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The Phonological Structure of the Kashubian Word

by

Paul Stanley Hopkins
B.A., University of Victoria, 1976
M.A., University of Waterloo, 1984
M.A., University of Victoria, 1991

A Dissertation Submitted in Partial Fulfilment of the
Requirements for the Degree of

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in the Department of Linguistics

We accept this dissertation as conforming
to the required standard

Dr. E. Czaykowska-Higgins, Supervisor (Department of Linguistics)

Dr. B.F. Carlson, Departmental Member (Department of Linguistics)

Dr. Th.M. Hess, Departmental Member (Department of Linguistics)

Dr. G. Schaarschmidt, Outside Member (Department of Slavonic Studies)

Dr. Ch.Y. Bethin, External Examiner
(Department of Linguistics, State University of New York at Stony Brook)

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University of Victoria

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Supervisor: Dr. Ewa Czaykowska-Higgins

ABSTRACT

This dissertation examines the word-level phonology of the North-West Slavic language Kashubian spoken in East Pomerania (northern Poland) placing the investigation within the theoretical context of Optimality Theory. The primary goal of the thesis is thus to explore and describe the phonology of this language which has largely escaped the attention of generative phonology, it also aims to provide insight into the possibilities presented and the challenges faced by Optimality Theory in describing the phonological system of this language.

Chapter One gives a general presentation of Kashubian. A definition of Kashubian in terms of its place within the Slavic language family is followed first by a brief history of research into this language, focussing mainly on those linguists who have made the most significant contributions, and then by an overview of the phonology and morphology of Kashubian. This chapter also presents the principles and methodology employed in an Optimality Theory analysis, and previews the main points to be made in the dissertation.

Chapter Two examines the structure and properties of syllable onsets in Kashubian, with focus given to four topics: the appearance of prothetic consonants, the constituency of complex onsets, feature harmony in onset-nucleus interaction, and voicing assimilation. My investigation of the first two topics shows that Kashubian enforces the universal tendency for CV syllables with sonority increasing from edge to nucleus, however it also allows some forms with minimal violation of this preference. Investigation

of the latter two topics shows that while there is a clear preference for featural harmony in Kashubian both within onset clusters and between onset and nucleus, the harmony is directional (right to left) and productively affects only certain features (voice in clusters, labial in the onset-nucleus interface).

Chapter Three examines the structure of syllable codas in Kashubian. Syllable codas are universally less complex than onsets, which manifests itself in Kashubian in a number of ways. First, most dialects disallow any violation of the sonority hierarchy in codas. Second, intervocalic consonants are all syllabified in the onset to the preceding vowel unless this would result in syllabification across a prosodic word boundary, an onset cluster violating the sonority hierarchy, or a very heavy cluster. Third, whereas the appearance of underlying laryngeal and secondary features is enforced in onsets, it is not in Kashubian codas, where they never appear.

Finally, Chapter Four examines the syllable nuclei of Kashubian, focussing on three types of vowel alternation. Vowel raising, an alternation between open and closed vowels, is partially determined morphologically, such that certain verb stems show an open/closed alternation in certain morphological contexts, but it also occurs in a context largely determined phonologically. An examination of various contexts for a regular alternation between $e/\text{ə}$ and zero is seen as evidence for the existence of latent vowels which appear only to avoid the violation of high-ranking constraints of the Kashubian grammar. In contrast to these latent vowels, the brief excremental vowels found in the proximity of what would otherwise be syllabic liquids are held to lack an underlying representation.

Examiners:

Dr. E. Czaykowska-Higgins, Supervisor (Department of Linguistics)

Dr. B.F. Carlson, Departmental Member (Department of Linguistics)

Dr. Th.M. Hess, Departmental Member (Department of Linguistics)

Dr. G. Schaarschmidt, Outside Member (Department of Slavonic Studies)

Dr. Ch.Y. Bethin, External Examiner
(Department of Linguistics, State University of New York at Stony Brook)

TABLE OF CONTENTS

	Page
Abstract	ii
Table of Contents	v
Acknowledgements	viii
Abbreviations	x
Guide to Kashubian Orthography	xi
Index of Constraints	xii
Dedication	xiv
Chapter One: INTRODUCTION	
1.0 Introduction to Kashubian	1
1.1 The Kashubian language: preliminaries	2
1.1.1 A definition of Kashubian	3
1.1.2 History of research – sources of data	6
1.1.2.1 Milestones of research into the Kashubian language	6
1.1.2.2 Sources and form of data used in dissertation	14
1.2 Overview of Kashubian phonology and morphology	16
1.2.1 Phonemic units	16
1.2.2 Suprasegmental units	25
1.2.2.1 Syllable structure	25
1.2.2.2 Foot and Word structure	30
1.2.3 Morphology	32
1.2.3.1 Derivational morphology	32
1.2.3.2 Inflectional morphology	33
Nouns	33
Adjectives	35
Verbs	36
1.3 Optimality Theory	37
1.3.1 General principles of OT	37
1.3.2 Constraints	40
1.3.2.1 Markedness	40
1.3.2.2 Faithfulness	43
1.3.2.3 Alignment	44
1.3.3 OT and the Lexicon	45
1.4 Dissertation Outline	46
1.4.1 Chapter outlines	46
Chapter Two: Structure of the Kashubian Onset	46
Chapter Three: Structure of the Kashubian Coda	48

Chapter Four: Structure of the Kashubian Nucleus	50
Chapter Two: STRUCTURE OF THE KASHUBIAN ONSET	
2.0 Introduction	52
2.1 Zero and Prothetic onsets	53
2.1.1 Onset-less words in Slavic	54
2.1.2 Onset-less words and prothetic onsets in Kashubian	57
2.2 The Constituency of Complex Onsets	64
2.3 Onset - Nucleus Interaction	80
2.3.1 Onset-Nucleus Interaction in OT	81
2.3.2 Allophonic Place Assimilation in Kashubian	82
2.3.2.1 Secondary Labialization	82
2.3.2.2 Velar-Palatal Allophony	88
2.3.3 Palatal Allomorphy in Kashubian	91
2.4 Voicing Assimilation in Complex Onsets	102
2.4.1 Regressive voicing assimilation	103
2.4.2 Progressive devoicing	110
2.5 Chapter summary	114
Chapter Three: STRUCTURE OF THE KASHUBIAN CODA	
3.0 Introduction	116
3.1 Coda constituency	116
3.1.1 Word-final codas	117
3.1.2 Word-medial codas	121
3.2 Final coda simplicity	126
3.2.1 Labial simplification	127
3.2.2 Final devoicing	129
3.3 Chapter summary	132
Chapter Four: STRUCTURE OF THE KASHUBIAN NUCLEUS	
4.0 Introduction	134
4.1 Vowel raising	134
4.2 Vowel-Zero alternations	146
4.2.1 Previous Accounts of Vowel-Zero Alternation	147
4.2.1.1 Yers as [+lax] vowels	147
4.2.1.2 Yers as epenthetic vowels	147
4.2.1.3 Yers as empty positions	149
4.2.1.4 Yers as floating matrices	154
4.2.2 Vowel-Zero Alternation in Kashubian	157
4.2.2.1 Asyllabic roots	158

4.2.2.2	Codas with rising sonority	160
4.2.2.3	Suffixes	162
4.2.2.4	Prepositions	164
4.2.2.5	Prefixes	169
4.2.2.6	Derived imperfective stems	172
4.3	Minor syllables	173
4.4	Chapter summary	174
APPENDIX: The Kashubian Syllable – Experimental Evidence		175
BIBLIOGRAPHY		188

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Those who enabled me to reach fluency in the Polish language, without which the Kashubian language and the culture in which it arose are nigh inaccessible, are deserving of special mention. Particular honour in this respect is due to my wife Maria, who with her daughter Agnieszka let me into her life, thus allowing me to learn what 'Wawel' means to a Pole, and who introduced me to the Kashubian culture. Thanks are also due the many Kashubians who have reached out me and others interested in learning the specific characteristics of their language, in particular Eugeniusz Gołąb(e)k, whose passion for the Kashubian language and culture has borne the literary

fruits which have made no small contribution to the revival of interest in the Kashubian language in recent years.

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Abbreviations

A / Acc	Accusative case	TopC	Topolińska 1967
CS	Common Slavic	Voc	Vocative case
D / Dat	Dative case	1s	first person singular
dim	diminutive form	1p	first person plural
f / fem	feminine gender	2s	second person singular
for	formal	2p	second person plural
fut	future tense	3s	third person singular
G / Gen	Genitive case	3p	third person plural
I / Ins	Instrumental case		
im	imperfective aspect		
imp	imperative mood		
inf	informal		
infin	infinitive		
L / Loc	Locative case		
m / masc	masculine gender		
mp	masculine personal		
N/ Nom	Nominative case		
n / neut	neuter gender		
oth	non-masculine-personal		
pf	perfective aspect		
pl	plural		
ppa	past participle active		
ppp	past participle passive		
pr	present/non-past tense		
pt	past tense		
sg	singular		
Sob	Sobierajski 1964		
SSG	Sonority Sequencing Generalization		

Guide to Kashubian Orthography

column 1 = phonetic realization (IPA)¹
 column 2 = representation used in this dissertation
 column 3 = representation used in the AJK
 column 4 = official Kashubian orthography (as of May 1995)

<u>oral stops</u>				<u>fricatives</u>				<u>affricates</u>			
p	p	p	p	f	f	f	f				
pj	pⁱ	p	pi ²	tʃ	tʃ	tʃ	ti ²				
b	b	b	b	v	v³	v	w				
bj	bⁱ	b	bi ²	vj	vⁱ	v	wi ²				
t	t	t	t	s	s	s	s	ts	c	c	c
d	d	d	d	z	z	z	z	dz	ʒ	ʒ	dz
				ʃ	ʃ	ʃ	sz	tʃ/ʦ	č/č	č/k	cz
				ʒ	ʒ	ʒ	ʒ	ʧ/ʧ	ʒ	g	dʒ
k	k	k	k	χ	x	χ	ch				
g	g	g	g								
<u>nasal stops</u>				<u>liquids</u>				<u>glides</u>			
m	m	m	m	w	ł	ł	ł	j	j	i	j
mj	mⁱ	m	mi ²	l	l	l	l	w	w	—	˘/w ²
n	n	n	n	r	r	r	r				
ɲ	ɲ	ɲ	ni/n ⁵	ʒ	ř	ř	rz				
<u>high (oral) vowels</u>				<u>mid oral vowels</u>				<u>low oral vowels</u>			
i	i	i	i/y ⁿ	e	é	é	é	ø/ɔ	á	á	ô
y/u	u	u	u	ɛ	e	e	e	a	a	a	a
ə	ə	ə	ë	o	ó	ó	ó				
				ɔ	o	o	o	<u>nasal vowels</u>			
								õ	õ	q	ą
								ã	ã	ę	ā

Notes

- 1 = The basic dialectal division of North, Central and South Kashubian is reflected in the fact that the reflexes of pre-front affrication of /k/ and /g/ are [tʃ] and [ʧ] in Central Kashubian, but [tʃ] and [dʒ] in adjacent South and North Kashubian dialects and [kʲ] and [gʲ] in a few coastal villages; the reflexes of Velar Palatalization I are [tʃ] and [ʒ] in all dialects. Cutting across the North-South division is a distinction between conservative Genuine Kashubian A and innovative Genuine Kashubian B (Topolińska 1974:129). In GKA dialects /á, u/ are realized as [ɔ, u], but in GKB dialects as [ø, y].
- 2 = Palatalization of labials is marked by a <i> unless the following vowel is /i/, in which case palatalization is not marked.
- 3 = Both /v/ and /ř/ are fricatives derived from sonorants, but /ř/ is placed with the sonorants because it alternates with /r/; /ř/ has lost its rhotic element only recently and is probably still distinct from /ř/ phonologically, if not phonetically.
- 4 = The presence of a labial glide onset to /o/ and /u/ is marked by a grave accent when a consonant precedes and by <w> word-initially.
- 5 = The prepalatalized nasal is represented as <ni> before a vowel, whereby a following /i/ is not given separate representation, and as <ɲ> before a consonant or word-finally.
- 6 = The vowel /i/ is represented as <y> after <s, z, c, dz, n> and as <i> elsewhere.

