term autosegmental captures the fact that although prosodic features are not part of segment feature matrices, they comprise an autonomous level of representation of the intonational properties of sentences. Metrical phonology studies the linguistic prominence of syllables, accounting for "utterance-level prominence patterns" (Ladd 2008).

1.2.3   *INTONATIONAL PHONOLOGY OF GEORGIAN* IN ANOTHER MODEL

Jun et al. interpret the intonational contours of the sentences of Georgian they examined within the AM framework, which characterizes pitch contours as a sequence of localized events (pitch accents), with transitions between events. Within another intonational model, say IPO (Institute for Perception Research), intonational contours consist of stretches of pitch contour, instead of discrete events with transitions between them. For instance, a rising pitch contour might be characterized as a 'Type 4 Rise'. As such, interpreting the observations of Jun et al. in the IPO model of intonation would have given us an inventory of types of rises and falls, instead of an inventory of tones.

1.3 CONCLUSIONS

This chapter analyzed two treatments of the relationship between word order and intonation in Georgian. Both studies confirmed that prosody and syntax work together to express different pragmatic contexts (declarative, interrogative, focus). The focus of Skopeteas et al. was on examining whether context-appropriate prosody could override weak and strong word order violations, with the conclusion that weak word order violations could be accommodated in the presence of context-congruent prosody, while strong violations could not.

The focus of Jun et al. was on outlining a prosodic structure and tonal inventory of Georgian. The paper introduced several language-specific prosodic characteristics of Georgian, (such as the AP pitch accent, the H+L phrase accent, and the complex tonal contour HLH) characterizing it as an exotic language by virtue of having the H+L phrase accent, and the AP (post-lexical) pitch accent. Jun et al. concluded that Georgian shows a close connection between syntactic and semantic grouping, and prosodic phrasing.

Since there is relatively little research on the interaction of intonation and word order in Georgian, Skopeteas et al. and Jun et al. provide a helpful framework with their research, which can serve as the foundation for further investigation. Although certain conclusions drawn in both studies (especially in Skopeteas et al. 2009) seem objectionable when examined through the structure of the generative theoretical model, the papers nevertheless lay a useful groundwork upon which future research, including my own, will be based.

In Chapter 2, I will continue the discussion on the interaction of word order and intonation in Georgian. However, instead of using experimentally constructed data (in the form of prerecorded, lab-generated sentences), I will focus on analysis of freely-generated

speech, with an exploration of the characteristics of speakers' intonation produced in a relatively natural speaking environment (i.e., outside of the lab) and an investigation of how the prosody interacts with the apparently free word order in Georgian.

CHAPTER 2

THE SWANS STORY EXPERIMENT

The goal of the Swans Story experiment was to gather evidence on the intonational contours of freely generated native Georgian speech. The intonational contours of a set of isolated sentences produced in a lab setting (as in the studies of Skopeteas et al and Jun et al) may not fully reflect the tonal contours found in natural speech, since the individual sentences are read in an isolated environment, without a universe of discourse to provide the context. If a sentence happens to be semantically ambiguous, there would be two possible intonational contours associated with its syntactic structure. Although in the studies of Skopeteas and Jun each sentence was set in context by a question, the prosodic phrasing of a set of sentences connected by a continuous developing theme, as in a story, was left unexplored.

To this end, the idea behind setting up the Swans Story experiment was to determine how the intonational contours of freely generated speech would compare and/or differ from the intonational contours of speech generated in an experimentally constructed lab setting. A story entitled "Mzia and the Swans" was written for this purpose. The content of the story deals with a fictional tale of a girl's discovery of two talking swans by a lake nearby her house in the village, where she lives with her grandfather. The lighthearted nature of the story was meant to encourage the informant to speak naturally, with hope that the engaging content of the story would allow the reader to deliver the content as they would in a natural setting.

The hypothesis prior to the experiment predicted that certain characteristics of the intonational properties of Georgian sentences would match those described in the studies of Skopeteas and Jun, while others would be found to differ in ways undetermined prior to the experiment. Details of the findings are summarized in the RESULTS section.

2.1   METHOD

One female native Georgian speaker served as the informant for the study. (To

clarify, the informant, and the author of this thesis, also a native Georgian speaker, are not the same person). She was asked to read "Mzia and the Swans" without any prior knowledge or exposure to the story. Her reading of the story was recorded in a quiet room with a SONY IC Recorder (Model ICD-UX71). The speech recording was transcribed, then analyzed with *Praat* speech analysis software. Pitch tracks were created using *Praat.*

2.2   ITEMS & CONDITIONS

The text of the story was written in Georgian script, and read by the informant in a casual setting in a quiet room. The text of the story "Mzia and the Swans" was comprised of thirty-five sentences including declarative, interrogative, imperative, and conditional sentence types.

Examples of sentence types found in the story are provided below, along with the associated pitch tracks:

1) ***DECLARATIVE -*** SENTENCE 2:
.jdtk lqt, cfepvbc itvltu, vpbf ufbmwtjlf vlbyfhbc yfgbhpt
qovel dghe, sauzmis shemdeg, mzia-Ø gaikceoda   mdinar-is napir-ze
Every day,   breakfast after,   mzia-NOM would-run river-GEN bank-on

.dfdbkt,bc cfrhtafl.
qvavileb-is sakrepat
flowers-GENgathering
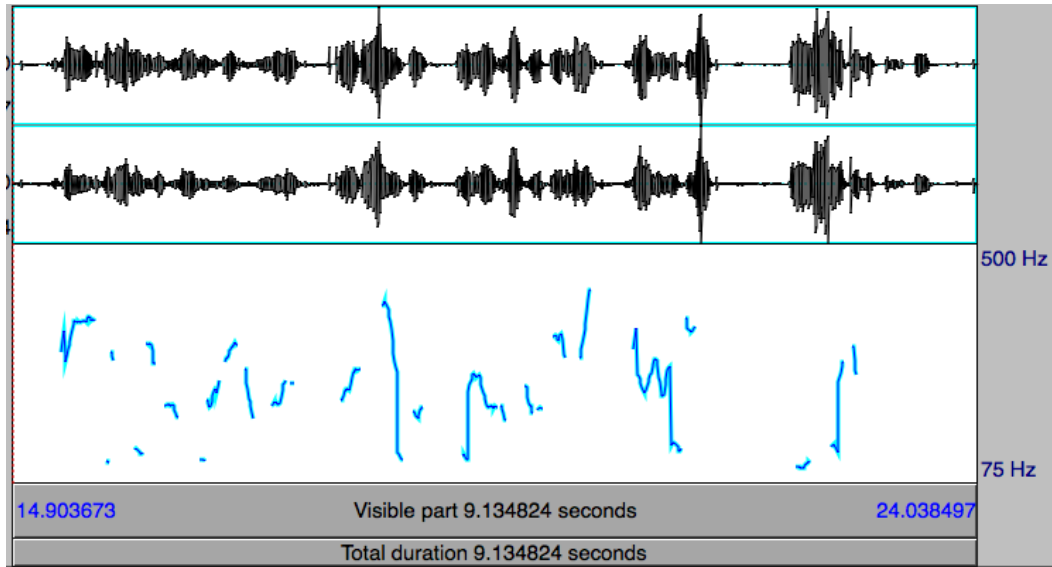
"Every day after breakfast, Mzia would run to the river bank to gather flowers."

2) *INTERROGATIVE* - Sentence 29:

cfl b.fdbs fvltyb [fyb?
sad   iqav-it   amdeni xani
where were-2ps.pl.SUBJ so-much time?
"Where were you for so long?"
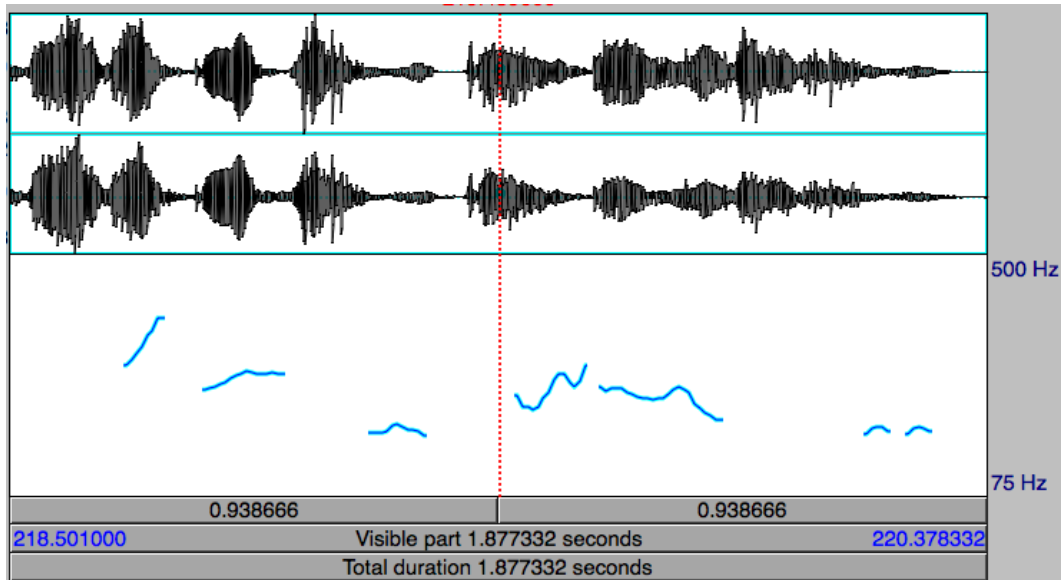
3) *IMPERATIVE -* SENTENCE 27:

vjlb udtsfvfit, vpbf!
modi gvetamashe mzia
come play-with-us, Mzia!
"Come play with us, Mzia!"
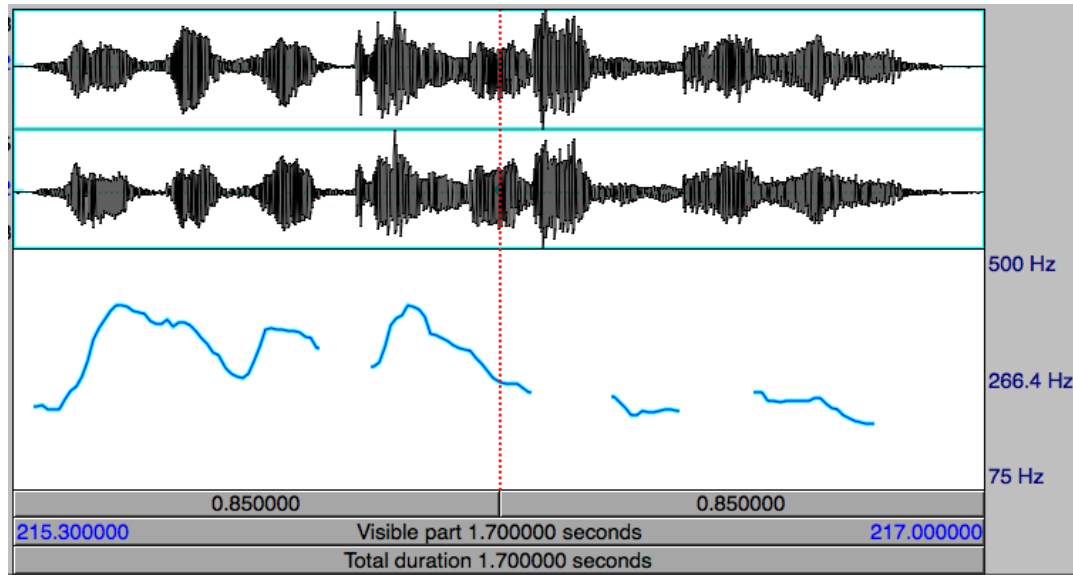
4) *CONDITIONAL -* SENTENCE 32:

hjwf ,f,efcsfy thsfl vj[dfk xdty lfdbvfkt,bs

roca   babuas-tan   ertat   moxval chven davimalebit

When grandpa-with together you-come we will-hide.