INDEX OF CONSTRAINTS

	First defined in #
Correspondence constraints	
DEP	28
DEP(SUBSEG)	PH 111
EXPLICIT REPRESENTATION (EXPREP)	PH 169
IDENT(F)	28
IDENT(LARYNGEAL)	102
IDENTONS(LAR)	103
IDENT(SEC)	PH 130
IDENTONS(SEC)	PH 128
IDENT(VPLACE)	PH 47
MAX	28
MAX(SUBSEG)	74
Max- μ	PH 150
WT-IDENTITY	147
Featural Markedness constraints	
*CORONAL	40
*DORSAL	40
*LABIAL	40
*LAR	102
*PjC	PH 87
*SEC	PH 127
*SEC(COR)	PH 71
*TjC	PH 93
*VS/COR	PH 79
*VS-FRONT	PH 78
* μ /CONSONANT	152
*2SEC	PH 73
LARYNGEAL CONSTRAINT	PH 105
NO LONG VOWELS	148
PROGRESSIVE DEVOICING	PH 110
SONORANT DEFAULT	107
Prosodic Markedness constraints	
*COMPLEX	24
*SO	53
AGREE	104
CV-LINK	45
EXHAUSTIVITY	56
FTBIN	26
NO-CODA	25
NUC	25

OCP[–cont]	53
OCP[+cont]	53
ONSET	25
POSS-MAR(π_{Ons})	25
POSS-ONSET: Russian	56
POSS-NUC(π_{Nuc})	25
RHTYPE=T	26
Sonority Sequencing Generalization (SSG)	55
Alignment constraints	
ALIGN-L	36
ALIGN-R	116
ALIGN-WD-LEFT	30
ALIGN-WD-RIGHT	30
Other phonological constraint	
*STRUC	23
Morphological constraint	
SUBCATPAL	^{PH} 85

^{PH} = constraint proposed and defined by Paul Hopkins

*to my patient father and
my dear mother who could not wait*

mojej kochanej żonie Marysi

ë wszëtczim Kaszëbóm

Chapter 1 An Introduction to Kashubian

1.0 Introduction

The study of the Slavic languages is characterized by a strong tradition of examining dialectal diversity and the historical development of sounds in the Slavic languages. In addition, linguists working on Slavic languages have long been interested in the role of speech sounds as units within the sound system (e.g. the pioneering work of de Courtenay, Kruszewski, Trubetzkoy and Jakobson as discussed in Anderson 1985) as well as in the interaction of phonology with morphology, as represented by such monographs as Halle (1959), Gussmann (1980), Rubach (1984, 1993a) and Szpyra (1989).

These two traditions, however, rarely meet. While descriptions of Slavic dialectology and historical development generally limit their discussion of systemic interaction to an inventory of phonemes, studies of broader phonological principles have generally limited their scope to discussion of the Slavic literary languages and even here, only studies of Russian and Polish phonology have been published in any number for an international (non-Slavic) readership.

This study aims to partially redress this situation by presenting a phonological analysis of a lesser known Slavic language, Kashubian.¹ Where appropriate, comparisons with other Slavic languages are made. In this way, knowledge about interactions in the Kashubian phonological system will be

¹ The English spelling *Cassubian* is also found, most significantly in Lorentz, Fischer & Lehr-Spławski (1935) and Stone (1972, 1993).

increased and a better understanding of the relation between Kashubian and the other Slavic languages gained.

Previous studies of Slavic languages have shown them to have a strong interaction between various phonological subsystems, such as syllable structure and stress, as well as between phonology and morphology. This seems to be the case for Kashubian as well. As a result, I have chosen to present my analysis within the framework of Optimality Theory, which has shown itself to be particularly well-suited to characterizing interaction between various linguistic systems. I also hope to contribute to the development of Optimality Theory in exemplifying how the different positioning of certain constraints can explain dialectal variation: this needs to be done if this analysis is to hold any validity for the language as a whole, since no one spoken dialect of Kashubian is generally considered representative of the language, although a literary dialect with loose norms based primarily on the Central Kashubian dialects was developed at the beginning of the 1900's and has had pedagogical grammars (Lorentz 1919, Wosiak-Śliwa & Cybulski 1992) written for it and major works of literature, documented in Drzeżdżon (1973, 1986) and Neureiter (1973, 1991), written in it.

1.1 The Kashubian language: preliminaries

In this section, the present study is contextualized by providing basic information about the language variety studied, and in particular its affiliation with other Slavic languages and its internal divisions. Following this is

a short review of published research on Kashubian and other sources of data.

1.1.1 A definition of Kashubian

Genetically, the Kashubian dialects belong to the Lekhitic branch of West Slavic and constitute the continuation of those dialects of Pomeranian spoken on the easternmost periphery, where the dialects of Pomeranian met those of Polish. Pomeranian itself constitutes a series of dialects intermediate between the West Lekhitic dialects of Polabian and the East Lekhitic dialects of Polish, with few defining characteristics of its own (Majowa 1978). Over the centuries, all speakers of Pomeranian dialects other than Kashubian were linguistically assimilated by German colonizers, and the Kashubians turned increasingly to the Polish cultural sphere for support. As a result, the Kashubian dialects, already sharing many features with Polish, have been extensively polonized, particularly the south-eastern dialects bordering on the territories of traditional Polish dialects.

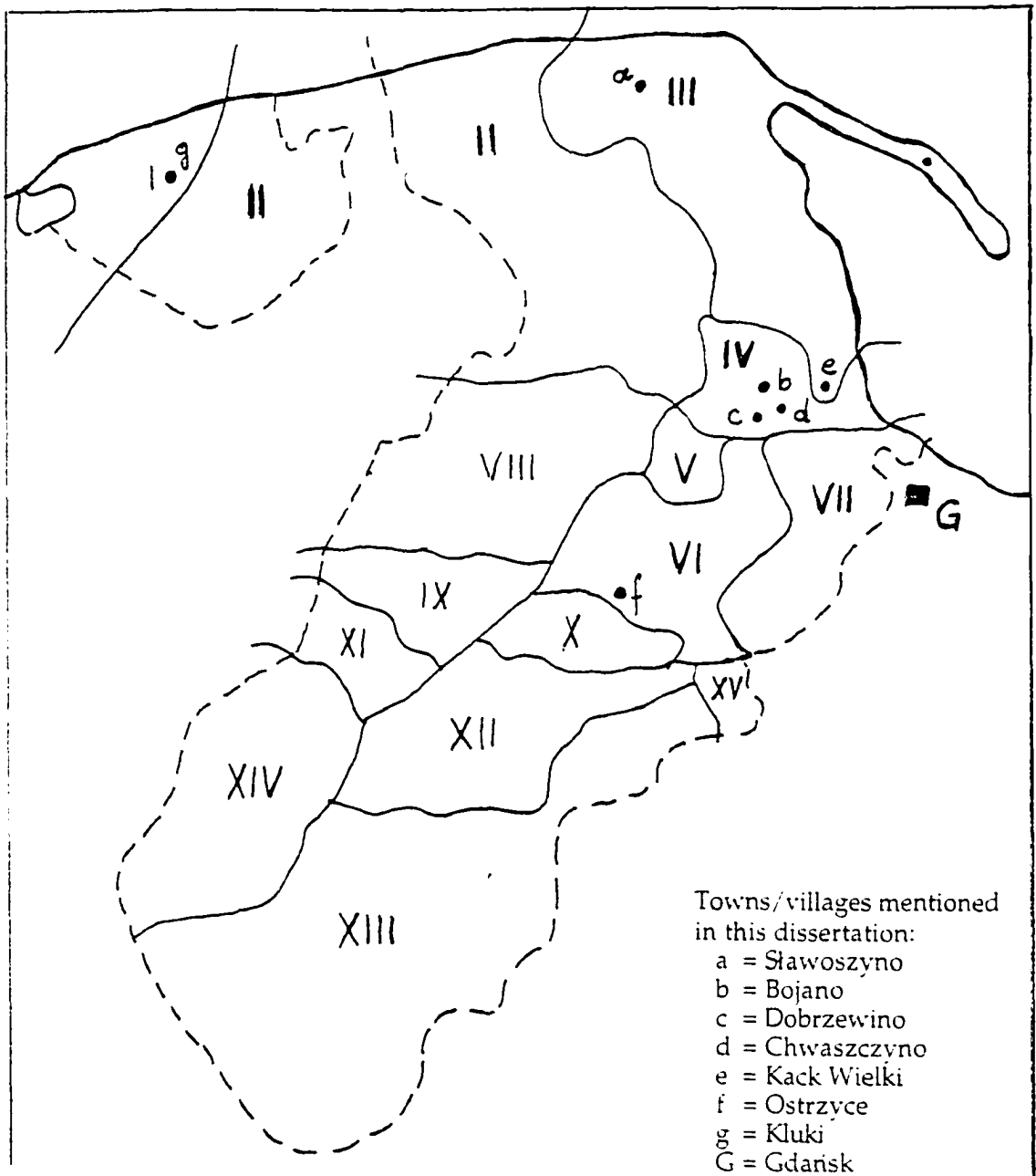
Although significant differences remain between modern Kashubian and the Polish standard language, such that a speaker of Polish can understand Slovak more easily than some dialects of Kashubian (Breza 1994), the proximity of Kashubian to Polish, combined with the long struggle of the Polish nation for survival as a political entity, makes the question of whether Kashubian is a Polish dialect or merely a close relative of the Polish dialect complex a subjective one. Traditionally, Polish linguists have insisted that Kashubian is just a Polish dialect (Dejna 1992), but many Slavists outside

Poland consider Kashubian to be a separate Slavic language (Rothstein 1993, Duličenko 1994). This latter position has also gained ground in Poland in recent years, with an increasing agreement that Kashubians' insistence on the distinctness of their language from Polish (Majewicz 1986) and the substantial body of literature written in Kashubian (Priestly 1997: 376) justifies calling Kashubian a separate language. This is also the position adopted here.

Within the Kashubian linguistic area there is great dialectal diversity. Working at the turn of the century, Lorentz (1925) identified 76 distinct Kashubian dialects, grouped into the divisions shown in map 1: most of these are still extant. Extensive fieldwork and analysis by the team working on the *AJK* (see section 1.1.2.1) in the 1950's and 1960's led to the identification of three macro-dialectal regions: the South, Central and North Kashubian dialect groups (Handke 1978).² Of these, the South Kashubian dialects have the fewest non-Polish features, the Central Kashubian dialects have the most speakers and constitute the basis for most variants of literary Kashubian (see Hopkins 1997), while the North Kashubian group has the greatest internal diversity. As much of this diversity is quite recent – since the eighteenth century (Topolińska 1974) – this dissertation concentrates on the phonological features common to most dialects of Kashubian, accounting for those features with a more limited distribution where this does not require extensive elaboration.

² The *AJK* researchers actually recognize six macrodialectal regions, dividing Central Kashubian into two subgroups, one in the west and one in the east, and Southern Kashubian into South-West and South-East Kashubian (Handke 1978:167).

Map 1: The dialects of Kashubian (per Lorentz 1925)

**North Kashubian:**

- | | |
|------------------------|-------------------------|
| I Slovincian | III Northeast Kashubian |
| II Northwest Kashubian | IV East Kashubian |

South Kashubian:

- | | | |
|-------------------------|----------------------|-------------------------|
| V Przedkowo dialect | IX Sulęczyno dialect | XIII South Zaborian |
| VI Central Kashubian | X Kashubian-Zaborian | XIV Southwest Kashubian |
| VII Southeast Kashubian | XI Parchowo dialect | XV Kociewian-Zaborian |
| VIII West Kashubian | XII North Zaborian | |

1.1.2 History of research – sources of data

This section presents what might be considered the milestones of research into the Kashubian language, followed by a brief discussion of the main sources of data used in this investigation.

1.1.2.1 The milestones of research into the Kashubian language

Although the scientific study of Kashubian has been traced back to the work of the Sorbian scholar Karl Gottlob von Anton in the late eighteenth century (Popowska-Taborska 1980), the first published presentation of any aspect of the Kashubian language is that of Krzysztof Celestyn Mrongowiusz (1823). This small lexicon included many Kashubian terms, although it is difficult to separate them out from the many standard Polish and Polish dialectal terms also listed. The book caught the attention of the scientific community and particularly that of the Russian Academy of Sciences in St. Petersburg, which sent first Piotr Prejs in 1840 and then Aleksandr Hilferding in 1856 to collect more information about Kashubian.

The resulting report of Hilferding (1862), who was aided in his investigation by the first indigenous reporter on the Kashubian language, Florian Ceynowa, was the first widely distributed report on the Kashubian language and included both texts from various Kashubian dialects as well as an extensive glossary.