"When you come together with Grandpa, we will hide."

| 458.9 Hz |
| 75 Hz |

| 1.923121 | 1.923121 |
| 229.272766 | Visible part 3.846242 seconds | 233.119008 |
| Total duration 3.846242 seconds |
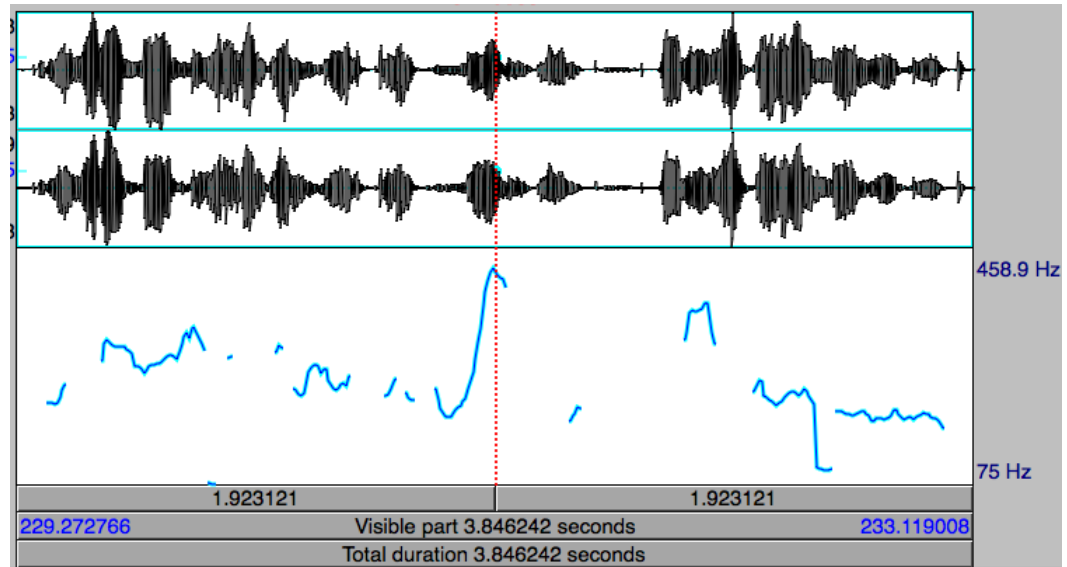
2.3 WORD ORDERS in STORY

Out of 35 sentences in the story, there were a total of 14 sentences with the SV word order, and only 5 with the verb initial VS word order. The rest of the sentences had: either a verb with subject and/or object agreement marking, but without an overt subject and/or object in their respective syntactic positions; or there was an indirect object between the subject and verb, in which case it was always the SO_2V order, and never the VO_2S (where O_2 is the indirect object).

2.4 RESULTS

An analysis of the recording of the story "Mzia and the Swans" confirmed previous studies (Skopeteas et al, Jun et al) on the interaction of word order and intonation in Georgian, revealing that prosodic phrasing does in fact mirror the grouping of syntactic constituents.

The basic (most common) word order in the story was SV(O). As mentioned in Skopeteas et al, most authors agree that the default word order in Georgian is verb final. In my analysis of the story, I compared the occurrence of pre-verbal (S(O)V(O)) and post-

verbal (VS(O)) subjects in sentences, so the position of the object was secondary. This was done since to take into account intransitive sentences (without a direct object). Verb-initial sentences occurred in clauses with narrative semantics, for instance, in a clause of SENTENCE 32 (bolded):

hjwf ,f,efcsfy thsfl vj[dfk xdty lfdbvfkt,bs," **ufbwbytc utlt,vf.**
roca   babuas-tan ertat   moxval chven davimalebit   **gaicines   ged-eb-ma**
When grandpa-with together you-come we will-hide,"   **laughed   swan-pl.-ERG.**

Observations from the Swans Story study that confirmed the findings in previous studies of Georgian intonation included the following:

- Prosodic grouping was found to reflect syntactic constituency, with syntactic units corresponding to prosodic units. For instance, heavy subject and object NPs and bare noun NPs had similar prosodic phrasing.
- when focus falls on a sentence-final word, there is little effect in prosody (eg. Sentence 2). The sentence-final focused word is not uttered with the same degree of emphasis as a non-sentence-final focused word. It exhibits low pitch, and phrase-final lengthening.
- Declination effects occur over the course of the sentence, with each pitch contour lower than the one before.

These observations show that word order does have an effect on the intonational contour of the sentence. A focused word was found to be pronounced with a higher degree of emphasis when it occurred sentence-initially or sentence-medially, while it was found to have little emphasis when it occurred in sentence-final position. The F0 was also higher in constituents occurring sentence initially, and decreased over the course of the sentence.

In certain cases there was a mismatch between what was written in the story, and what the informant uttered. The source of this disfluency can be attributed to word orders perceived to be awkward by the informant (for example, verb initial ones), or also to her perception of the (un)grammaticality of certain forms, or other extra-linguistic factors. This will need to be explored further.

41

2.5   CONCLUSION

For future research, it would be noteworthy to record Georgian speech occurring in a natural setting, perhaps without the speakers being aware they are being recorded, and examine the intonational patterns and word order that occurs in natural, unplanned, speech. It would be interesting to observe whether certain 'rare' word orders included in previous studies, such as VSO_1O_2 (Word Order 4 in Skopeteas et al), are attested at all in spoken Georgian.

Also of note is the fact that Georgian is a pro-drop language, where the subject position can be left phonologically vacuous (not pronounced). Instead, subject and object agreement markers are prefixed and suffixed on the verb, meaning that certain Georgian sentences do not have an overt subject or object. Syntactically, the subject/object agreement morphemes could occupy their traditional functional positions in the syntactic tree, yet it is difficult to determine the word order in a sentence where it is unclear whether the subject precedes or follows the verb.

CHAPTER 3

THE CASE MARKING SYSTEM

Looking at the transliteration of the Georgian story provided in Appendix C, certain features of the case marking system may strike those who are familiar with universal case marking types as unusual. For instance, we see the subject being marked with each of the three cases that mark verbal arguments in Georgian: the NOMINATIVE, the ERGATIVE, and the DATIVE case. This means that there is no single case that is dedicated to marking subjects in Georgian. The examples below show that NOMINATIVE, DATIVE, and ERGATIVE case marking morphemes are all found as case marking suffixes on the subject *Mzia*:

1) **vpbf-Ø** ufbmwtjlf vlbyfhbc yfgbhpt.
   mzia-Ø gaikceoda   mdinar-is napir-ze
   Mzia-NOM would-run   river-GEN   bank-on
   Mzia would run to the riverbank

2) "hf kfvfpb lqtf!"ufbabmhf **vpbf-v.**
    ra   lamazi   dghea gaipikra   **mzia-m**
   "What beautiful day-it-is!" thought **Mzia-ERG**
   "What a beautiful day it is!" thought Mzia.

3) rb o.bylf **vpbf-c** hjv vbcb ,f,ef dthfcjltc dth yf[fdlf utlt,c,
    ki c'qinda **mzia-s** rom misi babua-Ø verasodes ver naxavda gedeb-s
   although hurt **Mzia-DAT** that her grandpa-NOM never can't see swans-DAT
   Although Mzia was hurt that her grandpa would never see the swans

The above examples are clauses taken from Sentences 2, 4, and 33 from "Mzia and the Swans" story. These sentences illustrate that there is a lack of one to one correspondence between case and grammatical function in Georgian. We cannot tell by looking at the case marking on the verbal argument whether that constituent serves the subject, direct object, or indirect object function in the sentence. At first glance, the case marking morphemes do not seem to reveal the semantic/syntactic role of the argument which they mark. However, there

43

is an underlying system to the apparent irregularity. This chapter offers an overview of the case marking system of Georgian, providing a background on the interaction of case and tense in the language.

3.1   CASE MARKING

The Georgian verbal system is notoriously complex. The case marking system is of no exception. A lack of one-to-one correspondence between a particular case and the grammatical function of the verbal argument which it marks makes positing explanatory accounts of the interaction of case with tense, and syntactic and semantic roles of verbal arguments a tremendous challenge, as pointed out by Alice Harris:

> "[Georgian] has three cases, which, by various patterns, mark the subject, direct object, and indirect object. Naming these cases is difficult in the Kartvelian languages for several reasons. First, the functions of a single case change over time, yet it seems desirable to have a single name for it. Second, at a given time, a single case has such different functions in different case patterns that naming it is difficult. For example, in Modern Georgian the $-i/\theta$ case marks all subjects in Series I but only some subjects and all direct objects in Series II." (Harris 1981).

The Georgian case marking system seems to be a function of four factors: tense, aspect, volition, and verb class. Each of these features/categories plays a role in the way that case is assigned to verbal arguments. Whether a given verb form is in the present or past tense, whether it has perfective or imperfective aspectual features, an agentive or non-agentive subject, as well as the verb class category to which it belongs – all of these factors influence the distribution of case marking morphemes on verbal arguments.

Section 3.2 includes an outline of the Georgian tense system, with examples that show that the case marking of verbal arguments changes according to which tense the given verb form belongs to. For instance, subjects of transitive clauses in the present tense are marked with

44

the NOM suffix, -i, while subjects of transitive clauses in the past tense carry the ERG case marker, -ma:

a) kac-i tort-s a-cxob-s

man-NOM cake-DAT PRV-bake-3ps.sg.SUBJ

'The man is baking a cake.'

b) kac-ma tort-i gamo-a-cx-o

man-ERG cake-NOM PVB-PRV-bake-3ps.sg.SUBJ

'The man baked a cake.'

The interaction between case and Series is discussed in Section 3.3. Georgian has seven cases in total; three of them (NOM, ERG, DAT) mark verbal arguments. As mentioned in Amiridze 2006, "…subjects and objects are not marked consistently. The three case marking affixes associated with verbal arguments are not uniquely distributed between subject, object, and indirect object. The subject of a clause can be marked with any of the three cases (NOM, ERG, DAT)".

Section 3.4 outlines the three universal case marking alignment types (NOM, ERG, or ACT), and offers an explanation for why Georgian is correctly described as having a split between the active and nominative case marking patterns, rather than the traditional analysis of Georgian as a split-ergative case marking system. Among intransitive verbs, Georgian makes a distinction between unergative and unaccusative subjects with respect to their case marking. It is on the basis of this observation that Georgian is categorized as having the active, rather than the ergative case marking distribution. Section 3.5 outlines the factors that influence case assignment in Georgian, namely tense, aspect, volition, and verb class. A summary is given in Section 3.6.

3.2   SCREEVES AND SERIES

In reference to the Georgian Tense-Aspect-Mood categories, the term *tense* is abandoned in favor of the term *screeve*. According to H. Aronson, " [The term] *screeve*, [was] coined by the Georgian linguist Akaki Shanidze, from the Georgian word *mckrivi*, 'row'. A *screeve* is what is traditionally called a tense, i.e. a set of six forms of a given verb differing only in person and number. But since the various "tenses" do not always have temporal meaning, but may have modal or aspectual meanings instead, we prefer the more unusual but less misleading term of *screeve*."

Georgian has eleven screeves in total, organized into groups of three distinct series. Series I includes the present and the future sub-series, Series II, the *aorist*, corresponds to the English simple past and includes the optative screeve, and Series III includes the perfect screeves.

Series	(Sub-)Series	Screeve
I	Present	1) Present 2) Imperfect 3) Present Subjunctive
	Future	4) Future 5) Conditional 6) Future Subjunctive
II	Aorist	7) Aorist (Simple Past) 8) Optative
III	Perfect	9) Perfect 10) Pluperfect 11) Perfect Subjunctive

Table 3.1 The Screeve Paradigm in Georgian

The distribution of case marking morphemes in Georgian is partly dependent on the Series to which the verb form belongs. In Georgian, subjects can be marked with a morpheme indicating the NOM, ERG, or DAT case, while direct objects can be marked with either the NOM or the DAT case. Both subjects and direct objects bear different case marking

46

suffixes depending on whether the verb form is in Series I, II, or III. Example sentences in Section 3.2.1 below illustrate the correlation between the Series to which the verb form belongs and the case marking suffix on the verbal argument.

3.2.1 SCREEVES AND CASE MARKING

Series I

1. PRESENT INDICATIVE

   Transitive

   1) kal-i vashl-s ch'am-s.

   woman-NOM apple-DAT eat-3ps.sg.SUBJ

   'The woman is eating an apple.'

   Unergative

   2) kal-i cekva-v-s.

   woman-NOM dance-?-3ps.sg.SUBJ

   'The woman is dancing.'

   Unaccusative

   3) kal-i vard-eb-a.

   woman-NOM fall-Pres/Fut.Stem.Formant-3ps.sg.PAST

   'The woman is falling.'

2. IMPERFECT

   Transitive

   4) kal-i vashl-s chamd-a

   woman-NOM apple-DAT eat-?-3ps.sg.PAST

   'The woman was eating an apple.'

   Unergative

   5) kal-i cekvavd-a

   woman-NOM dance-3ps.sg.PAST

47

'The woman was dancing/used to dance.'

Unaccusative

    6) kal-i vard-eb-od-a

        woman-NOM fall-?-?-3ps.sg.PAST

        'The woman was falling/used to fall.'

3. PRESENT SUBJUNCTIVE

Transitive

    7) kal-i (rom) vashl-s chamd-es

        woman-NOM if apple-DAT eat-

        'If the woman was eating an apple'

Unergative

    8) kal-i rom cekvav-d-es

        woman-NOM if dance-?-3ps.sg

        'if the woman was dancing'

Unaccusative

    9) kal-i rom vard-eb-od-es

        woman-NOM if fall-?-?-3ps.sg

        'if the woman was falling'

4. FUTURE

Transitive

    10) kal-i vashl-s she-cham-s

        woman-NOM apple-DAT PVB-eat-3ps.sg.SUBJ

        'The woman will eat the/an apple'

Unergative

    11) kal-i i-cekva-v-s

        woman-NOM Pre.Radical.Vowel-dance-?-3ps.sg

'The woman will dance.'

Unaccusative

> 12) kal-i da-vard-eb-a
>
> woman-NOM PVB-fall-Pres/Fut.Stem.Formant-3ps.sg
>
> 'The woman will fall.'

5. CONDITIONAL

Transitive

> 13) kal-i vashl-s she-cham-d-a
>
> woman-NOM apple-DAT PVB-eat-?-3ps.sg.PAST
>
> 'The woman would hold the/an apple.'

Unergative

> 14) kal-i i-cekva-v-d-a
>
> woman-NOM PRV-dance-?-?-3ps.sg.PAST
>
> 'The woman would dance.'

Unaccusative

> 15) kal-i da-vard-eb-od-a
>
> woman-NOM PVB-fall-?-?-3ps.sg. PAST
>
> 'The woman would fall.'

6. FUTURE SUBJUNCTIVE

Transitive

> 16) kal-i rom vashl-s she-cham-d-es
>
> woman-NOM if apple-DAT PVB-eat-?-?
>
> 'if the woman was to eat an apple'

Unergative

> 17) kal-i rom i-cekv-eb-d-es

49

woman-NOM if PRV-dance-Pres/Fut.Stem.Formant-?-?

'if the woman was to dance'

Unaccusative

18) kal-i rom da-vard-es

woman-NOM if PVB-dance-?

'if the woman was to fall'

Series II

7. AORIST (SIMPLE PAST)

Transitive

19) kal-ma vashl-i she-cham-a

woman-ERG apple-NOM PVB-eat-3ps.sg.PAST

'The woman ate an/the apple.'

Unergative

20) kal-ma i-cekv-a

woman-ERG PRV-dance-3ps.sg.PAST

'The woman danced.'

Unaccusative

21) kal-i da-vard-a

woman-NOM PVB-dance-3ps.sg.PAST

'The woman fell.'

8. OPTATIVE

Transitive

22) kal-ma vashl-i (unda) she-cham-os

woman-ERG apple-NOM (must) PVB-eat-?

'the woman must eat an/the apple.'

Unergative

> 23) kal-ma (unda) i-cekv-os
>
>   woman-ERG (must) PRV-dance-?
>
> 'The woman must dance/let the woman dance.'

Unaccusative

> 24) kal-i (unda) da-vard-es
>
>   woman-NOM (must) PVB-fall-?
>
> 'The woman must fall/let the woman fall.'

Series III

9. PERFECT

Transitive

> 25) kal-s vashl-i she-u-cham-i-a
>
>   woman-DAT apple-NOM PVB-?-eat-?-3ps.sg.PAST
>
>   'The woman has eaten an apple.'

Unergative

> 26) kal-s u-cekv-i-a
>
>   woman-DAT ?-dance-?-3ps.sg.PAST
>
> 'The woman has danced.'

Unaccusative

> 27) kal-i da-vard-n-i-l-a
>
>   woman-NOM PVB-fall-?-?-?-3ps.sg.PAST
>
> 'The woman has fallen.'

10. PLUPERFECT

Transitive

> 28) kal-s vashl-i she-e-cham-a
>
>   woman-DAT apple-NOM PVB-?-eat-3ps.sg.PAST

51

'The woman had eaten an/the apple.'

Unergative

29) kal-s e-cekv-a

woman-DAT ?-dance-3ps.sg.PAST

'The woman had danced.'

Unaccusative

30) kal-i da-vard-niliq-o

woman-NOM PVB-fall-?

'The woman had fallen.'

11. PERFECT SUBJUNCTIVE

Transitive

31) kal-s vashl-i she-e-cham-os

woman-DAT apple-NOM PVB-?-eat-?

'May the woman eat the apple.'

Unergative

32) kal-s e-cekv-os

woman-DAT PRV-dance-?

'May the woman dance.'

Unaccusative

33) kal-i da-vard-niliq-os

woman-NOM PVB-fall-?

'May the woman fall.'

3.3   CASE MARKING AND SERIES

52

The data above illustrates that in Georgian, subjects and objects are marked with different cases depending on which Series the verb form is in. All subjects (transitive, unergative, and unaccusative) are marked with the NOM suffix -*i* in Series I, while direct objects carry the DAT case marker -*s*. In Series II, subjects of transitive and unergative verbs are marked with the ERG case marker –*ma*, while subjects of unaccusatives and direct objects are in the NOM case. Transitive and unergative subjects are once again treated the same way in Series III – they both carry the DAT case suffix -*s*, while unaccusative subjects and direct objects are differentiated and marked with the NOM case.

Verbal Argument	Series I	Series II	Series III
SUBJ Transitive	NOM	ERG	DAT
SUBJ Unergative	NOM	ERG	DAT
SUBJ Unaccusative	**NOM**	**NOM**	**NOM**
DIR OBJ	DAT	NOM	NOM

Table 3.2 The Case Marking Pattern in Georgian

Several observations can be made from this data. Firstly, in Georgian, all subjects in Series I are treated the same way (i.e. marked with the NOM case), but in Series II and III subjects of unaccusative verbs are not grouped together with subjects of transitive and unergative verbs; instead, they are treated as direct objects, both carrying the NOM case suffix. So in Series II and III agentive subjects (those of transitive and unergative verbs) are marked distinctly from subjects that have non-agentive semantic roles (unaccusatives). It is interesting to observe that in Series I (present and future tense verb forms) intransitive subjects are not differentiated from transitive subjects with respect to case marking – unergative and intransitive subjects are both marked with the NOM case marker, along with subjects of transitive verbs. Yet in Series II (past tense screeves) and Series III (perfect screeves), unaccusative subjects are differentiated from subjects of transitives and unergatives, and marked the same way as direct objects (with the NOM case). Secondly, it is of note that subjects of unaccusative verbs are consistent across all three Series, carrying the NOM case suffix –*i* throughout. Finally, this leads to the observation that two of the three

universal case marking types are found in Georgian: nominative case marking pattern in Series I, and the Active case marking pattern in Series II and III.

Series	Transitive	Unergative	Unaccusative	Dir Object	Alignment
I	NOM -*i*	NOM -*i*	NOM -*i*	DAT -*s*	NOM
II	ERG -*ma*	ERG-*ma*	NOM -*i*	NOM -*i*	ACTIVE
III	DAT-*s*	DAT -*s*	NOM -*i*	NOM -*i*	ACTIVE

Table 3.3 Georgian Case Marking Suffixes and Case Marking Type Alignment

Conventionally, Georgian has been labeled as a language exhibiting nominative and ergative types of case marking, with the nominative case marking pattern in the present tense, and the ergative case marking pattern in the past tense. For instance:

> i)   kal-i surat-s xatav-s
>
>   woman-NOM picture-DAT draw-3ps.sg.PRES
>
>   'The woman is drawing a picture.'

> ii)   kal-ma surat-i da-xat-a
>
>   woman-ERG picture-NOM PVB-draw-3ps.sg.PAST
>
>   'The woman drew a picture.'

The analysis of Georgian as having an ergative case marking system in the past tense could be due to the fact that in Series II (past tense), the subject carries a case marking suffix that is labeled *ERG*. Yet referring to a case marking pattern as ergative presupposes a particular pattern in the case marking system of that language. More specifically, ergative case marking systems mark all intransitive subjects the same way as direct objects. Since Georgian does not exhibit this trait in either of the three Series (present/future, past, and perfect), it does not make sense to refer to its case marking system as ergative. (Amiridze 2006: 16)

3.4   UNIVERSAL CASE MARKING TYPES

The languages of the world (those that have been subject to linguistic analysis) exhibit three types of case marking patterns – nominative, ergative, and active.   The defining characteristic of the nominative pattern is that all subjects (transitive and intransitive) are marked the same way (with morpheme X), while direct objects are marked differently (with morpheme Y). Ergative case marking refers to a pattern where all intransitive subjects (both unergatives and unaccusatives) and direct objects are treated similarly by being marked with the same case marking suffix (morpheme X), while subjects of transitive verbs carry a different suffix (morpheme Y). Finally, the Active case marking system makes a distinction between unergative and unaccusative intransitives, grouping the unergatives with transitive subjects (both carrying morpheme X as the case marker), and the unaccusatives with direct objects (with morpheme Y as the case marking affix on both arguments).   The Active case marking pattern treats unergatives and unaccusatives as two separate syntactic categories; unergatives are treated the same way as transitive subjects, both marked with the same morpheme, while unaccusatives and direct objects are treated as one and the same syntactic category, both arguments being assigned the same case.   The two types of intransitive verbs are also distinguished by virtue of their semantic differences, as pointed out by Alice Harris (1981):

> "The distinction between two syntactic types of intransitives corresponds approximately to the dichotomy between active and inactive clauses.   This distinction refers to controllability, agentivity, or volition on the part of the surface subject.   A verb is said to be ACTIVE if it is controllable by the surface subject; it is said to be INACTIVE if it is not controllable by the surface subject." (Harris, pg. 41).

The three case marking alignment patterns of the world's languages differ in their treatment of intransitive subjects.   Languages that treat intransitive subjects the same way as transitive subjects are said to have the NOMINATIVE case marking

pattern (i.e. English); those that mark intransitive subjects the same way as direct objects are said to have ERGATIVE case alignment; and languages that distinguish between the two types of intransitives, grouping the unergatives with transitive subjects, and the unaccusatives with direct objects, are said to have the ACTIVE case marking alignment.