Florian Ceynowa was a medical doctor from the coastal village of Sławoszyno who, having become acquainted with the leaders of the Czech and Sorbian revival movements during his studies in Wrocław (1841-1843),

aspired to lead a similar cultural revival among his fellow Kashubians. While not particularly successful, his efforts did lead to the publication of many texts in and about Kashubian, including the first grammatical description of a Kashubian dialect (Ceynowa 1879).

The 1880's brought investigations of Kashubian by Polish linguists such as Alfons Parczewski, Józef Łęgowski and Stefan Ramułt: of particular importance is the latter's Kashubian-Polish dictionary (Ramułt 1893, 1993), which with over 18,000 key words was six times larger than the most extensive Kashubian glossary previously published (Biskupski 1891) and won the Polish Academy of Sciences' S. B. Linde lexicography competitions in 1889 (part 1) and 1898 (part 2).³

In 1896, the German scholar Friedrich Lorentz began a forty-year career of research on Kashubian. Concerned with the dwindling number of speakers of the Slovincian dialects and under the impression that they reflected the Pomeranian proto-language more faithfully than the other Kashubian dialects – his early claim (Lorentz 1902) that Slovincian represents a variety of Slavic distinct from Kashubian was later abandoned (Lorentz 1925) and has been shown by Szultka (1992) to rest on a misapplication of ethnonyms by early nineteenth century researchers – Lorentz first directed his attention to these dialects, producing a detailed grammar (Lorentz 1903) and

³ For reasons discussed by Halina Horodyska in section four (pp. xii-xviii) of her introduction to Ramułt (1993), the manuscript for part two of Ramułt's dictionary was not published immediately but rather filed in the Academy of Science's archives where it stayed for over ninety years until it was rediscovered and published by Horodyska.

an extensive dictionary (Lorentz 1908, 1912). Soon after, however, he also turned his attention to the other Kashubian dialects, producing many articles and books on Kashubian including historical studies (Lorentz 1905-06, 1925), the most extensive grammar of Kashubian yet written (Lorentz 1927-37), and the first volume of a detailed Kashubian dictionary (Lorentz 1958).

Attention to Kashubian on the part of Polish linguists continued during the early years of this century, particularly in the work of dialectologists such as Kazimierz Nitsch and comparative Slavists such as Tadeusz Lehr-Splawinski, but it was only after the end of WWII that research on Kashubian truly flourished. It was then that the Institute for Slavic Studies of the Polish Academy of Sciences undertook to publish a linguistic atlas documenting the state of Kashubian. Based on field data collected between 1954 and 1961, the *Linguistic Atlas of the Kashubian and Neighbouring Dialects* (AJK) provides detailed documentation of the forms of Kashubian words found in the various dialects, and the researchers involved in its production have gone on to publish many articles on Kashubian, both within the commentary to the AJK and elsewhere. Two whose work is of particular importance are Hanna Popowska-Taborska and Zuzanna Topolińska.⁴

Over the past forty years, Hanna Popowska-Taborska has produced numerous studies on the Kashubian language. Her study of the Kashubian

⁴ Other members of the AJK editorial team with separate publications on Kashubian include Kwiryna Handke, Ewa Rzetelska-Feleszko (*née* Kaminska), Małgorzata Korytkowska, Jadwiga Majowa, Ewa Mastowska, Janusz Siatkowski, Zdzisław Stieber, Elżbieta Wrocławska, Jadwiga Zawadzka and Jadwiga Zieniukowa (compare Handke et al 1978:359 with Treder 1991).

vowel system (Popowska-Taborska 1961) was the first monograph resulting from work on the AJK. She took over the position of AJK head editor from Zdzisław Stieber as of volume seven. Her extensive research on Kashubian is reflected both in her widely distributed survey of research on this language (Popowska-Taborska 1980) and in her numerous articles, many of which are collected in Popowska-Taborska (1987). A common thread to most of this work is Popowska-Taborska's interest in the diversity and origin of the Kashubian lexicon, culminating in the publication, in collaboration with Wiesław Boryś, of a study devoted to comparing the lexicon of Kashubian with that of other Slavic languages (Popowska-Taborska & Boryś 1996) and the Kashubian Etymological Dictionary (Boryś & Popowska-Taborska 1994ff).

Zuzanna Topolińska was also among those who laid the groundwork for the AJK. Her work differs from that of Popowska-Taborska, however, in a number of ways. First, Topolińska has been much more interested in the phonology of Kashubian, both in terms of contemporary patterns (1958, 1966, 1967, 1969) and their origins (1964, 1974). Second, while Popowska-Taborska's publications are almost exclusively in Polish (72 of 77 items listed in Treder 1991), Topolińska has numerous publications on Kashubian written in languages other than Polish, including a monograph (1974) and four articles in English. Topolińska's greater engagement with the non-Polish-speaking world is also reflected in her attempts to go beyond a mere presentation of basic phonemes and alternations in describing Kashubian phonology. This is particularly the case in Topolińska (1974), where all phonemes and rules of

change are defined in terms of distinctive features, enabling her to refer to change in a number of phonemes with reference to a single feature. Unfortunately, the analysis suffers from being overly abstract, both in terms of rule formulation⁵ and features,⁶ and, like other analyses using linear rules, is unable to express feature-sharing in a non-arbitrary manner. Further work on Kashubian phonology may well have led to more updated analyses,⁷ but Topolińska's duties as head of the Polish Academy of Sciences' Institute of the Contemporary Polish Language – from 1975 – (Urbanczyk 1994: 358) and her extensive work on Macedonian⁸ have resulted in no more publications dedicated to Kashubian coming from her pen since Topolińska (1980).

As noted above, the Kashubians themselves have been engaged in the scientific study of their language from the mid nineteenth century. For the most part, their energies have been devoted to exploring Kashubian as a means of expression in literature, but some descriptive and prescriptive work on the language itself has also been published by Kashubians.

The most extensive purely descriptive study of any aspect of Kashubian

⁵ Rules in Topolińska (1974) are formulated purely in terms of features, making it difficult at times to determine exactly which segments are being spoken of.

⁶ Topolińska uses acoustic features such as [flat], [grave], [compact] and [mellow] which have generally been abandoned by generative linguists in favour of articulatorily based features. And while Topolińska (1974:25) may be correct in assuming that one set of independently justified distinct features is theoretically as good as another in a historical description, translation between the acoustic and articulatory feature systems is difficult enough to deter all but the most persistent contemporary reader.

⁷ In her last article known to mention Kashubian (1985), Topolińska uses articulatory features exclusively.

⁸ Topolińska has co-authored a dictionary of Macedonian (Pianka, Topolińska & Vidoeski 1990), has held the Polish chair at the Cyril & Methodius University in Skopje since 1983 and is a corresponding member of the Macedonian Academy of Sciences.

by a Kashubian is Sychta's (1967ff) seven volume dictionary of the Kashubian dialects, which – unlike all other Kashubian dictionaries – derives great authority not only because of its extensiveness, but also because it lists only words attested in spoken Kashubian and recorded by Sychta himself during decades of field work. Sychta (1967ff) constitutes the basis for further lexicographic work, including Ročlawski's (1991) *index a tergo* and the Kashubian Etymological Dictionary (Borys & Popowska-Taborska 1994ff).

An important centre for research by Kashubians on Kashubian has been the University of Gdansk's Institute of Polish Philology, led since the 1970's by Edward Breza and Jerzy Treder, from the South and North Kashubian speaking areas respectively. While both have made their individual contributions to the study of Kashubian, Breza with 44 articles listed in Treder (1991) and Treder with two monographs on Kashubian phraseology (1986, 1989), and 54 articles listed in Treder (1991), perhaps their greatest contribution has been in promoting the use of the Kashubian language as proof readers, editors,⁹ reviewers, teachers and writers of reference works for the writers of Kashubian.¹⁰ The latter include their style guide (Breza & Treder 1984) describing the orthographic norm for literary

⁹ Breza edited the proceedings of a conference on the status of Kashubian (Breza 1992), and Labuda's (1982) Kashubian-Polish dictionary. Treder edited the Polish Hilferding translation (1990), Karnowski's Ceynowa biography (1997), Grucza's Gospel translation (1992a), the proceedings of the second Slovincian Conference (Treder 1992), and both the Labuda (1981) and Trepczyk (1994) Polish-Kashubian dictionaries.

¹⁰ Treder has recently taken on an even more active role in the development of literary Kashubian, providing the Kashubian text for all chapters of Borzyszkowski, Mordawski & Treder (1999), a bilingual general reference work on Kashubian history, geography, language and literature.

Kashubian which had official status from 1974 to 1995,¹¹ and their grammar of Kashubian (Breza & Treder 1981) which meets the needs of the non-linguist Kashubian writer but also contains much of interest to the linguist.

In addition to the descriptive work of Kashubian academics, descriptive work is also being done by non-linguists working for a reinvigoration of Kashubian. Both Alexander Labuda, whose small dictionaries (1960, 1981, 1982) list only those Kashubian words different in form from their Polish cognates, and Jan Trepczyk, whose two volume Polish-Kashubian dictionary attempts to gloss most Polish words and includes many exemplifying phrases, compiled their dictionaries primarily with the intention of providing a tool for writers of Kashubian. Assisting writers of Kashubian is also the primary aim of Eugeniusz Gołąbek's (1997) style guide, which goes far beyond Breza & Treder (1984) in its abundance of declensional and conjugational paradigms, extensive discussion of the relation between written and spoken forms, and copious examples of the use of various Kashubian affixes; furthermore, Gołąbek (1997) is only the second presentation of Kashubian grammar written in Kashubian, as pointed out by the reviewer Breza (1998). Gołąbek also has more than the linguistic needs of writers in mind. Well aware that if Kashubian is to survive, there must be materials available to help people learn Kashubian as a second language, he has published a Kashubian-Polish

¹¹ An Orthography Commission established by the Kashubian-Pomeranian Association and chaired by Breza accepted this orthography in 1974 as the standard which all writers should use in writing Kashubian, revising it in 1981. Many writers refused to use this orthography, however, and finally a new official standard was agreed on in 1995 which seems, so far, to be respected by all writers.

phrase book (Gołąbek 1992). A somewhat more academic approach to this same goal is taken by Wosiak-Śliwa & Cybulski (1992), the first pedagogical grammar of Kashubian for Poles.

While most research on Kashubian during the past fifty years has been done in Poland, important contributions have also been made by some foreign scholars. Foremost among these is the German scholar Friedhelm Hinze, who took on the gigantic task of completing Lorentz's (1958) dictionary of Pomeranian, and is a regular contributor of articles on Kashubian (47 listed in Treder (1991)), in particular to the journal *Zeitschrift für Slawistik*.

It should not be surprising that a number of linguists from Slavic nations have shown interest in Kashubian. Treder (1994b) discusses research by a number of Czech scholars interested in Kashubian, in particular Jan Petr. Among scholars from the former Soviet Union, the Ukrainian Aleksandr Duličenko has won wide recognition both by actively fostering knowledge about Kashubian in the context of his research on "literary microlanguages" (Duličenko 1981, 1994) and also through his important contributions to the history of research on Kashubian (Duličenko 1996, 1997).

Discussion of Kashubian by English-speaking Slavists has largely been limited to comparisons with other Slavic languages, but some book chapters and monographs dedicated to Kashubian have also appeared. Gerald Stone's chapter on Kashubian in the Comrie & Corbett survey of the Slavic languages (Stone 1993), for example, is the most extensive description of Kashubian grammar published in English to date, and the chapter on Kashubian in

Baerman (1999) not only gives a detailed description of Kashubian stress patterns (following Lorentz 1925) but also seems to be the first published analysis of Kashubian in generative phonology (see section 1.2.2.2). Two monographs on Kashubian have been published in America and are widely accessible, Perkowski's (1969) description of the idiolect of a second-generation Kashubian in Wisconsin and Stokof's (1973) description of the phonology and morphology of the (now extinct) Kluki dialect of Slovincian.

1.1.2.2 Sources and form of data used in this dissertation

Given the great dialectal diversity within Kashubian, it is important to be clear about which variety of the language is being described here. Due to its accessibility and representative nature, I have chosen to focus on literary Kashubian as described in Gołąbek (1997).