ALIGNMENT PATTERN	Direct Object	Subject (Intransitive) Inactive | Active		Subject (Transitive)
NOMINATIVE	A	B	B	B
ERGATIVE	A	A	A	B
ACTIVE	A	A	B	B

Table 3.4 Case marking alignment types (from Harris 1981).

3.4.1 NO ERGATIVITY IN GEORGIAN

By virtue of the defining characteristics of the three case marking types, the Georgian case marking system has characteristics of both the NOMINATIVE and ACTIVE case marking pattern. In Series I, the case marking pattern is NOMINATIVE, while in Series II and III the case marking pattern conforms to the ACTIVE type.

Series	Transitive	Unergative	Unaccusative	Dir Object	Alignment
I	NOM -*i*	NOM -*i*	NOM -*i*	DAT -*s*	NOM
II	ERG -*ma*	ERG-*ma*	NOM -*i*	NOM -*i*	ACTIVE
III	DAT-*s*	DAT -*s*	NOM -*i*	NOM -*i*	ACTIVE

Table 2.3.1 Georgian Case Marking Suffixes and Case Marking Type Alignment

Although conventionally Georgian has been pegged as a language with a split-ergative case marking system, Amiridze (2006) notes that "…the existence of the case label ERG…does not necessarily presuppose that Georgian is an ergative or a split-ergative language. The traditions of labeling the case marker and the actual application/distribution of it diverge, and

56

Georgian does not show the ERG alignment in either of the three TAM Series." (pg16) Therefore since the occurrence of constructions where both types of intransitives are marked the same way as direct objects is absent, it does not make sense to classify Georgian as having an ergative case marking pattern. Instead, by marking transitive and unergative subjects alike and grouping unaccusatives with direct objects (in Series II and III), Georgian exhibits an ACTIVE pattern in the past tense.

3.5   WHAT DRIVES CASE ASSIGNMENT?

There are four factors that influence case assignment, as noted in Amiridze (2006): "Case marking depends not only on the syntactic status of the verbal arguments, but also on such factors as tense, aspect, volition, and verb class. […] cases like NOM and DAT are able to mark both the subject and the object arguments depending on the argument structure of the verb, verb class, and aspectual and temporal characteristics expressed by the verb form." (pg 16)

The sections below offer examples that show how each of the four factors influence case assignment in Georgian.

TENSE

In Georgian, subjects and objects are marked with different case marking morphemes depending on whether they are in the present or past tense. For example:

PRESENT TENSE – Series I
Transitive
      iv) kal-i kab-eb-s kerav-s
        woman-NOM dress-plural-DAT sew-3ps.sg.SUBJ
        'The woman is sewing the dresses.'
Unergative
      v) kal-i ighim-eb-a
        woman-NOM smile-Stem.Formant-3ps.sg

'The woman is smiling.'

Unaccusative

      vi) kal-i vard-eb-a

        woman-NOM fall-Stem.Formant-3ps.sg

        'The woman is falling.

In the present tense (Series I), all subjects are marked NOM, while the direct object is marked DAT.

FUTURE TENSE – Series I

Transitive

      vii) kal-i kab-eb-s she-kerav-s

        woman-NOM dress-plural-DAT PVB-sew-3ps.sg.SUBJ

        'The woman will sew the dresses.'

Unergative

      viii) kal-i ga-i-ghimeb-s.

        woman-NOM PVB-PRV-smile-Stem.Formant-3ps.sg

        'The woman will smile.'

Unaccusative

      ix) kal-i da-vard-eb-a

        woman-NOM PVB-fall-Stem.Formant-3ps.sg

        'The woman will fall.'

In the future tense (Series I), all subjects are also marked with NOM, while the direct object is marked DAT.

PAST TENSE – Series II (Aorist)

Transitive

58

x) kal-ma kabeb-i she-ker-a

    woman-ERG dresses-NOM PVB-sew-3ps.sg.SUBJ

    'The woman sewed the dresses.'

Unergative

xi) kal-ma ga-i-ghim-a

    woman-ERG PVB-PRV-smile-3ps.sg

    'The woman smiled.'

Unaccusative

xii) kal-i da-vard-a

    woman-NOM PVB-fall-3ps.sg

    'The woman fell.'

In the past tense (Series II), the transitive and unergative subjects in (x) and (xi) are marked with ERG, while the unaccusative subject and the direct object are marked with the NOM case.

PERFECT TENSE – Series III

Transitive

xiii) kal-s kab-eb-i she-u-ker-i-a

    woman-DAT dress-plural-NOM PVB-?-sew-?-3ps.sg.SUBJ

    'The woman has sewn the dresses.'

Unergative

xiv) kal-s ga-u-ghim-i-a

    woman-DAT PVB-?-smile-?-3ps.sg

    'The woman has smiled.'

Unaccusative

xv) kal-i da-vard-nil-a

    woman-NOM PVB-fall-?-3ps.sg

59

'The woman has fallen.'

ASPECT

In Georgian, a change in aspectual features triggers a corresponding change in the case marking of subjects. (There is also a change from Series II to Series III here). For instance:

xvi) kal-ma surat-i da-xat-a

woman-ERG picture-NOM PVB-draw-3ps.sg.SUBJ

'The woman drew a picture.'

xvii) kal-s surat-i da-u-xat-i-a

woman-DAT picture-NOM PVB-?-draw-?-3ps.sg.SUBJ

'The woman has drawn a picture.'

VOLITION

Whether the subject is an agent of the action or whether the subject is non-agentive also plays a role in case assignment in Georgian. The following are two sentences from Series II (past tense):

xviii) bavshv-ma ga-icin-a

child-ERG PVB-laugh-3ps.sg.SUBJ

'The child laughed.'

xiv) bavshv-i ga-lamaz-d-a

child-NOM PVB-beautiful-?-3ps.sg

'The child became more beautiful.'

Both of the above intransitive sentences are in the past tense, yet the subjects carry different case marking. The only difference between the two examples is that the first has an ACTIVE

verb, since the subject has control of the action, while in the second example the verb is INACTIVE, since the subject has no volition/control (is non-agentive).

VERB CLASS

The verb class to which a given verb form belongs is yet another factor which plays a role in case assignment in Georgian. The verbs are categorized according to semantic as well as syntactic criteria, and one verbal root can be part of more than one verb class, depending on its particular form. There are some general criteria that qualify a given verb into either of the five verb classes, but these criteria are overlapping and irregular. There are five verb classes in total, described below.

· *Class 1 – Transitive Verbs*

This is a class of mostly transitive verbs, such as:

m-xatav-s	$\Rightarrow$	*da-m-xatav-s*
1st.ps.sg.OBJ-draw-3ps.sg.SUBJ		PVB-1st.ps.sg.OBJ-draw-3ps.sg.SUBJ
's/he draws me'		's/he will draw me'

Class 1 verbs form the future tense by adding a preverb.

· *Class 2 – Intransitive Verbs*

This class consists of intransitive verbs, such as the following:

$\Rightarrow$ *tovl-i dneb-a*

snow-NOM melt-3ps.sg.SUBJ

'The snow is melting'

$\Rightarrow$ *rdze dughdeb-a*

milk boil-3ps.sg.SUBJ

'The milk is boiling.'

61

· *Class 3 – Medial Verbs*

This class includes mostly intransitive verbs that form the future tense by adding the prefix *–i* to the root.

⇒ bavshv-i tamashob-s   ⇒   bavshv-i i-tamash-eb-s

child-NOM play-3ps.sg.SUBJ   child-NOM PRV-play-?-3ps.sg.SUBJ

'the child plays'   'the child will play'

PJ Hillery (armazi.com) notes that "these verbs generally describe dynamic situations that are viewed as lasting for a certain period of time." For instance, verbs such as *kankali* 'to tremble', *qvirili* 'to yell', and *batonoba* 'to rule'.

· *Class 4 – Inversion Verbs*

They mark the subject with the DAT case, and the direct object with the NOM case.

34) kal-s k'bil-i t'k'iv-a

woman-DAT tooth-NOM hurt-3ps.sg.SUBJ

'The woman's tooth hurts.'

35) kal-s gasagheb-i da-e-karg-eb-a

woman-DAT key-NOM PVB-PRV-lose-Stem.Formant-3ps.sg.SUBJ

'The woman will lose the key.'

36) kal-s da-acemin-a.

woman-DAT sneeze -3ps.sg.PAST

'The woman sneezed.'

37) kal-s naqin-i qvar-eb-ia

woman-DAT ice cream-NOM love-Stem.Formant-3ps.sg.SUBJ

'The woman has loved (apparently loves) ice cream.'

The above sentences are examples of subjects being marked with the DAT case in Series I (34-35), II (36), and III (37). Normally, dative case marking is exhibited only in Series III with subjects of transitive and unergative verbs.

· *Stative Verbs*

According to PJ Hillery, stative verbs are intransitives which denote states (rather than processes) and are usually marked by the suffix –*i*. For example, the verb *a-nt-i-a*, 'it is lit'. To see how verb class affects the case marking pattern on the verbal arguments, let's consider the verb *cemineba* 'to sneeze'.

A. mghvdel-i i-cin-i-s.

Priest-NOM laugh-3ps.sg.SUBJ

'The priest is laughing.'

B. mghvdel-s e-cin-eb-a.

Priest-DAT ?-laugh-Stem.Formant-3ps.sg.SUBJ

'The priest wants to laugh/is trying to withhold laughter.'

The intransitive verbal root –*cin*- 'to laugh' can show up as part of Class 2 and Class 4 verbs, in turn affecting the case marking of its subject. In example A the subject is marked with the NOM suffix, while in B it is marked with the DAT.

3.6   SUMMARY

This chapter showed that contrary to the conventional categorization of Georgian as having a split-ergative case marking pattern, the case marking distribution on verbal arguments actually conforms to the NOMINATIVE case marking pattern in Series I and to the ACTIVE pattern in Series II and III.

The four factors influencing the distribution of case marking morphemes in Georgian (tense, aspect, volition, and verb class) were discussed. Tense plays a role in case assignment by triggering the NOMINATIVE case marking pattern in the present tense (Series I) and ACTIVE alignment in Series II and III. Volition is another factor that contributes to the characterization of Georgian as an ACTIVE case marking system, since it is due to the fact that Georgian grammar treats subjects of active and inactive intransitives as distinct categories that it is defined as having an ACTIVE case marking system. Finally, verb class contributes to which case the verbal arguments will bear, since the class to which a given verb form belongs has unique characteristics that are reflected in the case marking of the verbal argument.

CHAPTER 4

LATERAL FRONTING

The lateral fronting rule in Georgian can be used as evidence for 1) the interaction of syntax (i.e., word order) and phonology – it does not apply across word boundaries; and 2) to show that phonological rules need to be represented with more specificity.

Section 4.1 is concerned with how lateral fronting in Georgian relates to rule representation, and Section 4.4 addresses the relevance of lateral fronting to the issue of the interaction word order and phonology.

Of the two extensionally equivalent formulations (one most general, the other maximally specific) of the Georgian lateral fronting rule, the most general one has predictive power regarding the behavior of laterals before vowels that are not part of the Georgian phonemic inventory. Whether application of the rule extends to language external segments is dependent upon the way the rule is represented. Several theoretical issues arising from this fact: (1) the necessity of developing a principled algorithm for rule representation (supported by theoretical considerations and empirical evidence), (2) the issue of over-generalization and rule application to language-external segments, (3) and the necessity of choosing the 'correct' rule representation (and the challenges of relying on experimental work in helping

us decide) as a means of arriving at an understanding of the nature of the human phonological component, part of the ultimate aim of phonological inquiry.

4.1 RULE REPRESENTATION FOR LATERAL FRONTING IN GEORGIAN

Georgian has a five vowel system, consisting of the segments [i, e, u, o, a]. There are two types of laterals found in the language: dark (velarized) laterals [ɫ], and light (palatalized) laterals [l]. (Robins & Waterson 1952). The following data illustrates the distribution of laterals:

[ɫ omi]	[ɫ amazi]	[lekvi]	[aɫ ubaɫ -s]	[aɫ ubal-i]
'lion'	'beautiful'	'puppy'	'cherry-ACC'	'cherry-NOM'

Light laterals occur before the vowels [i, e] (in the words 'puppy' and 'cherry-NOM'), with dark laterals occurring elsewhere. The dark lateral /ɫ / is taken to be the underlying phoneme (the one that is stored in the mind of the native Georgian speaker), since it occurs in a variety of environments and its distribution is not predictable. The clear lateral [l] is analyzed as an allophone (un-stored surface realization) of /ɫ /, since its distribution is predictable, thus foregoing the necessity of having it take-up limited mental storage space. The following generalization can be made regarding the patterning of dark and light laterals in Georgian:

a) /ɫ / → [l] before [i, e]

The above rule asserts that Georgian speakers store a dark lateral /ɫ / as the mental representation of the phoneme, and this representation is pronounced as [ɫ] unless it is followed by the vowels [i] or [e], in which case its surface realization (pronunciation) is the light lateral [l]. In other words, an underlying dark /ɫ / will go to a light [l] before the vowels [i, e].

There are several logical possibilities for how to formally represent the above lateral fronting rule.
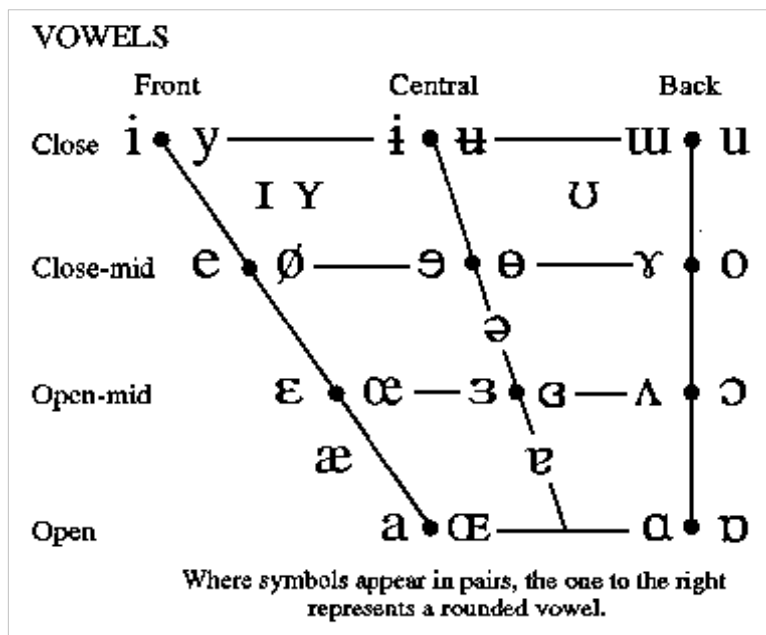

Fig 4. IPA Vowel Chart

As can be seen from the vowel chart above, the segments [i] and [e] are the only [-back] vowels in the Georgian system of vowels [i, e, a, o, u][1], so we can easily posit the following formulations of the rule:

Rule A: /ɫ / → [l] before [-back]

Rule A states that any segment bearing the feature [-back] will cause the underlying dark l to be realized (pronounced) as a light l. Another possible formulation of the rule is the more highly specified one:

Rule B: /ɫ / → [l] before [-back, -round, -low, +tense]

Rule B was arrived at by intersecting the feature sets of the individual triggering segments [i] and [e], thus excluding any features that they do not share, and including only the features that they have in common. (In this case, [i] bears the feature [+high], while [e] bears the feature [-high]. Since they cancel each other out, the intersection of the features sets of [i] and [e] does not include specifications for height.) The representation of Rule B is based on the assumption that rules are arrived at by native speakers based on tokens of positive evidence. During the course of language acquisition, upon hearing [l] when followed by [i], (say in the word *aɫ ubali)*, then hearing [l] followed by [e], (as in the word *lekvi),* and hearing [ɫ] elsewhere, an infant would posit (subconsciously, of course) two sub-rules:

---

[1] The vowel [a] is analyzed as a [+back] vowel.

Sub-rule 1: /ɫ/ → [l] before $\begin{bmatrix} +high \\ -back \\ -round \\ -low \\ +tense \end{bmatrix}$	Sub-rule 2: /ɫ/ → [l] before $\begin{bmatrix} -high \\ -back \\ -round \\ -low \\ +tense \end{bmatrix}$

Sub-rule 1 states that dark l gets fronted before [i], and Sub-rule 2 states that [e] triggers lateral fronting.   The only feature where [i] and [e] disagree is [+/-high], so this feature is eliminated from the representation of the triggering environment. By merging the two sub-rules, the final rule would be represented as:

$$\text{Rule B: /ɫ/} \rightarrow \text{[l] before } \begin{bmatrix} -back \\ -round \\ -low \\ +tense \end{bmatrix}$$

While the representation of Rule B denotes a natural class of segments (an intersection of their feature sets that is not consistent with any other segment in Georgian), Rule A was simply arrived at by an attempt to represent the triggering environment in the most general, economical way possible (by choosing the least number of features that both [i] and [e] have in common, that no other segments of Georgian share).

Rule A and Rule B are extensionally equivalent in Georgian, and since the representations of both Rule A and Rule B subsume the triggering segments [i] and [e], language internal evidence will not help us decide which rule is a better choice; that is, which rule formulation mirrors the way the rule is actually represented in the phonological component.   Bearing in mind that the ultimate goal of phonological analysis is inquiry into

69

the nature of the phonological component, as phonologists, our aim rests in figuring out the actual way that phonological rules are represented in the minds of speakers. As Hale & Reiss point out in *The Phonological Enterprise*:

> "cognitive scientists, phonologists in particular, should set as an ultimate goal finding a solution to the first of the following questions (which is the harder and more interesting one), and they should not be satisfied with merely answering the second.
>
>   • What knowledge state underlies Baby Z's output such that he says [kʰæt]?
>
>   • What is the set of possible knowledge states that could lead to Baby Z saying [kʰæt]?
>
> The answer to the first question correctly entails a concern with I-language, language conceived of as knowledge, a matter of "individual psychology" (Chomsky 1986)." (Hale & Reiss 2008:12)

One difference between Rule A and Rule B may be crucial in helping to figure out the correct rule representation; namely, the representation of the triggering environment in Rule A subsumes several (language-external) segments which are not part of the phonemic inventory of Georgian, while the representation of Rule B does not.

Although the conditioning environment of the lateral fronting rule can be specified using only the feature [-back] to denote the triggering segments [i] and [e] (the only [-back] vowels in the language), essentially Rule A indicates that any segment carrying the feature [-back] will trigger dark laterals to be fronted in Georgian. As such, Rule A predicts that even language-external segments such as [ɪ, æ, y], or any other segment carrying the feature [-

70

back] will cause dark laterals to be realized as light laterals. (The question of whether rule application to language-external segments necessarily implies *over-generalization* is discussed in Section 2). Essentially Rule A predicts that dark laterals preceding any segment carrying the [-back] feature will be realized as light laterals by native Georgian speakers. (Section 3 offers experimental evidence that opposes this prediction.)

Rule B, on the other hand, specifies only the segments [i, e] as possible triggers of lateral fronting in Georgian. The representation of Rule B is maximally specified and denotes a natural class of vowels in Georgian. Its representation is the intersection of the individual feature sets of [i] and [e], a set that is not consistent with any other vowels in Georgian. By using more features to describe the triggering environment (and thus restricting it further), Rule B includes only [i] and [e] as triggers of lateral fronting.

It can be seen that two extensionally equivalent rules for Georgian lateral fronting, Rule A and Rule B, have different scopes of application, dependent on the degree of specificity with which the rules are represented. Rule A represents the triggering environment using just the feature [-back], thus applying in the environment preceding any segment carrying this feature (including ones not part of the Georgian phonemic inventory); Rule B specifies the triggering environment as [-back, -round, -low, +tense], all the features that [i] and [e] have in common. Rule B thus makes no prediction regarding the behavior of laterals before language-external segments, since the representation of its triggering environment does not subsume any segments besides [i] and [e].

The representation of a rule crucially defines the domain of its application. A question arises out of this observation: 1) How do we determine which rule is the correct representation? After all, Rule A and Rule B make very different predictions. Rule A

71

indicates that any segment with the feature [-back] will trigger lateral fronting, thus including language-external segments as possible triggers, while Rule B requires three additional features [-round, -low, +tense] in order to front dark laterals. Appealing to empirical evidence, and theoretical considerations regarding the nature of phonological representations can help lead us in the right direction.

4.2 EVIDENCE FOR REJECTING RULE A

Since inquiry into the nature of human phonological knowledge is the ultimate concern of generative phonology, figuring out the 'correct' rule representation is in the interest of arriving at an understanding of the nature of the phonological component.

Specifying the triggering environment as the set of [-back] segments, Rule A predicts that even language-external segments carrying this feature will trigger application of the rule. To test the accuracy of this prediction, I worked with Charles Reiss (co-author of *The Phonological Enterprise*) to design the Artificial Vowel Experiment. The experiment tested native Georgian speakers on their production of laterals preceding [æ], a [-back] segment that is outside of the phonemic inventory of Georgian. A statistically significant majority of non-word tokens containing lateral-[æ] sequences were produced with a dark lateral by a native Georgian speaker, results opposite to the prediction of Rule A. This suggests that Rule A is not the correct characterization of the triggering environment, and that the feature [-back] is not the only trigger of lateral fronting in Georgian.

Evidence concerning infants' initial sensitivity to all phonemic contrasts (Werker & Tees 1984) suggests that infants are endowed with a full representational apparatus at birth, required to parse phonemic distinctions in whichever language the child may be exposed to.

72

For instance, a Japanese infant can differentiate [r] and [l], a phonemic contrast which does not exist in Japanese. An infant in an English-speaking environment requires the ability to distinguish the segments [i] and [ɪ], contrasting only by the feature [+/- tense]. Positing maximally specific phonological representations would enable infants to parse the incoming PLD [2] and store all possible phonemic distinctions during early stages of language acquisition. This approach differs from the traditional model of phonological acquisition (e.g., Rice & Avery), in which initial representations are highly underspecified. Following this line of argument, if phonemes are represented using the maximum number of distinctive features, rules would also be represented with maximal specificity, since their representation is derived by intersecting the features sets of the individual triggering segments.

Therefore, on the basis of empirical evidence (Artificial Vowel Experiment) as well as evidence from acquisition regarding infants' initial sensitivity to all phonemic contrasts, it does not seem plausible that Georgian speakers store Rule A as the mental representation of the lateral fronting rule.

4.3 OVER-GENERALIZATION

Rule A defines the triggering environment as [-back], and predicts that language-external [-back] segments will also trigger lateral fronting. This means that segments such as [æ], which a Georgian speaker would have never heard of during the course of language acquisition, are included as possible triggers of lateral fronting. Intuitively, it may seem that predictions regarding the behavior of laterals in the environment of language-external segments are outside of the scope of the rule, and are thus over-generalizations.