Where the written form provides only limited information about the facts of Kashubian phonology in areas such as voicing assimilation, examples are drawn from dialect texts, in particular Sobierajski (1964) and Topolińska (1967), originating in or near the village of Chwaszczyno, the home village of Eugeniusz Gołąbek, from whose works most of my examples are drawn. These dialects – like the Central Kashubian dialects, with which Topolińska (1967) groups them – represent in terms of phonology and lexicon a certain compromise between the extremes of North and South Kashubian and are among the core dialects on which literary Kashubian is based. Furthermore, a substantial amount of written material has originated in this area, thanks primarily to the efforts of Gołąbek, whose literary production includes a

column published monthly in *Pomerania* for five years, a Kashubian-Polish phrase book (1992), a style guide (1997), and three exhaustively scrutinized and widely distributed translations constituting the basic texts of liturgical Kashubian today (Gołąbek 1993 and 1999) and Gołąbek & Pryczkowski (1999). As one of the few books documenting the authentic vocabulary of Kashubian with consistent marking of primary stress and secondary articulations, Gołąbek (1993) has been of great value to this study as a primary source of data, particularly when supplemented by data from Gołąbek (1997).

Certain secondary sources of information have been of particular use in identifying appropriate examples to illustrate the phonological phenomena discussed in this thesis. Topolińska (1974) has been used to identify major developments common to all Kashubian dialects, and descriptions of the pronunciation of Kashubian in such reference works as the AJK, Breza & Treder (1981, 1984), and Lorentz (1919, 1925) have helped identify subtle regularities. Inflectional and derivational patterns are rich in examples of the consonantal and vocalic alternations of Kashubian, but for the sake of consistency, information about these patterns was drawn primarily from Gołąbek (1997) and the grammatical sketch of Cybulski (1992) produced in collaboration with Gołąbek. Due to concerns about authenticity expressed in Treder (1992b, 1994a, 1994d, 1995, 1996), the large dictionaries of Ramułt (1893, 1993) and Trepczyk (1993) have been used primarily to gloss examples found elsewhere, while Sychta (1967ff) has been used primarily to check the authenticity of questionable forms.

Information about the phonological phenomena to be examined in this dissertation can be derived from the above mentioned sources with one exception. There is no published information about the syllabification of words in Kashubian. There are no obvious segmental markers of syllable division in Kashubian, and, native speakers being unaccustomed to speaking about their linguistic intuitions, it has proven extremely difficult to collect statistically reliable data on this question. Nevertheless, some informants were willing to divide a structured list of Kashubian words (given in appendix) into syllables, producing results generally consistent with the patterns of Polish syllabification as described in Bethin (1992) and Rubach & Booij (1990a, b). Examples of syllabification patterns in Kashubian are drawn from this analysis.

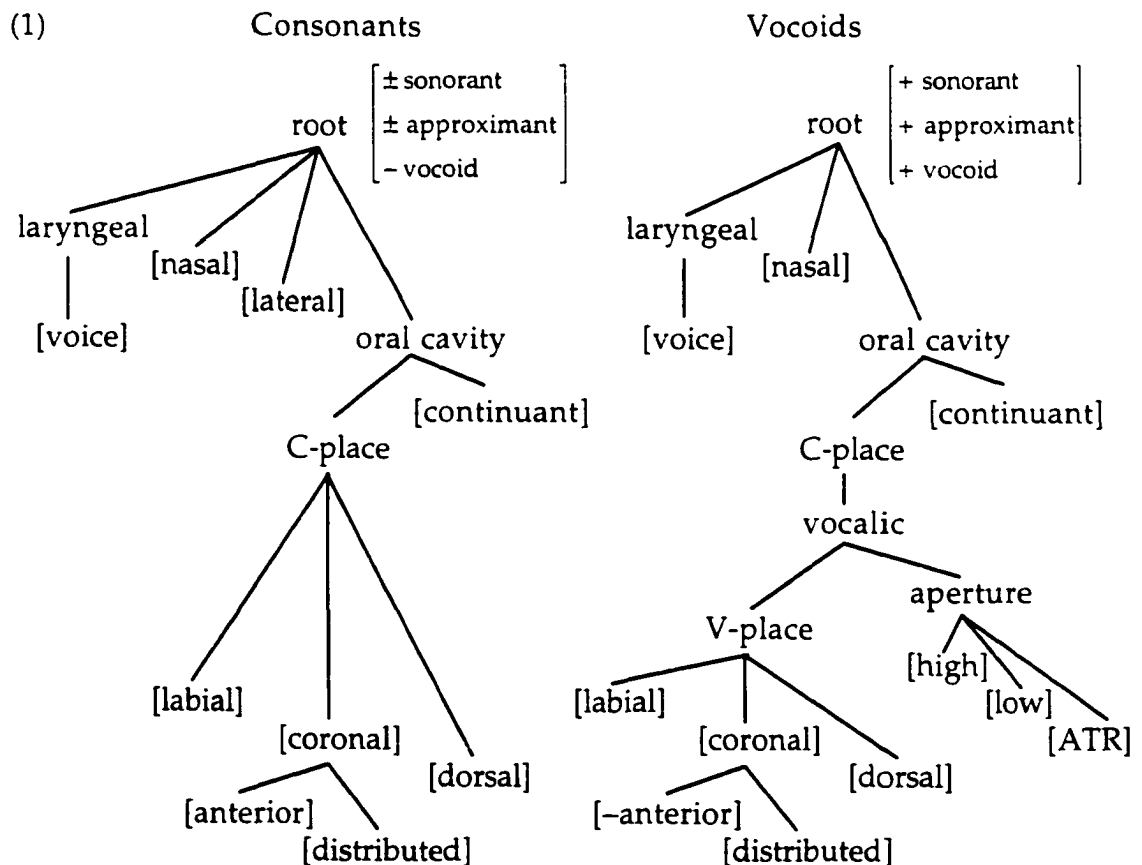
1.2 Overview of the phonology and morphology of Kashubian

In this section, the basic phonemic units (1.2.1) and suprasegmental units (1.2.2) are presented and discussed. This is followed by a brief presentation of the morphology of Kashubian (1.2.3) and its implications for the phonology of this language.

1.2.1 Phonemic units

It has been argued that assumptions cannot be made about input forms in an output-based theory like Optimality Theory, since the candidate generator must have access to all possible inputs (see 1.3.3). Nevertheless, a set of input forms for a given language can be inferred from the observable

output forms. The phonemes constituting these input forms are here defined in terms of a constriction-based model following Clements & Hume (1995), hereafter C&H. In this theory, sounds are represented in terms of the constriction involved in producing them, these constrictions being hierarchically organized so that the presence of a particular feature, for example [anterior], implies the activation of the features dominating it. Like Place of Articulation theory (Clements 1985, Hume 1992, Selkirk 1990), Constriction theory presumes consonants and vowels to have the same set of features, so that features may be shared, with the only difference being that in vowels the class node *vocalic* and its dependents *V-place* and *aperture* intervene between C-place and the Place nodes [labial], [coronal] and [dorsal], as shown in (1).



My choice of this model rather than the major alternative, the Articulator Theory of Sagey (1986), is motivated by the superiority of Constriction/POA Theory in accounting for palatalization (= coronalization in the analysis of Hume 1992) which is an important aspect of the phonology of every Slavic language. Unlike those who would group Coronal and Dorsal into a Lingual node (Browman & Goldstein 1989) and those who would group Labial and Dorsal into a Peripheral node (Avery & Rice 1989, Cho 1990, 1991, Hall 1997), I retain C&H's classification of the three Place nodes as equal in status because Kashubian labialization provides evidence for both a Labial-Lingual contrast and a Coronal-Peripheral contrast (see also section 2.3). On the other hand, C&H's use of multi-tiered [open] as an aperture feature proved to be a cumbersome instrument in describing Kashubian vowel raising (section 4.1), and so I have abandoned it in favour of a more traditional distinction between the features [high], [low] and [Advanced Tongue Root].¹²

In the tables below, the hierarchy is suggested by the use of multiple bullets, with dominated features following those immediately dominating them. Specification for privative features is marked with a check (✓), that for binary features with plus (+) or minus (-). The Kashubian phonemes are transcribed following a modified version of the system used in the AJK.¹³

¹² Use of [± ATR] seems more appropriate than [± tense] for Kashubian, because while tongue position in production of the closed low vowel /ā/ is certainly higher than for the open low vowel /a/, both are phonetically realized as lax vowels.

¹³ My transcription differs from that of the AJK in two ways. First, in order to make the thesis more accessible I have changed some of the symbols used. For a comparison, see the reference page on Kashubian orthography (p.xii).

This transcription also differs from the AJK in dealing with predictable assimilation.

Kashubian has both simplex consonants with a secondary articulation and complex ones with a secondary articulation.

(2) Simplex Obstruents of Kashubian ([-sonorant, -approximant, -vocoid])

	p	b	f	v	t	d	s	z	c	ʒ	ʃ	ʒ̣	č	(ʒ)	k	g	x
Root Fs																	
•Laryngeal																	
••voice		√		√		√		√		√		√		√		√	
•Oral cavity																	
••continuant			√	√			√	√	-/+	-/+	√	√	-/-	-/+			√
••C-place Fs																	
•••labial	√	√	√	√													
•••dorsal															√	√	√
•••coronal					√	√	√	√	√	√	√	√	√	√			
••••anterior					√	√	√	√	√	√							

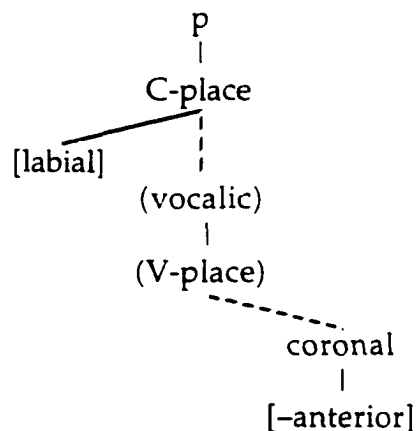
(3) Simplex [-vocoid] Sonorants of Kashubian ([+sonorant, +voice])

	m	n	ɲ	r	ʀ	ʁ	l
Root Fs							
•approximant	-	-	-	+	-	+	+
•Nasal	√	√	√				
•Lateral						√	√
•Oral cavity							
••continuant				√	√	√	√
••C-place Fs							
•••labial	√						
•••coronal		√	√	√	√	√	√
••••anterior		√		√		√	√
••••distributed			√		√		√

The AJK does not represent predictable information such as labialization or word-final devoicing, however, these are being examined in this thesis and the framework being used is a theory which takes surface forms as basic, so I represent labialization with a raised w and devoicing with an underring. When it is necessary to discuss input forms, they are given between diagonal parentheses. Thus, the word *kwoto* 'wheel (Nom.sg.)' has the input form /koło/ and the word *drāv* 'trot (Nom.sg.)' has the input form /drāv/.

In addition to these simplex phonemes, Kashubian has some complex phonemes with a secondary place articulation: /pʲ/, /bʲ/, /fʲ/, /vʲ/ and /mʲ/. Following C&H, these are treated as differing from the phonemes /p/, /b/, /f/, /v/ and /m/ only in having a vocalic place node adjoined under their C-place node, with V-place and vocalic nodes interpolated to preserve well-formedness as shown in (4) for the phoneme /pʲ/, the initial consonant in words such as *piisac* 'to write' and *piāc* 'five'.¹⁴

(4) Representation of palatalization



The phoneme /tʲ/ superficially has a structure similar to that adopted for the secondarily palatalized phonemes, in that it is realized in many dialects as the labio-velar glide [w], which is historically a result of secondary velarization with subsequent loss of the primary (coronal) articulation.¹⁵ In the phonology of Kashubian, however, /tʲ/ behaves as a non-palatalized counterpart to /l/ and thus is best represented underlyingly as a simple coronal lateral

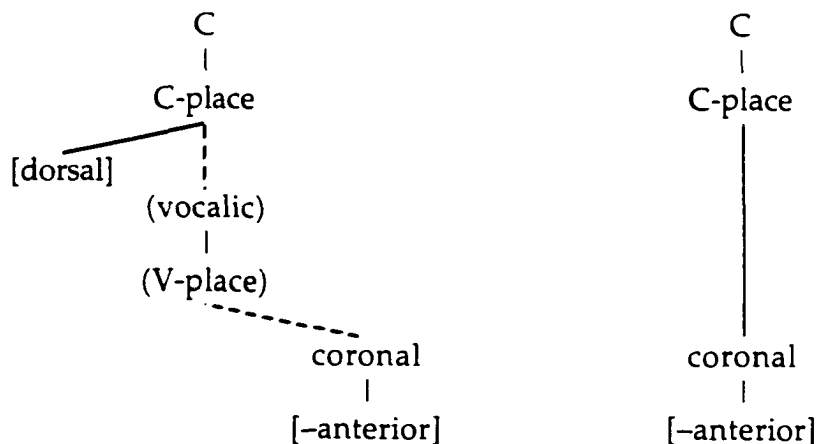
¹⁴ Where possible, as in the representation of *piisac*, the initial consonant shares the coronal specification of the following vowel. In *piāc*, however, there is no feature sharing.

¹⁵ In the dialects of the Hel peninsula and adjacent boglands this development did not occur. Rather, here there was a context-free merger of /tʲ/ with /l/ (tʲ → l).

without a secondary articulator.

Some Kashubian phonemes presently lacking a secondary articulator – all coronal fricatives and affricates other than *s* and *z*, as well as the sonorants *n*, *ɹ* and *l* – have developed historically from segments with a primary coronal or dorsal articulator and an adjoined secondary (coronal) articulator. However, in these phonemes the adjoined coronal node has been promoted (C&H, 295) to the status of major articulator, replacing the original place feature and (usually) retaining the vocalic [–anterior] feature (C&H, 295). This is shown for velar palatalization by the contrast between (a) and (b) in (5), where (a) represents a palatalized velar – still found in a few villages of NW Kashubian (Breza & Treder 1981: 31) – and (b) represents the corresponding coronal affricate found in all other dialects.¹⁶

- (5) (a) palatalized velar stop (*k*) (b) coronal affricate (*č/ć*)



¹⁶ The palatalization of the velar stops has, in most Kashubian dialects, produced two distinct affricates. Where stop-affricate alternation is morphologically determined (2.3.3) the affricate is *č* (phoneme: /č/) in all dialects. Where stop-affricate alternation is determined by the frontness of the following vowel (2.3.2.2), many dialects have *k* ~ *ć* (phoneme: /k/) and *g* ~ *ź* (phoneme: /g/) allophony. Both *č* and *ć* can be represented as in (5b), being distinguished by the feature [distributed], as *ć* has a longer constriction than *č* (Czaykowska-Higgins 1988:43).

Sometimes the shift from an a-type representation to a b-type representation has included not only elimination of the original place feature and the nodes vocalic and V-place, but also the [-anterior] feature associated with vocoid segments. This is the case for the coronal affricates /c/ and /ʒ/, as well as the lateral /l/ (< *li), which, having greater blade contact, is distinguished from /t/ (< *l) by the feature [distributed].¹⁷

C&H's model makes a basic distinction between [-vocoid] segments, discussed above, and [+vocoid] segments, namely, vowels and glides. The latter, of which only two, /w/ and /j/, are common in Kashubian, differ from the former only in where they may appear within the syllable.¹⁸ As shown in (1), [+vocoid] segments generally have the same structure as [-vocoid] segments but differ in having the additional two nodes [vocalic] and [V-place] under the C-place node. Also, coronal is always associated with a [-anterior] node in [+vocoid] segments.

The featural specification of the Kashubian vowels is shown in (6): all have the root features [+vocoid, +approximant, +sonorant], the laryngeal feature [+voice] and the oral cavity feature [+continuant].

¹⁷ Spreading of the vocalic coronal node results in the concomitant spreading of the features [-anterior] and [distributed]. In Kashubian, the [+anterior, +distributed] coronal obstruents are realized phonetically as coronal affricates, and the [+anterior, +distributed] coronal lateral as [l].

¹⁸ Thus, Kashubian /w/ has the same featural specification as /u/ but appears only in onsets, while /j/ has the same featural specification as /i/ but appears only in onsets and codas. When /h/ is used as a prothetic consonant to satisfy ONSET (see 2.1) before certain stems – typically, these have an input form with an initial low vowel –, it functions as the non-syllabic equivalent of /a/, although its marginal status apparently leads some speakers to reinterpret it as a velar fricative [ɣ] (Breza & Treder 1981).

(6) The vowels of Kashubian

	i	u	ə	ɛ	e	ó	o	á	a	õ	ã
Root Fs											
•Oral cavity											
••C-place Fs											
•••vocalic											
••••Aperture											
•••••high	+	+	+	-	-	-	-	-	-	-	-
•••••low	-	-	-	-	-	-	-	+	+		
•••••ATR	+	+	-	+	-	+	-	+	-	+	-
••••V-place Fs											
•••••labial		√				√	√				
•••••coronal	√			√	√						
•••••dorsal		√				√	√	√	√	√	√
•Nasal										√	√

Implicit in this table are a number of contrasts which play a role in this thesis. Presence of a labial node is shown to trigger labialization in section 2.3.2.1, although the presence of a coronal node is not necessarily associated with palatalization as discussed in section 2.3.3. The ATR symmetry, which has parallels in systems of vowel height harmony found in many African languages, is shown in section 4.1 to correlate with a predictable alternation in a given context. And finally, the lack of place specification in /ə/ makes it ideally suited to be an excrescent vowel, as shown in 4.3.

A comparison of this inventory with that of Stone (1993) shows a number of differences, for which there are both practical and theoretical reasons. In the consonantal inventory, Stone's analysis represents both /ɬ/ and the largely predictable labial glide found in a (non-coronal) onset to most

[round] vowels (see 2.3) as /w/. More significantly, Stone's inventory does not include any palatalized labials, which he justifies by claiming the consonant system to have an "almost complete absence of the soft:hard distinction" (Stone 1993: 762), in which he is supported by Treder (1994c: 35). The reason for this lack apparently lies in the fact, discussed by Breza & Treder (1981: 64) and others, that there is little phonetic overlap between the labial gesture and the following palatal gesture in a word such as *piāc* 'five'. Nevertheless, as /pi, bj, fi, vi/ and /mi/ certainly derive historically from single segments and presently act phonologically as such – *bavienē* 'playing', for example, is syllabified as *ba.vie.nie*, not *bav.je.nie*, although /v/ is a possible syllable coda – this thesis follows the AJK in treating palatalized labials as single segments.

Consistent with his approach to consonants, Stone's vowel inventory seems to reflect the phonetic realization of the vowel phonemes in a particular dialect, which, while not named, seems to be a conservative Central Kashubian dialect. The inventory in this thesis, in contrast, focusses on the relationships within the vowel system which, as Treder (1995b: 35) points out, Stone's presentation greatly obscures. Thus, Stone's /ɔ/ is represented in this thesis as /ā/, because it patterns phonologically with /a/ and not with /ε/ as suggested by Stone's presentation. Stone's inventory is also misleading in giving the back rounded mid vowels as /o/ and /u/¹⁹ but

¹⁹ Stone actually uses /ɔ/ for /u/ and /ɾ/ for /r/ following pre-1989 IPA usage.

the (phonetically) higher of the two nasal vowels as /*õ*/: this suggests that /*õ*/ is the nasal counterpart of /*o*/, whereas it in fact has the height of /*u*/.²⁰

1.2.2 Suprasegmental units

A number of phonological units can be distinguished above the segmental level in the Kashubian word: these units constitute distinct domains for application of various phonological phenomena. The phonemes are grouped into syllables (σ), while syllables may be grouped binarily into feet (Ft) or directly integrated into the next higher units, the prosodic words (PrWd). Finally, the prosodic words are grouped into clitic groups (CG) and higher units.²¹

1.2.2.1 Syllable Structure

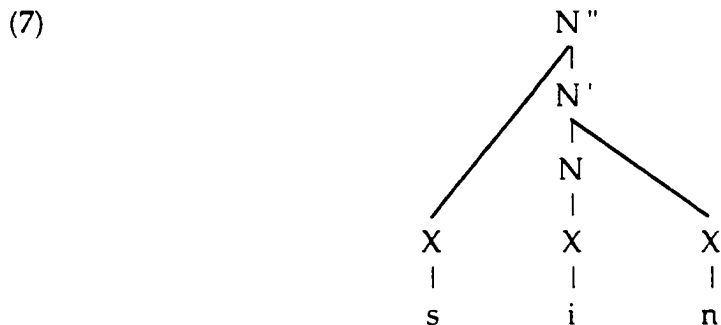
The distribution of phonemes within the Kashubian word depends largely on their position within the syllable with which they are associated.

Two different views of syllable structure are found in the generative phonological literature on Slavic languages. In describing Polish and Slovak – among Kashubian’s closest relatives – Rubach has argued for the superiority of Levin’s (1985) X-skeletal framework, in which segments are assigned one-

²⁰ As /*ã*/ and /*õ*/ are distinguished by only a single aperture feature (ATR), and the presence of [nasal] is sufficient to distinguish them from all other vowels, marking the tenseness of /*õ*/ is not needed in this analysis. Indeed, since /*õ*/ alternates with /*ã*/, it could arguably be represented as /*ã*/: compared with this, the form <*õ*> is clearly a compromise.

²¹ As in Polish (Czaykowska-Higgins 1988, Szpyra 1989, Rowicka 1999a), the root and suffixes together form a distinct prosodic word in Kashubian, with prefixes being outside this prosodic word – evidence from syllabification is given in 3.1.2. Prefixes, and the stems they attach to are grouped together only at the level of the clitic group (Rowicka 1999a). The clitic group combines with other units to form higher phonological units, but data is insufficient to allow examination of these in this thesis.

to-one to skeletal slots, which serve as terminal elements to an X-bar structure as shown in (7) for the Kashubian word *sin* 'son'.



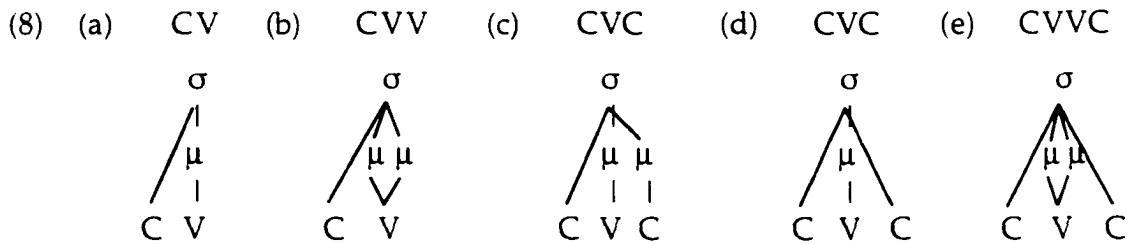
This framework has been used in analyses by Rubach, both alone (1986, 1993a, b, 1995) and in collaboration with Booij (1990a, 1990b, 1992), as well as in Bethin's (1992) monograph on Polish syllable structure.²² Rubach's preference for the X-skeleton, however, is grounded in his assumptions about the nature of underlying representations, while Bethin merely states (1992: 16) that Polish does not provide evidence which might give the advantage to an alternative analysis.

The major alternative in question is moraic theory, which has been used to describe the syllable structure of Bulgarian (Zec 1988), Russian (Yearly 1995), and Serbo-Croatian (Zec 1988) among the Slavic languages. Moraic theory uses abstract units (moras) to represent syllable weight. As shown in (8),²³ vowels are always associated with one (a) or two (b) moras depending on whether they are short or long; onset consonants are never associated with a

²² Other linguists using the X-skeleton model to describe Polish include Piotrowski (1992a, 1992b) and Szpyra (1992). Spencer (1986) uses the similar CV-skeleton.

²³ Diagrams in 8 a, b, c, d and e correspond to those in Zec's (1995) 19a, 18a and 19b.

mora. Languages differ greatly with respect to coda consonants, some treating them all as moraic (c),²⁴ some treating them all as non-moraic (d & e), and some treating certain coda consonants as moraic but not others; in the latter case, as Zec (1988, 1995) has shown, sonorants are more likely to behave as moraic than obstruents.



Unlike skeletal theory (as proposed by Levin 1985), moraic theory correctly predicts that onsets contribute little to syllable weight, that languages can treat a heavy (bimoraic) syllable as equivalent to two light (monomoraic) syllables, and that languages may value the weight of coda consonants non-uniformly. For these reasons, generative phonology has increasingly turned to moraic theory in characterizing the syllable structure of any language.

There is also a specific reason for preferring a moraic characterization of Kashubian syllable structure. While distinctive vowel length has been lost in Kashubian, the reflexes of the historically long vowels are generally less open than the reflexes of the historically short vowels, so that it is still possible to speak of a distinction between heavy vowels (i, u, é, ó, á, õ) and light vowels (ə, e, o, a, ā). Many words exhibit an alternation between the heavy and the light vowels in one phonologically defined context: in these

²⁴ It is generally assumed that syllables can be maximally bi-moraic.