---

[2] Primary Linguistic Data

Based on the results of the Artificial Vowel Experiment, Rule A does in fact over-generalize by making an incorrect prediction; yet, does rule application to language-external segments necessarily imply over-generalization? The answer is a resounding "No". Hale & Reiss pose the following question:

> "Are we to conclude from this that the rules of a grammar are never stated in a form which entails greater generality than that provided by a list of positive tokens? The answer, due to the nature of our algorithm, is clearly "no". Just how far beyond the listed data a given rule would go will depend on what representations are subsumed by the acquired representation of the rule." (Hale & Reiss 2008:99)

To illustrate, let's take the case of English voicing assimilation. The voicing assimilation rule devoices the English plural marker [z] after voiceless obstruents. It is informally stated as:

English Voicing Assimilation Rule: /z/→ [s] after [p, t, k, θ, f]

The following words illustrate devoicing of the English plural marker [z]:

[dogz] ~ [doks] 'dogs' 'docks'	[labz] ~ [laps] 'labs' 'laps'	[wolvz] ~ [rufs] 'wolves' 'roofs'
[bændz] ~ [bæts] 'bands' 'bats'	[klouðz] ~ [buθs] 'clothes' 'booths'	

When asked to make the plural of *"Bach"* [bax], English speakers produce the form [baxs], thus applying the voicing assimilation rule to the voiceless velar fricative [x], which

74

is not part of the English phonemic inventory. During the course of acquisition, an English speaker would have never got positive evidence of [x] triggering devoicing, just as a Georgian speaker would have never heard tokens of positive evidence of lateral fronting occurring before [æ].

The reason that the application of Rule A to language-external [æ] is overgeneralization, while the application of the English voicing assimilation rule to language-external [x] is not, lies in the way that the representations of the conditioning environments of these rules were derived. Just as Rule B is arrived at by intersecting the feature sets of the triggering segments [i] and [e], in the same way, the voicing assimilation rule is represented by intersecting the feature sets of each individual segment that triggers devoicing of the English plural marker [z].

Arriving at the voicing assimilation rule by intersecting the feature sets of [p, t, k, θ, f] will give us [-son, -voice] as the triggering environment for devoicing of English plural marker [z]. This triggering environment is consistent with the features of language-external [x], meaning that the voicing assimilation rule predicts that [z] will devoice following [x], which is exactly what happens in the word *Bachs* [baxs]. Thus the application of the English voicing assimilation rule to the language-external segment [x] is not over-generalization, since devoicing after [x] (a segment carrying the features [-son, -voice]) is actually predicted by the English voicing assimilation rule.

4.3.1 CHOOSING THE CORRECT RULE

Rule A incorrectly predicts (based on the results of the Artificial Vowel Experiment) that segments bearing the feature [-back] will trigger lateral fronting, thus over-

generalizing the scope of its application. Rule A was not arrived at by an algorithm, but by considerations of elegance and economy in the orthographic representation of rules. In university phonology classes, we are normally taught to posit the most general formulation for rules, with the triggering environment of the rule represented as the lowest common denominator of features – the least number of features shared by the set of triggering segments. On the other hand, Rule B was arrived at by a principled algorithm. As an intersection of the feature sets of the individual triggering segments [i] and [e], it represents a natural class of segments in Georgian.

Just as the application of the voicing assimilation rule after [x] is expected, since [x] is part of the natural class of segments represented by the triggering environment [-son, -voice], rules whose triggering environment denotes a natural class may or may not potentially apply to language-external segments (if those segments are subsumed by the representation of the rule).

Hale & Reiss describe the rule representation algorithm for the lateral fronting rule in *The Phonological Enterprise*:

"No empirical language internal evidence can tell us… We have to rely on a principled learning algorithm. Where does the rule come from? It's generated on the basis of positive evidence, on the basis of tokens of the rule's application. The learner comes up with sub-rules, then generalizes across the sub-rules by finding the representation which subsumes the two cases – the intersections of the triggering environment. The only generalization (loss of specificity) driven by the data is the pruning of the features where the two sub-rules disagree. This is accomplished by taking the intersection of the two rules. The representation of

76

the environment thus denotes a natural class that includes both [i] and [e], but not [æ]. From an acquisition viewpoint, there is no reason to believe that the child does generalize beyond the data (by choosing a less specified statement of the rule)." (Hale & Reiss 2008:96)

The lateral fronting rule makes entirely different predictions depending on the way it is represented. By specifying the feature [-back] as the only trigger of lateral fronting, Rule A predicts that any segment bearing this feature will cause dark laterals to surface as light laterals, and thus extends the scope of its application to several [-back] segments outside of the Georgian phonemic inventory. The highly specified representation of Rule B, on the other hand, subsumes only the segments [i] and [e], and does not extend to any language-external segments. As discussed above, a rule is considered to over-generalize only if its representation was not arrived at by intersecting the feature sets of the individual triggering phonemes (to denote a natural class in the language). This explains why Rule A over-generalizes, while the English voicing assimilation rule simply applies to a natural class of segments. A principled rule representation algorithm not only prevents over-generalization, but possibly mirrors the process of rule representation in the phonological component.

To summarize, the rule representation algorithm involves:

1) listing all positive tokens of the rule (sub-rules).

2) representing the sub-rules using maximum specificity (all relevant features).

3) intersecting the feature sets of the individual triggering segments to arrive at a final feature set, representing the triggering environment as a natural class of segments.

77

With this simple algorithm Rule A can be eliminated as the 'correct' version of the lateral fronting rule, since the representation of its triggering environment was not arrived at by intersecting the individual features sets of the triggering segments. It follows that any rule representation that is not arrived at this way has the danger of over-generalizing by making incorrect predictions, as well as deviating from the way rules representations are computed in the phonological component.

4.3.2 **CHALLENGES IN EXPERIMENTAL WORK**

Various challenges arise when relying on experimental work such as the Artificial Vowel Experiment. In order to test the predictive power of Rule A, lateral+[æ] sequences were elicited from native Georgian speakers, to see whether, in fact, any [-back] segment, including one that is language-external, would trigger the rule to apply. The Georgian phoneme inventory does not include [æ], which raises several concerns, outlined below:

1) If [æ] is not part of the phoneme inventory of Georgian, how do Georgian speakers parse this segment?

2) When presented with lateral + X sequences, where X stands for any language-external segment whose representation is subsumed by the representation of the triggering environment of the rule, how do we determine whether X is parsed as the language-external phoneme, or merged with a phoneme that is part of the segment inventory of the language in question (i.e., [æ] being parsed as [a]) ?

To address the first question, eliciting same/different judgments from native Georgian speakers presented with [a]-[æ] pairs would help determine whether preference for dark lateral+[æ] sequences over light lateral+[æ] sequences is partly due to the fact that Georgian

78

speakers have merged the [a] and [æ] space in their vowel representational space, and are thus simply applying the rule to what they think is the segment [a]. If native Georgian speakers are able to differentiate [a] from [æ] (with statistically significant accuracy), it would signal that they are in fact parsing the two tokens as distinct segments. Another option would be to elicit production of the two segments under question, and analyze whether the two segments are part of the same phonemic category. Exploring the issue of interference in bilingual speakers may shed light on whether distinct phonemes are parsed as one and the same segment by being merged into the 'phonemic inventory space' of the existing phoneme of the given language.

Infants are endowed with discriminative ability for all possible phonemic contrasts, and during the course of acquisition they learn to ignore contrasts that are irrelevant for their native language (Hale & Reiss 2003). Consequently, is it unrealistic to assume that a native Georgian speaker could correctly parse [æ] as [-back, -round, +low, +tense] ? Testing whether Georgian speakers parse [æ] as [a] would clarify this issue.

4.4   WORD ORDER AND RULE APPLICATION

Preliminary tests with a native Georgian speaker show that the lateral fronting rule only applies on lateral segments inside the word. If the lateral is followed by one of the triggering segments [i,e], but the triggering segment is located across the word boundary, the lateral fronting rule no longer applies. For instance, there is a dark ɫ in "tomorrow" even though it is followed by [i]:

  4) [xvaɫ ic'qeba sk'ola]
     tomorrow starts school
     "school starts tomorrow"

79

In 5) we see a light lateral, as predicted when followed by [i]:

5) [xvalinde**li** gazeti miqide]
   tomorrow's newspaper buy-me
   "buy me tomorrow's newspaper"

Although I have yet to carry out a formal study of this phenomenon, it seems to be the case this phonological rule does not apply across the word boundary, showing a close interaction between syntactic word order and the phonological module.

4.5   CONCLUDING REMARKS

The Georgian lateral fronting rule makes entirely different predictions depending on the way it is represented.   Formulated as Rule A, it predicts that language-external segments carrying the feature [-back] will trigger lateral fronting.   Formulated as Rule B, it makes no predictions about the behavior of laterals in the environment of language-external segments, since none are subsumed by the representation of its triggering environment.   A principled rule representation algorithm prevents over-generalization, and mirrors the process of rule representation in the phonological component.

Although experimental work may serve to verify the predictions of a given rule, there are various concerns regarding the validity of eliciting analyses for segments that are outside of the phoneme inventory of the language in question.

CHAPTER 5

CONCLUSION

This thesis has investigated the interaction of syntax (word order) and phonology (intonation, and rule representation) in Georgian. Chapter 1 included a summary and critical analysis of two studies of the interaction of word order and intonation in Georgian, "Word order and intonation in Georgian" (Skopeteas et al 2009), and "Intonational Phonology of Georgian" (Jun et al 2007). The findings in these studies were then elaborated upon in Chapter 2 with the Swans Story experiment, an analysis of freely-generated speech from a Georgian native speaker. The Swans Story experiment confirmed some of the findings of the previous studies, adding further observations on the differences between experimentally constructed and freely-generated speech. Finally, the way intonation interacts with word order will need to be explored further, as the observations offered from the Swans Study are preliminary.

To explain the lack of one to one correspondence between case marking and grammatical function (eg. the subject of a sentence may be marked with either the nominative, ergative, or dative cases, as evident in Sentences 2, 27, 29, and 32 in the story "Mzia and the Swans"), Chapter 3 provided an overview of the case marking system of Georgian. It included a description of how case and tense (or "screeves") interact in Georgian to give rise to a highly complex, irregular system of case assignment.

Chapter 4 presented the case of lateral fronting – a phonological phenomenon in Georgian whereby underlying dark laterals (ɬ) preceeding the segments [i, e] are 'fronted'

and pronounced as light (palatalized) laterals. The interesting thing is that the lateral fronting rule seems to apply only if the triggering segments [i, e] are in the same word as the lateral. The rule does not apply across the word boundary, demonstrating that phonology is sensitive to syntactic constituency and word units.

Georgian is a language with complex systems of verbal morphology and case marking, and with little research to date on the interaction of intonation and word order in the language. This thesis aims to contribute to and inspire future exploration into the intricacies of the interaction of phonology and syntax in Georgian.

BIBLIOGRAPHY

Aronson, Howard. 1990. *Georgian: A Reading Grammar.* Slavica Publishers, Inc.

Amiridze, Nino. 2006. *Reflexivization Strategies in Georgian.* Netherlands: LOT

Butskhrikidze, Marika. 2002. *The Consonant Phonotactics of Georgian.* Netherlands: LOT

Chitoran, Ioana. 1998. "Georgian Harmonic Clusters: Phonetic Cues to Phonological Representation". *Phonology* 15:2.121-141.

Hale, Mark & Reiss, Charles. 2008. *The Phonological Enterprise.* Oxford: Oxford University Press.

Harris, Alice C. 1982. "Georgian and the Unaccusative Hypothesis". *Language* 58:290-306.

Harris, Alice C. 1981. *Georgian Syntax: A Study in Relational Grammar.* Cambridge University Press, Cambridge.

Hewitt, George. 2005. *Georgian: A Learner's Grammar.* Routledge.

Jun, Sun-Ah, Vicenik, Chad & Lofstedt, Ingvar. 2007. "Intonational Phonology of Georgian". *UCLA Working Papers in Phonetics* 106:41-57.

Robins, R.H. & Waterson, Natalie. 1952. "Notes on the Phonetics of the Georgian Word". *Bulletin of the School of Oriental and African Studies* 14:1.55-72.

Skopeteas, Stavros, Fery, Caroline & Asatiani, Rusudan. 2009. "Word order and intonation in Georgian". *Lingua* 119:102-127.

Vendler, Zeno. 1957. "Verbs and Times". *The Philosophical Review* 66:2.143-160.

APPENDIX A

GEORGIAN STORY − THE SWANS STORY

IN GEORGIAN SCRIPT

b.j lf fhf b.j hf, b.j thsb cjatkb cflfw w[jdhj,lf thsb gfnfhf ujuj vpbf sfdbc ,f,efcsfy thsfl.   .jdtk lqt, cfepvbc itvltu, vpbf ufbmwtjlf vlbyfhbc yfgbhpt .dfdbkt,bc cfrhtafl.

ths vidtybth vpbfy lqtc, hjujhw .jdtksdbc, vpbf v[bfhekfl vbh,jlf vlbyfhbc yfgbhbcfrty, .dfdbkt,bc cfrhtafl. "hf kfvfpb lqtf!" ufbabmhf vpbfv. "fk,fs ekfvfptc sfbuekc ufdfrtst, vbyljhib vjrhtabkb .dfdbkt,bs."

hjujhjw rb vbef[kjdlf yfgbhc, lfbyf[f cfjwfhb hfvt! jhb stshb utlb o.kblfy fvjcekfy, eqbvbfy vpbfc lf təf[bfy "vpbf! vjlb udtsfvfit!" ufjwt,ekvf vpbfv lffulj sfdbcb rfkfsf lf cohfafl vbbh,byf utlt,sfy. vstkb lbkf uffnfhtc sfvfiib −wtrdfdlty, bwbyjlyty, lf o.fkib z.evgfkfj,lyty.   cflbkbc lhjc vpbf lf,heylf cf[kib lf ,f,efc .dtkfathb efv,j.

"hjujh lfdb]thj hjv utlt,vf utkfgfhfrtc idbkj," smdf ufrdbhdt,ekvf ,f,efv.

"vtw ufjwt,ekb dfh ,f,e!" lftsfy[vf vpbf.   "vjlb f,f [dfk ofvjv.tdb lf ityb sdfkbs yf[t," itsfdfpf vpbfv.

83

vtjht lqtc vpbfv vjfvpflf rfkfsf. xffo.j hfvjltybvt yfzthb gehb, vjrblf ,f,efc [tkb lf thsfl ufeluyty upfcvlbyfhbc yfgbhbcfrty. vbef[kjdlyty yfgbhc, vfuhfv fhw thsb utlb fh xfylf.

"fk,fs fv ufufybf cbw[tc dth bnfyty idbkj," smdf ,f,efv. "vjlb cfqfvjc lfd,heylts, vpbc xfcdkbc vtht."

fct ufdblf hfvjltybvt lqt. vpbf lf ,f,ef ewlblyty vpbc xfcdkfc lf vtht vblbjlyty yfgbhbcfrty. cfvoe[fhjl, fhw ths[tk utlt,b fh ufvjxtybkfy. "f,f vt lqtc cf[kib lfdhxt,b. ,tdhb cfmvt vfmdc vjcfudfht,tkb," smdf ,f,efv. vjo.tybkb vpbf ,f,efc xft[enf lf smdf: "cfyfv rbltd ths[tk utlt,c fh dyf[fd, dth vjdbcdtyt,."

vtjht lqtc, vpt hjujhw rb vsbc erfy vbbvfkf, vpbf cohfafl ufbmwf yfgbhbcfrty. hf cb[fhekb buhɗyj hjwf lfbyf[f jhbdt utlb o.fksfy   sfvfij,lf!

"vjlb udtsfvfit, vpbf!"
vpbfv rbs[f: "cfl b.fdbs fvltyb [fyb? vt lf ,f,e .jdtklqt utkjlt,jlbs!"

"fh bwjlb hjv xdty vfhnj ,fdidt,c dtxdtyt,bs [jkvt? hjwf ,f,efcsfy thsfl vj[dfk xdty lfdbvfkt,bs," ufbwbytc utlt,vf.

rb o.bylf vpbfc hjv vbcb ,f,ef dthfcjltc dth yf[fdlf utlt,c, vfuhfv bct e[hjlf vfssfy .jayf, hjv .jdtk cfqfvjc, hjujhw rb lfbyf[fdlf hjv vpt vsbc erfy xfdblf, bv oesib ufbmwtjlf yfgbhbcfrty utlt,sfy cfsfvfijl.

"hf ,tlybthb dfh!" babmhf vpbfv, "hjv fv vidtybth utlt,c xtvsfy eylfs sfvfib!"
cfqfvjc rb vpbf cf[kib ,heylt,jlf uf[fht,ekb, lf e.dt,jlf ,f,efc lqbc sfduflfcfdfkt,c.

84

APPENDIX B

"MZIA AND THE SWANS" - TRANSLATION INTO ENGLISH

Once upon a time, there was a village where a little girl named Mzia lived with her grandfather. Every day after breakfast, Mzia would run to the riverbank to pick flowers. One wonderful sunny day, Mzia was cheerfully running towards the riverbank, as usual, to

gather flowers. "What a beautiful day it is!" thought Mzia. "I'll be able to make the most beautiful bouquet with flowers picked from the meadow!"

As soon as Mzia approached the riverbank, she saw the most astounding thing! Two white swans had come out of the water, were smiling at Mzia, and calling out: "Mzia! Come play with us!" Surprised at what she saw, Mzia dropped her basket, and quickly ran towards the swans. They spent the entire morning playing – dancing, laughing, and frolicking in the water. At dinnertime, Mzia returned home and told her grandpa everything that had happened. "How can I believe that the swans were playing with you, dear?" Grandpa asked in surprise. "I'm amazed too, Grandpa!" Mzia agreed. "Why don't you come with me tomorrow and you can see it with your own eyes," suggested Mzia.

The next day, Mzia prepared the basket. She added a few slices of bread, and hand in hand with her Grandpa, set out on the road towards the riverbank. As they nearead the river, they saw that no swans were in sight.
"They probably can't stand this scalding heat, dear," Grandpa said. "Let's return in the evening, after the sun sets."

A few days went by. Mzia and Grandpa would wait for the sun to set, and would head out towards the river afterwards. Unfortunately, the swans never appeared.
"Well, I will stay home today. I have lots of work to take care of," Grandpa said. Mzia felt sad, and embraced her Grandpa. "Until I see the swans once more, I won't be able to rest."

The following day, as soon as the sun hid behind the mountain, Mzia quickly ran towards the river. What happiness she felt when she saw both swans playing by the water!
"Come play with us, Mzia!"
Mzia asked: "Where were you all this time? Grandpa and I waited for you every day."
"Didn't you know that we only reveal ourselves to children? When you come with Grandpa, we will hide," laughed the swans.

Although it made Mzia sad that Grandpa would never be able to see the swans, she was so happy to spend time with them, that every evening, as soon as she saw that the sun had set behind the mountain, she would immediately run towards the river to play with the swans. "I'm so lucky," thought Mzia, "that these wonderful swans wish to play with me!" In the evenings, Mzia would return home, and cheerfully tell her Grandpa about the adventures of the day.

GEORGIAN STORY – THE SWANS STORY

TRANSLITERATION

SENTENCE **1:**
b.j lf fhf b.j hf, b.j thsb cjatkb cflfw w[jdhj,lf thsb gfnfhf ujuj
iqo da ara iqo ra, iqo erti sopeli sadac cxovrobda erti patara gogo-Ø
was and not was what, was one village-NOM   where lived one little girl-NOM

vpbf sfdbc ,f,efcsfy thsfl.
Mzia-Ø tavis babua-s-tan ertat
Mzia-NOM her-GEN grandpa-DAT-with together.

SENTENCE 2:

.jdtk lqt, cfepvbc itvltu, vpbf ufbmwtjlf vlbyfhbc yfgbhpt
qovel dghe, sauzmis shemdeg, mzia-Ø gaikceoda mdinar-is napir-ze
Every day, breakfast after, mzia-NOM would-run river-GEN bank-on

.dfdbkt,bc cfrhtafl.
qvavileb-is sakrepat
flowers-GEN gathering

SENTENCE 3:

ths vidtybth vpbfy lqtc, hjujhw .jdtksdbc, vpbf v[bfhekfl
ert mshvenier mzian dghe-s, rogorc qoveltvis, mzia-Ø mxiarulad
one wonderful sunny day-DAT, as always, Mzia-NOM cheerfully

vbh,jlf vlbyfhbc yfgbhbcrty, .dfdbkt,bc cfrhtafl.
mirboda mdinar-is napirisken, qvavileb-is sakrepat
was-running river-GEN bank-towards, flowers-GEN gathering.

SENTENCE 4:

"hf kfvfpb lqtf!" ufbabmhf vpbfv.
 ra lamazi dghe-a gaipikra mzia-m
"what beautiful day-NOM-it-is!" thought Mzia-ERG.

SENTENCE 5:

"fk,fs ekfvfptc sfbuekc ufdfrtst, vbyljhib vjrhtabkb .dfdbkt,bs."
 albat ulamazes taigul-s gavaketep mindor-shi mokrepili qvavil-eb-it
"probably most-beautiful bouquet-DAT will-make meadow-in gathered flower-plural-with."

88

SENTENCE 6:

hjujhjw rb vbef[kjdlf yfgbhc, lfbyf[f cfjwfhb hfvt!

rogorc	ki	miuaxlowda	napir-s,	dainaxa	saocari	rame-NOM
as	(ki)	neared	bank-DAT,	saw	wonderful	thing!

SENTENCE 7:

jhb stshb utlb o.kblfy fvjcekfy, eqbvbfy vpbfc lf tɗf[bfy "vpbf!

ori	tetri	gedi	ts'qlidan	amosulan,	ughimian	mzia-s	da	edzaxian	mzia
Two	white	swan-NOM	out-of-water	came-out,	smiling-at-her	Mzia-DAT	and	calling	"Mzia!"

vjlb udtsfvfit!"

modi	gvetamashe
come	play-with-us!"

SENTENCE 8:

ufjwt,ekvf vpbfv lffulj sfdbcb rfkfsb lf cohfafl vbbh,byf utlt,sfy.

gaocebulma	mzia-m	daagdo	tavisi	kalata	da	sts'rapat	mi-irbina	ged-eb-tan
surprised	Mzia-ERG	dropped	her	basket-NOM	and	quickly	towards-ran	swan-pl.-with

SENTENCE 9:

vstkb lbkf uffnfhtc sfvfiib – wtrdfdlty, bwbyjlyty, lfo.fkib

mteli	dila-Ø	gaatares	tamashshi –	cekvavden,	icinodnen	da	ts'qalshi
Entire	morning-NOM	spent	playing –	3ps.pl-dancing-past	3ps.pl-laughing-past,	and	water-

z.evgfkfj,lyty.

ch'qumpalaobden
in splashing.