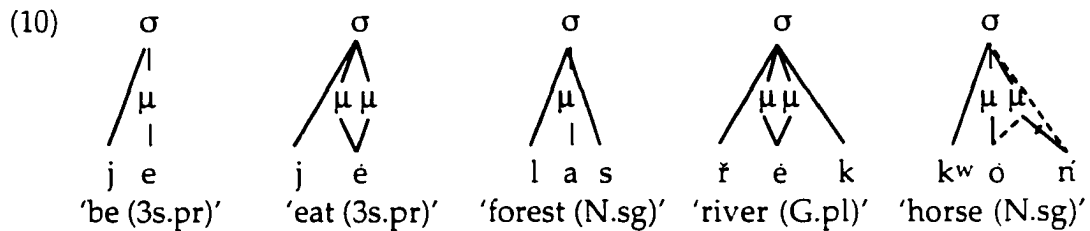
words, stem-final syllables closed by an underlyingly voiced consonant have a light vowel when followed by a vowel-initial inflection (right column of 9a), and a heavy one when nothing follows (left column of 9a).

(9)	Nom. sg.	Gen. sg.	
(a)	gřib̥	gřaba	'mushroom'
	kwóni	kwónia	'horse'
(b)	xłop	xłopa	'man'
	las	lasa	'forest'
(c)	xlɛv̥	xlɛva	'trough'
	řeka	řéci	'river'

The vowels of word-final syllables closed by a voiceless consonant do not exhibit this alternation and are usually light (9b), although non-alternating stem-final vowels followed by a voiced consonant are also found (9c).

If, as is argued in section 4.1, the appropriate description of these facts lies in assuming that certain consonants in Kashubian can be lexically specified as moraic but the language gives a high ranking to a constraint prohibiting the appearance of moraic consonants in surface forms, with mora preservation resulting in the consonantal moras docking on the preceding vowel and being phonetically interpreted as decreased openness of the preceding vowel, then moraic theory must be preferred over skeletal theory which, it has been claimed (Zec 1988), is unable to define a certain subclass of consonants as weight-bearing. The moraic patterns found in Kashubian words are those shown in (10).²⁵

²⁵ The form of *kwóni* given here shows its derivational history, with both input links and the effects of the surface constraint on moraicity of consonants. In surface forms, both *řek* and *kwóni* have the same moraic structure, with both moras attached to the vowel and the coda consonant prosodified directly under the syllable node.



Further discussion of this alternation is presented in section 4.1, and supporting evidence from the $e\text{-}\emptyset$ alternation in word-final syllables given in section 4.2.

Moraic theory regulates the relationship between onset, nucleus and coda, but has nothing to say about the ordering of segments within onsets and codas, if – as is the case in Kashubian – complex onsets and codas are allowed. The distribution of phonemes is regulated by the Sonority Sequencing Generalization, whose classical formulation (adopted by Bethin 1992) is given in (11).

(11) Sonority Sequencing Generalization (Selkirk 1984: 116)

In any syllable, there is a segment constituting a sonority peak that is preceded and/or followed by a sequence of segments with progressively decreasing sonority values.

The insistence of this particular formulation that adjacent segments have differing sonority values is intended to capture the principle of minimal sonority difference argued for by Steriade (1982) among others, but it unnecessarily complicates the syllabification of consonant clusters in many languages, including Kashubian. As Zec (1988) shows, languages differ in how they divide up the sonority scale (within which the *potential* ranking of various features is universally fixed) and effects of minimal sonority

difference can be explained other than by requiring adjacent segments to have different sonority values.²⁶ Thus, the following revised definition of the SSG will be adopted in this dissertation: accordingly, the SSG will be considered respected if the sonority of a given segment is less than *or equal to* that any segment nearer to the syllable nucleus.

- (12) Sonority Sequencing Generalization (Blevins 1995: 210)
Between any member of a syllable and the syllable peak, a sonority rise or plateau must occur.

Both the onset and the coda constitute distinct domains for the application of phonological effects. The onset is the domain of application for labialization and palatalization, discussed in section 2.3, while both the onset (section 2.4) and the coda (section 3.2) are domains for voicing assimilation.

1.2.2.2 Foot and Word (Phonological, Morphosyntactic) Structure

The evidence for prosodic structure above the syllable level comes from the stress system of Kashubian. Most descriptions of Kashubian stress focus on the northern dialects and adopt a historical perspective, making determination of the default stress pattern difficult, but Kashubian can be characterized on the whole, as I have argued in Hopkins (1991, 1992), as having primary stress on the first syllable of the phonological or morphological word, with lexically stressed morphemes drawing stress away from this initial position. To go beyond this preliminary analysis of such a system with lexical stress however requires extensive preparation. Thus, the highly

²⁶ Zec (1988:111-112) suggests an alternate explanation for only one case where Steriade (1992) claimed a minimal sonority difference was needed, but Morelli (1997, 1999) accounts for a wide range of cases.

interesting OT analyses of Russian lexical stress presented by Revithiadou (1998) and Alderete (1999) were built on the comprehensive metrical analysis of Melvold (1990), whose study would not have been possible (Melvold 1990: 10) without an exhaustive grammatical dictionary of the standard Russian language (Zaliznjak 1977). Given that there is no reference work similar to Zaliznjak (1977) for any Kashubian dialect (not to mention an analysis comparable to Melvold 1990), any analysis of Kashubian stress along the lines of Alderete (1999) or Revithiadou (1998) could only be incomplete at this point in time, and it should be noted that Baerman (1999), while adopting OT as the descriptive framework for his dissertation, devotes his chapter on Kashubian to describing stress patterns in terms of parts of speech and stem classes, as did Lorentz more than seventy years earlier.

There is little evidence for secondary stress: Lorentz (1925: 93) claims it falls on the initial syllable of compounds and the penultimate syllable of longer words with initial primary stress, but he does not mark it in his transcriptions of Kashubian speech, and it appears only sporadically in the *AJK* and Topolińska (1966, 1967, 1969).

In keeping with the prosodic hierarchy, these facts can be accounted for by building a trochaic foot over the lexically stressed syllable or, if there is none, the first syllable of the appropriate stress domain – generally clitic group (CG) in the south, prosodic word (PrWd) in the north. Since there is no rhythmic

secondary stress,²⁷ Kashubian apparently does not have exhaustive footing. Only lexical words are assigned a foot in non-emphatic speech, although prepositions are often (particularly in the southern dialects) treated as part of the stress domain of the following lexical word.

Thus, assuming that Ft boundaries are contained within PrWd boundaries, the prosodic domains of an unprefixated form can be assumed to be as in (13a) for the word *b^wuśnota* ‘pride’, those of a prefixated form as in (13b) for the word *p^woftařac* ‘to repeat’.

- (13) (a) CG[PrWd[Ft(b^wú . śno)Ft ta]PrWd]CG
 (b) CG[p^wo PrWd[Ft(ftá . řac)Ft]PrWd]CG

1.2.3 Morphology

Like the other Slavic languages, Kashubian is a flectional language with a rich variety of derivational and inflectional affixes.

1.2.3.1 Derivational Morphology

Prefixes are used primarily to modify verbs and their derivatives and are often associated with perfective aspect; most also exist independently as prepositions, but the meaning of the prefixes can seldom be defined as precisely as that of the corresponding prepositions. The verbal prefixes of Kashubian include *bez-*, *do-*, *na-*, *nad-*, *wo-*, *wob-*, *wod-*, *p^wo-*, *p^wod-*, *pře-*, *přə-*, *roz-*, *s-/z-*, *wu-*, *v-*, *və-*, and *za-*. Some of these – particularly those with a meaning close to that of the corresponding preposition, such as *bez-*, *nad-*

²⁷ Even if Lorentz’ description of secondary stress is correct, no more than one additional foot – placed at the right edge of the stress domain – need be postulated.

and *p^wod-* – can also be included in adjectives/adverbs and nouns which do not have related verb forms. There are also several prefixes used exclusively with adjectives and adverbs, most notably the negative prefix *nie-* and the superlative prefix *ná-*.

Kashubian has a variety of derivational suffixes used to change word class and/or meaning. Those forming adjectives and adverbs include *-an*, *-at*, *-ov* and *-sk*, those forming nouns include *-anié/-enié*, *-ař*, *-ba*, *-dło*, *-niik*, *-ota* and *-unk/-ənk*, while those forming verbs include *-érov*, *-iv/-əv* and *-ov*. Discussion of the Kashubian derivational suffixes can be found in Breza & Treder (1981: 92-107), Gołąbek (1997: 96-106) and Treder (1994a: 473-485).

1.2.3.2 Inflectional Morphology

Kashubian uses inflectional morphemes to mark agreement, both between adjectives and the nouns they modify as well as between verbs and their subjects, and the government of objects by verbs and prepositions. This section presents a brief overview of these inflectional paradigms.

NOUNS

On the basis of their agreement patterns, Kashubian nouns are grouped into three genders, traditionally called masculine, feminine and neuter. Leaving aside minor variations correlating with semantic properties (animacy, humanness) and the degree of palatalness (“softness”) of the stem-final consonant, the masculine nouns fall into one declensional class and the feminine and neuter nouns into two declensional patterns each. All nouns are inflected for number (singular versus plural) and case: the Kashubian

grammar recognizes seven grammatical cases which nouns may be assigned according to their syntactic role and the particular verb or preposition they are governed by. The table in (14) thus exemplifies the nominal inflection with the masculine noun *kwoš* 'basket', the feminine nouns *gāba* 'mouth, snout' and *stədriā* 'well', and the neuter nouns *kwoło* 'wheel' and *kāzaniē* 'sermon'.

(14) Nominal inflections of Kashubian²⁸

SINGULAR	<i>kwoš</i>	<i>gāba</i>	<i>stədriā</i>	<i>kwoło</i>	<i>kāzaniē</i>
Nominative	<i>kwoš</i>	<i>gāba</i>	<i>stədriā</i>	<i>kwoło</i>	<i>kāzaniē</i>
Genitive	<i>kwoša</i>	<i>gābā</i>	<i>stədri-i/e</i>	<i>kwoła</i>	<i>kāzani-ā/égwo</i>
Dative	<i>kwošovi</i>	<i>gābie</i>	<i>stədri</i>	<i>kwoł-u/ovi</i>	<i>kāzani-u/émwu</i>
Accusative	<i>kwoš</i>	<i>gābā</i>	<i>stədriō</i>	<i>kwoło</i>	<i>kāzaniē</i>
Instrumental	<i>kwošā</i>	<i>gābō</i>	<i>stədriō</i>	<i>kwołā</i>	<i>kāzani-ā/im</i>
Locative	<i>kwošu</i>	<i>gābie</i>	<i>stədri</i>	<i>kwole</i>	<i>kāzani-u/im</i>
Vocative	<i>kwošu</i>	<i>gābwo</i>	<i>stədriā</i>	<i>kwoło</i>	<i>kāzaniē</i>

PLURAL	<i>kwoš</i>	<i>gāba</i>	<i>stədriā</i>	<i>kwoło</i>	<i>kāzaniē</i>
Nominative	<i>kwoše</i>	<i>gābā</i>	<i>stədrie</i>	<i>kwoła</i>	<i>kāzaniā</i>
Genitive	<i>kwoš-i/of</i>	<i>gāb/gābōf</i>	<i>stədri-i/of</i>	<i>kōł/kwołof</i>	<i>kāzaniōf</i>
Dative	<i>kwošom</i>	<i>gābom</i>	<i>stədriom</i>	<i>kwołom</i>	<i>kāzaniom</i>
Accusative	<i>kwoše</i>	<i>gābā</i>	<i>stədrie</i>	<i>kwoła</i>	<i>kāzaniā</i>
Instrumental	<i>kwošama</i>	<i>gābama</i>	<i>stədriama</i>	<i>kwołama</i>	<i>kāzaniama</i>
Locative	<i>kwošax</i>	<i>gābax</i>	<i>stədriax</i>	<i>kwołax</i>	<i>kāzaniax</i>
Vocative	<i>kwoše</i>	<i>gābā</i>	<i>stədrie</i>	<i>kwoła</i>	<i>kāzaniā</i>

²⁸ The first four paradigms in (14) are those recommended in Gołabek (1997: tables 01, 04, 06), with the Voc.sg. form *gāba* corrected to *gābwo* following Cybulski (1992:279), Breza & Treder (1981:115) and Gołabek (1997:60). The paradigm for *kāzaniē* is a composite of table 07 and paradigms given for this word in Cybulski (1992:278) and Breza & Treder (1981:117). Gołabek (1997), Cybulski (1992) and Breza & Treder (1981) are also - in varying measure - the source of the examples in (14-18).

ADJECTIVES

Kashubian adjectives agree with the nouns they modify in number, gender and, when used attributively, case. Most adjectives have one form characterized by a heavy vowel in the inflectional morpheme which can be used attributively (15a, b) or predicatively (15c).

- | | | | |
|------|-----------------------|---------------------------|---------------------------------|
| (15) | a. | stāri xłop čətā ksōškā | the old man is reading a book |
| | | stārā białka čətā ksōškā | the old woman is reading a book |
| | | stārē dřewo padało | the old tree fell down |
| b. | ksōška stārégwo xłopa | the book of the old man | |
| | ksōška stāri białci | the book of the old woman | |
| | kwořēń stārégwo dřeva | the root of the old tree | |
| c. | nen xłop je stāri | that man is old | |
| | na białka je stārā | that woman is old | |
| | no dřewo je stārē | that tree is old | |

Some of these adjectives also have “short” forms lacking a heavy vowel inflectional morpheme. Generally, these can be used only predicatively, as shown in (16).

- | | | | | |
|------|------------------|----------------------|-----------------|--------------------|
| (16) | xłop je zdrów | the man is healthy | kwoś je pełen | the basket is full |
| | mama je zdrowa | Mom is healthy | bečka je pełna | the barrel is full |
| | zeckwo je zdrowo | the child is healthy | řešoto je pełno | the sieve is full |

There are also, however, some adjectives which only have short forms (in the nominative and accusative cases): these can be used both attributively and predicatively. Among these are the number *jeden, jedna, jedno* ‘one (m,f,n)’, the past participle (e.g. *padat, padata, padato* ‘fell (m,f,n)’, and various possessive adjectives exemplified in (17).

- | | | |
|------|--|------------------------------|
| (17) | mwoj brat, mwoja sostra, mwoje pwole | my brother, sister, field |
| | naš brat, naša sostra, naše pwole | our brother, sister, field |
| | tatov brat, tatova sostra, tatovwo pwole | Dad’s brother, sister, field |
| | mamin brat, mamina sostra, mamino pwole | Mom’s brother, sister, field |

VERBS

Kashubian verbs agree with their subjects in number (singular versus plural), person (first, second and third) and formality (2s only). The *-l* (past active) participles used in past tense forms also agree with their antecedents in gender (masculine, feminine, neuter). Inflectional forms expressing present tense²⁹ are given in (18a), those expressing past tense in (18b).

(18) a. present tense forms (imperfective verbs)

verbs: *bæc* 'to be', *piisac* 'to write', *sezec* 'to sit', *čatac* 'to read', *jesc* 'to eat'

1s ³⁰	jā jem, piišā, sezā, čatom, jem
2s, inf	tə jes, piišeš, seziš, čataš, ješ
2s, for	və jesce, piišece, seziće, čataće, jèce
3s (m,f,n)	won/wona/wono je, piiše, sezi, čatā, jè
1p	mə jesmə, piišemə, sezimə, čatomə, jemə
2p	va jesta, piišeta, sezita, čata, jeta
3p (mp,oth)	wori/wone sō, piišō, sezō, čatajō, jezō

(18) b. past tense forms³¹

1s	jā (jem) čatał (m) / čatała (f) OR jā móm čatóni
2s, inf	tə (jes) čatał (m) / čatała (f) OR tə maš čatóni
2s, for	və (jesce) čatalə (m) / čatałə (f) OR və máce čatóni
3s, m	won (je) čatał OR won má čatóni
3s, f	wona (je) čatała OR wona má čatóni
3s, n	wono (je) čatało OR wono má čatóni
1p	mə (jesmə) čatalə (m,m+f) / čatałə (f) OR mə mómə čatóni
2p	va (jesta) čatalə (m,m+f) / čatałə (f) OR va máta čatóni
3p, mp	worí (sō) čatalə OR wori majō čatóni
3p, oth	wone (sō) čatałə OR wone majō čatóni

²⁹ As in other Slavic languages, only imperfective verbs can express present tense; when the same inflectional morphemes are used with perfective verbs, they are interpreted as expressing future tense.

³⁰ Pronouns are used in written Kashubian but are often omitted (particularly the third person pronouns) in colloquial speech when pragmatically possible.

³¹ The use of *bæc* as an auxiliary in past tense forms is archaic in spoken Kashubian, although it is sometimes used by writers. The formation of past tense forms with *miec* and (passive) *-ón* participles is much less common than use of the (active) *-ł* participles. The contraction of word-final *-ata*, *-āta* to *-a* and *-ā* is common except in the South.

Verb forms expressing the pluperfect and future tenses as well as the irrealis mood can all be formed by combining the *-t* participles given in (18b) with forms of the verb *bəc*. The only other verbal paradigm with non-compound forms is that of the imperative mood, exemplified in (19) with the verbs given above.

(19)	2s, inf	<i>bāz(ə)/bōz(ə), piiš(ə), sez(ə), čətáj, jez(ə)</i> ³²
	2s, for	<i>bāz(ə)cə/bōz(ə)cə, piiš(ə)cə, sez(ə)cə, čətájca, jez(ə)cə</i>
	1p	<i>bāz(ə)mə/bōz(ə)mə, piiš(ə)mə, sez(ə)mə, čətájmə, jez(ə)mə</i>
	2p	<i>bāz(ə)ta/bōz(ə)ta, piiš(ə)ta, sez(ə)ta, čətájta, jez(ə)ta</i>

1.3 Optimality Theory

The analysis presented in this thesis is couched in terms of Optimality Theory, hereafter OT, an output-based theory of linguistics initiated by Prince & Smolensky (1993) and further developed by McCarthy & Prince (1993a, b, 1994, 1995) and others.

1.3.1 General principles of OT

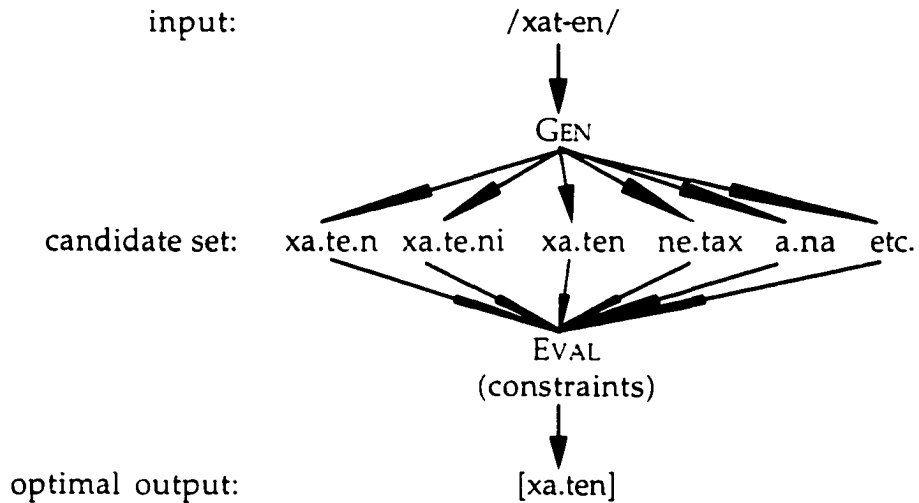
As an output-based theory, OT is concerned primarily with constraining the range of possible forms so that only the attested forms surface.

An Optimality-Based Grammar consists of a generator (GEN) that associates an input form with the set of all structurally well-formed output forms, and an evaluation component (EVAL) that compares each candidate

³² When the alternative without suffix-final *ə* is chosen, final devoicing of obstruents occurs word-finally and before voiceless obstruents. This is sometimes accompanied by a vowel alternation, with a light vowel appearing in open-syllable stems and a heavy vowel appearing in closed-syllable stems. In many dialects, the suffix *-áj* is pronounced [-é] and the suffix *-ij* [i].

with a set of ranked and violable constraints and selects the candidate which best respects the highest ranking constraints as the output form. This can be represented schematically as in (20).

(20) A schematic of OT (figure 1.13 in Archangeli 1997)



The constraints are, in principle,³³ universal and available in all grammars, but their ranking is language-specific. In this way, OT accounts for the universality of language (a common set of constraints) and language variation (different ranking of the constraints). The evaluation procedure, Prince & Smolensky (1993), hereafter P&S, have argued, can, in principle, be serial, but in practise all OT work assumes that all candidates are simultaneously evaluated over the entire constraint set, and some studies (e.g. McCarthy 1999) have shown that serial evaluation leads to incorrect results.

To exemplify the evaluation of a candidate set and the descriptive

³³ The universality of the constraint set is an important feature limiting the power of OT, but there are clearly some constraints, in particular morpheme-specific constraints, which must be language-specific (Russell 1997:120). For this reason, the use of universal constraints is always preferred, but sometimes the use of language-specific constraints is also necessary.

formalisms used in OT, let us take four constraints whose effects are commonly found in the languages of the world and define them as in (21).³⁴

(21) Constraints A, B, C and D

A	All syllables should be open
B	All segments of an input form should appear in the output
C	Only segments found in the input should appear in the output
D	Segments must appear in the output in the same order as in the input

Now given an input form /kat/, it is apparent that not all four constraints can be satisfied. If one constraint is to be satisfied, then at least one of the other constraints must be violated: the constraint which is satisfied is then said to dominate the constraints which are violated. In a language where Constraint A dominates Constraints B, C and D – formulaically expressed, $A \gg B, C, D$ – the input /kat/ cannot surface as [kat]. How it *does* surface can only be determined by comparing the constraints with relevant alternatives.³⁵ In OT, it is customary to do this in tableau form, as in (22).

(22) $A, C, D \gg B$

/kat/	A	C	D	B
kata		*!		
kat	*!			
kta			*!	
ka				*

³⁴ In the terminology of Optimality Theory these constraints are NO-CODA (25), MAX (28), DEP (28) and LINEARITY respectively.

³⁵ For the sake of simplicity, only a limited number of alternatives are examined here, however, GEN derives many other candidates from /kat/, including those ruled out by other constraints, such as [pa], and those with multiple violations of constraints A, B, C and D, such as [akt], [a] and [katat] – all other things being equal, a candidate with two violations of a certain constraint is less optimal than a candidate with one violation of that same constraint.

Here, the dominance relation $A, C, D \gg B$ determines that the input /kat/ has the optimal (surface) form [ka], indicated by the pointing hand (☞), because although it violates Constraint B, indicated by an asterisk (*), it does not violate Constraints A, C or D. The form [kata] avoids a violation of Constraint A by parsing the input-final consonant as the onset to an epenthetic vowel, but its violation of Constraint C is “fatal”, indicated by an exclamation sign after the relevant asterisk, and consideration of other constraints is irrelevant, indicated by their shading. The input-true form [kat] is ruled out by its violation of Constraint A, and the metathesized form [kta] is ruled out by its violation of Constraint D. Since violation of any of Constraints A, C and D is unacceptable, they cannot be ranked relative to each other in this example; for this reason, they are separated by dotted lines. Since Constraint B can, however, be violated in order to satisfy Constraints A, C and D, it must be dominated by them and is, therefore, separated from them by a solid line.

1.3.2 Constraints

As argued by Kager (1999: 9), OT recognizes two (main) types of constraints: *Markedness* constraints and *Faithfulness* constraints. These will be explored in the following sections.

1.3.2.1 Markedness

Markedness constraints require output forms to conform to a certain ideal of universal well-formedness, which could be equated with the principle of effort minimization which Kirchner (1998) calls LAZY.

Specifically, this principle militates against the existence of structure and is encoded in its most general form by the constraint *STRUC (23), which any form violates by its very existence.

- (23) *STRUC (Kager 1999: 404)
(Have) No Phonological Structure

Less extreme manifestations of this principle are encoded by the constraint *COMPLEX (24), which disallows complex syllable margins, and constraints disallowing specific segments and features.

- (24) *COMPLEX (P&S, 87)
No more than one C or V may associate to any syllable position node.

The interleaving of the latter with faithfulness constraints defines the phoneme inventories and the placement of phonemes. If a certain phoneme appears in a given surface form, for example, the phoneme /k/ in the Kashubian word *kʷoto* 'wheel', then the constraint requiring parsing of that phoneme must dominate the constraint requiring its non-existence (*k) in this language, whereas if a certain phoneme, for example the phoneme /θ/, never appears in the surface forms of Kashubian, then we can be sure that, in this language, the constraint forbidding it (*θ) dominates any constraint requiring its existence.

Markedness constraints may also restrict or entirely prevent the occurrence of certain phonemes or features in certain positions; on the other hand, markedness may also require the cooccurrence of two or more features. Examples of the former might be such constraints as *[ŋ] (Kager 1999: 241)

which prevents the appearance of [ŋ] in any syllable onset, and *V_{NASAL} (Kager 1999: 28), which prohibits nasalized vowels: English has neither syllable-initial ŋ nor (phonemically) nasalized vowels, so both these constraints must be undominated in the language. An example of markedness enforcing cooccurrence of features would be a constraint requiring sonorants to be voiced, also undominated in English.