SENTENCE 10:

cflbkbc lhjc vpbf lf,heylf cf[kib lf ,f,efc .dtkfathb efv,j.

sadilis	dros	mzia-Ø	dabrunda	saxl-shi	da	babua-s	qvelaper-i	u-amb-o

89

Dinner-GEN time Mzia-NOM returned home-in and grandpa-DAT everything-NOM 3ps.sg.-told-3ps.sg.SUBJ

SENTENCE 11:

"ħjujh lfdb]thj hjv utlt,vf utkfgfhfrtc idbkj," smdf ufrdbhdt,ekvf

rogor davijero rom ged-eb-ma ge-laparakes shvilo tkva gakwirvebulma

"How 1st ps.believe that swan-pl.-ERG 2ps.sg.OBJ-talk-.2ps pl.SUBJ child," said surprised

,f,efv.
Babua-m
Grandpa-ERG

SENTENCE 12:

"vtw ufjwt,ekb dfh ,f,e!" lftsfy[vf vpbf.
mec gaocebuli var babu daetanxma mzia-Ø
"me-too wonderstruck am grandpa!" agreed Mzia-NOM

SENTENCE 13:

"vjlb f,f [dfk ofvjv.tdb lf ityb sdfkbs yf[t," itsfdfpf vpbfv.
modi aba xval c'amomqevi da sheni tval-it naxe shetavaza mzia-m
"come so tomorrow come-with-me and your eyes-INST see," suggested Mzia-ERG.

SENTENCE 14:

vtjht lqtc vpbfv vjfvpflf rfkfsf.
meore dghes mzia-m moamzada kalata-Ø
second day Mzia-ERG prepared basket-NOM.

SENTENCE 15:

xffo.j hfvjltybvt yfzthb gehb, vjrblf ,f,efc [tkb lf thsfl ufeluyty
cha-ats'qo ramodenime nach'eri puri-Ø, mok'ida babua-s xeli da ertat gaudgen
in-put-3ps.sg.SUBJ few slices bread-NOM, hold-3ps.sg. grandpa-DAT hand and together set-out

upfc vlbyfhbc yfgbhbcfrty.
gzas mdinar-is napirirsaken

road river-GEN   bank-towards.

SENTENCE 16:

vbef[kjdlyty yfgbhc, vfuhfv fhw thsb utlb fh xfylf.
miuaxlovd-en   napir-s, magram arc erti   gedi-Ø   ar chanda
neared-3ps.pl.   bank-DAT, but neither one swan-NOM   not seen.

SENTENCE 17:

"fk,fs fv ufufybf cbw[tc dth bnfyty idbkj," smdf ,f,efv.
albat   am gagania sicxe-s ver it'an-en shvilo   tkva babua-m
"probably this scolding heat-DAT can't stand-3ps.pl. child," said grandpa-ERG.

SENTENCE 18:

"vjlb cfqfvjc lfd,heylts, vpbc xfcdkbc vtht."
modi saghamos da-v-brund-et   mzis chasvlis mere
"come in-the-evening PVB-2ps.pl.SUBJ-return-2ps.pl.SUBJ, sun-GEN set after."

SENTENCE 19:

fct ufdblf hfvjltybvt lqt.
ase gavida ramodenime dghe-Ø
like-this went-by several day-NOM.

SENTENCE 20:

vpbf lf ,f,ef ewlblyty vpbc xfcdkfc lf vtht vblbjlyty yfgbhbcfrty.
mzia-Ø   da   babua-Ø   uctiden mzis   chasvlas da mere midiodnen napiris-ken
Mzia-NOM and grandpa-NOM waited sun-GEN set   and   after would-go bank-to.

SENTENCE 21:

91

cfvoe[fhjl, fhw ths[tk utlt,b fh ufvjxtybkfy.
samc'uxarot   arc   ertsel   ged-eb-i   ar gamochenilan
Unfortunately, neither time swan-pl-NOM   not   appeared.

SENTENCE 22:

"f,f vt lqtc cf[kib lfdhxt,b.
aba me dghes   saxl-shi   davrchebi
"so I   today home-in   will-stay.

SENTENCE 23:

,tdhb cfmvt vfmdc vjcfudfht,tkb," smdf ,f,efv.
bevri sakme-Ø makvs mosagvarebeli   tkva   babua-m
Lots-of work-NOM i-have to-take-care-of," said   grandpa-ERG.

SENTENCE 24:

vjo.tybkb vpbf ,f,efc xft[enf lf smdf:
moc'qenili   mzia-Ø   babua-s chaexuta da tkva
Saddened   Mzia-NOM   grandpa-DAT hugged   and said:

"cfyfv rbltd ths[tk utlt,c fh dyf[fd, dth vjdbcdtyt,."
sanam k'idev ertxel   gedeb-s   ar vnaxav ver movisveneb
"until again once   swans-DAT not see, can't rest."

SENTENCE 25:

vtjht lqtc, vpt hjujhw rb vsbc erfy vbbvfkf, vpbf
meore   dghes   mze-Ø   rogorc ki   mt-is   ukan miimala mzia-Ø
second   day,   sun-NOM   as-soon-as mountain-GEN behind hid,   Mzia-NOM

cohfafl ufbmwf yfgbhbcfrty.
sc'rapat gaikca napiris-ken
quickly   ran   bank-to.

SENTENCE 26:

hf cb[fhekb buhɔyj hjwf lfbyf[f jhbdt utlb o.fksfy sfvfij,lf!
92

ra   sixaruli   igdzno   roca   dainaxa orive gedi-Ø   c'qal-tan   tamashobda
What happiness 3ps.sg-felt when 3ps.sg-saw both swan-NOM water-beside playing!

SENTENCE 27:

"vjlb udtsfvfit, vpbf!"
modi gwetamashe mzia
"come play-with-us, Mzia!"

SENTENCE 28:

vpbfv rbs[f:
mzia-m   k'itxa
Mzia-ERG asked:

SENTENCE 29:

"cfl b.fdbs fvltyb [fyb?
sad   iqav-it   amdeni xani
where were-2ps.pl.SUBJ so-much time?

SENTENCE 30:

vt lf ,f,e .jdtklqt utkjlt,jlbs!"
me-Ø da babu-Ø qoveldghe gelodebodit
Me-NOM and grandpa-NOM every-day waited-for-you!"

SENTENCE 31:

"fh bwjlb hjv xdty vfhnj ,fdidt,c dtxdtyt,bs [jkvt?
ar   icodi   rom chven marto   bawshveb-s vechvenebit xolme
not you-know that we only children-DAT show-ourselves sometimes?

SENTENCE 32:

hjwf ,f,efcsfy thsfl vj[dfk xdty lfdbvfkt,bs," ufbwbytc utlt,vf.
roca   babuas-tan ertat   moxval chven davimalebit   gaicines   ged-eb-ma
When grandpa-with together you-come we will-hide,"   laughed   swan-pl.-ERG.

93

SENTENCE 33:

rb o.bylf vpbfc hjv vbcb ,f,ef dthfcjltc dth yf[fdlf utlt,c,
ki c'qinda   mzia-s   rom   misi babua-Ø   verasodes ver naxavda gedeb-s
although hurt Mzia-DAT that   her grandpa-NOM never   can't see   swans-DAT

vfuhfv bct e[fhjlf vfssfy .jayf, hjv .jdtk cfqfvjc, hjujhw rb
magram ise uxaroda   mattan qopna rom qovel saghamo-s rogorc   ki
but   so   happy with-them being, that every evening-DAT, as-soon-as

lfbyf[fdlf hjv vpt vsbc erfy xfdblf, bv oesib ufbmwtjlf
dainaxavda rom mze-Ø   mti-s   ukan chavida im c'utshi gaikceoda
3ps.sg-saw that sun-NOM mountain-GEN behind went-down, that minute would-run

yfgbhbcfrty utlt,sfy cfsfvfijl.
napiris-ken   gedeb-tan   satamashot
bank-towards swans-with to-play.

SENTENCE 34:

"hf ,tlybthb dfh!" babmhf vpbfv, "hjv fv vidtybth utlt,c
 ra   bednieri var ipikra mzia-m   rom am mshvenier gedeb-s
"what happy   am!" thought Mzia-ERG, "that this wonderful swans-DAT

xtvsfy eylfs sfvfib!"
chem-tan undat tamashi
with-me they-want to-play!"

SENTENCE 35:

cfqfvjc rb vpbf cf[kib ,heylt,jlf
saghamos ki mzia-Ø   saxl-shi   brundeboda
in-the-evening Mzia-NOM home-to   would-return

uf[fht,ekb, lf e.dt,jlf ,f,efc lqbc sfduflfcfdfkt,c.
gaxarebuli   da uq'veboda babua-s dgh-is tavgadasavalebs
happy,   and would-tell grandpa-DAT day-GEN adventures.

94

APPENDIX D

"MZIA AND THE SWANS" – TRANSCRIPTION OF RECORDING

iqo da ara iqo ra iqo erti sopeli sadacxovrobda erti p'atara gogo…mzia tavis babuastan ertat. qovel dghe sauzmis shemdeg mzia gaikceoda mdinaris nap'irze qvavilebis…dasak'repat… ert mshvenier mzia mzian dghes rogorc qoveltvis mzia mxiarulat mirboda mdinaris nap'irisk'en qvavilebis dasak'repat. ra lamazi dghea ipikra mziam. albat ulamazes taiguls gavak'etep…mindorshi…mok'repili qvavilebit. rogorc ki miuaxlowda nap'irs dainaxa saocari rame. erti tetri gedi…c'qlidan…ori tetri gedri c'qlidan amosula…ori tetri gedi

c'qlidan amosula da uqhi…ughimian mzias.   tan edzaxian mzia modi gvetamashe. gaocebulma mziam daagdo tavisi k'alata da sc'rapat miirbina gedebtan.

mteli dila gaat'ares tamashi, cek'vavdnen, icinodnen, da c'qalshi ch'qump'alaobden. sadilis dros mzia dabrunda saxlshi da babuas qvelaperi uambo. rogor davijero ro ge…gedebma gelap'arakes shvilo tkva gak'wirwebulma babuam. mec gaocebuli var babu, daetanxma mzia. modi aba xval, c'amomqevi da sheni tvalit naxe, shetavaza mziam.

meore dilas mziam moamzada k'alata, chaac'qo ramodenime nach'eri p'uri, mivida…babuas…mok'ida babuas xeli da ertat gaudgen gzas mdinaris nap'irisak'en. miuaxlovden nap'irs magram arc edi gedi ar chanda…albat am gagania sicxes ver it'anen shvilo tkwa babuam. modi saghamos…dawbrundet…i…saghamos movidet isef…mzis chaswlis dros…

ase gavida ramodenimi dghe. mzia da babio babua uctiden mzis chaswlas…da…shemdeg da shemdeg gaemarteboden mdinaris nap'irisak'en.   arc ertxel gedebi ar gamochenilan…samc'uxarot…aba me dghes saxshi davchebi bevri sakme makws mosagvarebeli shetavaza babuam. moc'qenili mzia babuas chaexut'a…da tkva sanam k'idev ertxel gedebs…ar vnaxav ver movisvenep… meore dges mze… mze rogorc k'i mtis uk'an daimala mzia sc'rapat gaikca mdinaris napirisk'en. ra sixaruli igdzno roca dainaxa orive gedi c'qaltan tamashobDEN.

modi gvetamashe mzia! mziam k'itxa sad iqavit amdeni xani? me da baubua qovel dghe gelodebodit. ar icodi rom chven mart'o bawshvebs vachvenebt tavs? roca babuastan ertat moxval chvenc dawimalebit gai gaicines gedebma….c'qinda c'qinda mzias ro misi babua e babua verasodes ver naxada gedes magra ise uxaroda matan qopna ro qovel saghamos rogorc k'i dainaxavda…mtis uk'an ro mze mtis uk'an…cha chadi chavidoda chadioda m c'utshi im c'utshive gaikceoda napirisk'en gedebtan satamashot. ra bednieri va ipikra mziam ro am shvenier gedebs chemtan undat tamashi. saghamos k'i dabrundeboda mzia saxlshi gaxarebuli da mouq'veboda babuas dghis tavgadasav…ga tavgadasavals…cagada