In addition to ensuring that limitations of inventory and phonotactics are respected, Markedness enforces broader universals of structure reflecting such facts as (1) onsets are allowed in all languages and required in many, (2) all syllables have nuclei, (3) codas are required in few languages and prohibited in many and (4) the segments in syllable nuclei are (almost) always more sonorous than those in adjacent onsets and codas. The Markedness constraints formulated to account for these facts are given in (25).

- (25) ONSET (P&S, 85)
Syllables must have onsets.
- NUC (P&S, 87)
Syllables must have nuclei.
- NO-CODA (P&S, 85)
Syllables must **not** have a coda.
- POSS-NUC(π_{NUC}) (P&S, 168)
Segments with sonority less than a given, language-specific value (π_{NUC}) may not be parsed as syllable peaks.
- POSS-MAR(π_{ONS}) (P&S, 168)
Segments with sonority greater than a given, language-specific value (π_{ONS}) may not be parsed as margins.

Other relevant Markedness constraints which operate on the level of prosodic

units include the constraints FTBIN and RHTYPE=T (26), which define the parameters of foot form for Kashubian.

- (26) FTBIN (P&S, 47)
 Feet are binary at some level of analysis (μ , σ).
 RHTYPE=T (P&S, 53)
 Feet have initial prominence.

1.3.2.2 Faithfulness

Whereas Markedness constraints provide a common phonological basis for all languages, being grounded in typological universals and various properties of articulation and perception, Faithfulness constraints provide for a diversity of form, ensuring the transmission of information from speaker to hearer through the preservation of structure. Faithfulness of parsing in OT is instantiated by a set of constraints on corresponding segments, whereby the notion of correspondence is defined as in (27).

- (27) Correspondence (McCarthy & Prince 1995: 14, 1999: 223)
 Given two strings S_1 and S_2 , **correspondence** is a relation \mathfrak{R} from the elements of S_1 to those of S_2 . Elements $\alpha \in S_1$ and $\beta \in S_2$ are referred to as **correspondents** of one another when $\alpha \mathfrak{R} \beta$.

The most commonly encountered constraints on correspondence are defined in (28). Others will be discussed as needed – for more details see McCarthy & Prince 1995, 1999.

- (28) MAX “No Deletion of Elements”
 Every element of S_1 has a correspondent in S_2 .
 DEP “No Addition of Elements”
 Every element of S_2 has a correspondent in S_1 .
 IDENT(F) “No Feature Changes”
 Correspondent segments have identical values for the feature F.

Such constraints can be used to regulate not only input-output correspondence – their use in this thesis – but also correspondence in reduplication, truncation and grammatical paradigms. In most OT studies, the corresponding elements affected by these constraints are segments, but the correspondence of moras, syllables, feet, heads, tones, features and feature class nodes can be constrained in the same way.

A subclass of the Faithfulness constraints³⁶ to which particular attention will be given in this dissertation is that of the Alignment constraints.

1.3.2.3 Alignment

Alignment constraints, like other Faithfulness constraints, preserve lexical contrasts, but they do this by positioning various units in relationship to other units.

All Alignment constraints have a common formalism, stated by McCarthy & Prince (1993b: 80) as in (29) under the name of Generalized Alignment.

(29) Generalized Alignment

$$\text{Align}(\text{Cat1}, \text{Edge1}, \text{Cat2}, \text{Edge2}) =_{\text{def}}$$

$$\forall \text{Cat1} \exists \text{Cat2} \text{ such that Edge1 of Cat1 and Edge2 of Cat2 coincide.}$$

Where

$$\text{Cat1}, \text{Cat2} \in \text{PCat} \cup \text{GCat}$$

$$\text{Edge1}, \text{Edge2} \in \{\text{Right}, \text{Left}\}$$

Under this definition, an Alignment constraint can compel, for example,

³⁶ Alignment constraints are considered by Sherrard (1997) to constitute a separate category of constraints on a par with Markedness and Faithfulness.

every PrWd to begin with a foot; this is ALIGN-WD-LEFT.

(30) ALIGN-WD-LEFT (Kager 1999: 169)

Align (PrWd, Left, Ft, Left)

ALIGN-WD-RIGHT (Kager 1999: 169)

Align (PrWd, Right, Ft, Right)

A language which ranks this over a competing constraint, such as ALIGN-WD-RIGHT, will – in combination with a high ranking of RHTYPE=T (26) and FT-BIN (26) – have word-initial stress, as shown in (31).

(31) ALIGN-WD-LEFT >> ALIGN-WD-RIGHT

/σ σ σ/	ALIGN-WD-LT	ALIGN-PRWD-RT
$[[\acute{\sigma} \sigma] \sigma]$		*
$[\sigma (\acute{\sigma} \sigma)]$	*!	

Alignment constraints are of particular importance in the description of stress assignment, but can also have a bearing on syllable structure, as will be seen throughout the dissertation.

1.3.3 OT and the Lexicon

Since Optimality Theory is a surface-based theory, assumptions about input forms must be severely limited. This aspect of the theory, called *Richness of the Base* by (P&S 1993: 191), forces theoreticians to be open-minded about possible input representations for any form.

Balancing *Richness of the Base* is the principle of *Lexicon Optimization*, also introduced by (P&S 1993: 192). *Lexicon Optimization* examines the parses of different inputs as to their relative harmony and chooses those which incur the fewest violations of the highly ranked

constraints of the language. In this way, input forms violating highly ranked constraints do not need to be considered either by the analyst or the language learner. For example, if every [+low] vowel in the surface forms of a given language is [-round], Lexicon Optimization will always give preference to input forms of that language with an unrounded low vowel such as [æ], [a] or [ɑ] over input forms with a rounded low vowel such as [ɒ], so that it would be superfluous to take the latter input forms into consideration when determining the optimal output form of a given lexical item.³⁷

1.4 Dissertation Outline

My analysis of the syllable structure of Kashubian is divided into three chapters, each corresponding to one part of the syllable. Chapter Two examines the structure of the Kashubian onset, and Chapter Three the structure of the Kashubian coda, while Chapter Four discusses alternations in the syllable peak or nucleus of Kashubian.

This section gives a brief presentation of the claims about Kashubian phonology to be examined in this dissertation.

1.4.1 Chapter Summaries

Chapter Two, *The Structure of the Kashubian Onset*, has four sections, each focussing on a different aspect of Kashubian onset phonology.

2.1 *Zero and prosthetic onsets*

Kashubian strongly prefers each syllable to have an onset, and does not

³⁷ Archangeli & Langendoen (1997:201ff) give a detailed discussion of such an example in the context of American English.

grant exceptional status to the initial syllable of a Prosodic Word. Nevertheless, only the feature Labial is sufficiently prominent in Kashubian to overcome resistance to the epenthesis of a segment, so that only prothesis of [w] is allowed.

2.2 *The Constituency of Complex Onsets*

Kashubian has many onsets which violate the Sonority Sequencing Generalization under the strict interpretation proposed by Selkirk (1984) and Steriade (1982), but many violations can be eliminated through adoption of Morelli's (1997) constraints on stop-fricative combination and the understanding that /v/ has the sonority of a glide. Other apparent violations of the SSG are accounted for if Kashubian allows stem-initial sonorants to be directly prosodified under the Prosodic Word, while evidence is given suggesting that an analysis along the lines of the Rubach (1997) account of initial trapped sonorants in Polish, which entails true violation of the SSG, is not appropriate for Kashubian.

2.3 *Onset-Nucleus Interaction*

Intrasyllabic harmony of place features is actively promoted in Kashubian, but only the feature Labial is sufficiently prominent in contemporary Kashubian to overcome resistance to the addition of secondary features, and coronal(ized) consonants cannot bear secondary labialization. Coronal harmony is no longer productive and must now be considered morphologically determined in Kashubian, but there are phonological limitations on the appearance of consonants with secondary palatalization as well.

2.4 Voicing Assimilation in Complex Onsets

Regressive Voicing Assimilation: In Kashubian onset clusters, most obstruents adopt the voicing specification of the rightmost obstruent in the cluster, while sonorants neither undergo voicing assimilation nor trigger it. This is accounted for by assuming that the input form of obstruents contains voicing specification while that of sonorants does not. Regressive voicing assimilation reflects the fact that only the position immediately preceding a sonorant is sufficiently salient to license the preservation of a voicing specification given in the input. The neutral behaviour of the sonorants is attributed to their lacking an input voicing specification, but the ambiguous behaviour of the obstruentized sonorants /v/ and /ʃ/ remains problematic for the Lombardi model of voicing assimilation adopted here.

Progressive Voicing Assimilation: Progressive devoicing in Kashubian applies regularly to /ʃ/, although it affects /v/ only sporadically. This is attributed to satisfaction of a constraint requiring /ʃ/ to be sensitive to the voicing of the preceding segment.

Chapter Three, *The Structure of the Kashubian Coda*, focusses on two aspects of Kashubian coda phonology.

3.1 Coda Constituency

Word-final clusters: Kashubian allows complex clusters word-finally, but, with few exceptions, it does not allow even superficial violations of the SSG in these clusters. This can be accounted for if satisfaction of a

constraint aligning lexical items with a syllable at the right edge outweighs the cost of inserting an epenthetic vowel.

Medial clusters: In general, all word-medial consonants are syllabified in the onset to the following vowel in Kashubian, reflecting the strong preference for open syllables found in all Slavic languages. Under certain circumstances, however, a consonant may be syllabified in the coda to the preceding vowel. First, a prefix-final consonant is syllabified with the preceding vowel to avoid syllabification across the prefix-stem boundary. Second, cluster-initial sonorants are syllabified in the coda of the preceding vowel to prevent sonority violations, and finally, the initial obstruent of a heavy cluster may be syllabified in the coda of the preceding vowel. Prosodifying a word-medial consonant directly under the Prosodic Word is avoided in Kashubian, but evidence suggests that this is nevertheless done when it is otherwise impossible to have both a well-formed onset and a well-formed coda.

3.2 *Final Coda Simplicity*

Kashubian codas show greater featural simplicity than onsets with respect to both secondary articulation and voicing. First, obstruents and obstruentized sonorants cannot be voiced in coda position unless followed by a voiced obstruent. This suggests that featural identity for voicing features is given higher priority in onset position than elsewhere and that regressive voicing assimilation has priority over general voice markedness. Second, non-promoted secondary articulators are disallowed

in coda position, and since labial consonants cannot promote a secondary coronal articulator specified in input, they must lose it when in coda position. This is seen as the effect of a general constraint against the appearance of secondary features the effects of which onset, but not coda, consonants are protected against.

Chapter Four, *The Structure of the Kashubian Nucleus*, focusses on three aspects of Kashubian syllable peak phonology.

4.1 *Vowel Raising*

While the distribution of closed vowels in Kashubian is such that they must be present in the vowel inventory, there are certain contexts where they are clearly preferred. Some of these contexts can be morphologically defined, but there is also a phonological context in which closed vowels are preferred, namely before an underlyingly voiced consonant closing a word-final syllable. This is accounted for by positing that coda consonants in words with final-syllable raising are lexically specified with a mora but the language as a whole does not allow moraic consonants in surface forms: mora preservation then associates the lexically specified mora with a tautosyllabic vowel.

4.2 *Vowel-Zero Alternations*

Kashubian has a number of contexts where vowel- \emptyset alternation is found. This thesis argues that this alternation can be accounted for by assuming that these vowels are latent segments in the sense of Zoll (1996). The grammar of Kashubian requires them to be parsed, but since this can only

be accomplished at the expense of a constraint militating against the addition of information not contained in the input, parsing of these latent segments is allowed only to ensure the non-violation of higher ranking constraints requiring the faithful parsing of input segments and alignment of the right edge of each stem with the right edge of a syllable.

4.3 *Minor syllables*

Kashubian also has one context where a very brief, unstressable vowel appears. The qualities of this vowel can be accounted for if it is analysed as a crescent vowel inserted to ease the pronunciation of a liquid which is allowed to be syllabic to prevent the existence of an otherwise heavy, unsyllabifiable onset cluster.

Chapter 2 The Structure of the Kashubian Onset

2.0 Introduction

As Bethin (1998) has demonstrated, many of the problems which have occupied students of Slavic phonology throughout the past century can be productively examined in the light of syllable structure. These include the constituency of consonant clusters, both vocalic and consonantal alternations, and the expression of prominence. This chapter focusses on the problems of constituency and alternations in the initial part of the Kashubian syllable, the onset.

In the production or recognition of any syllable, the part first encountered is the pre-vowel domain, or *onset* (for example, the initial cluster
 in the Kashubian word *brat* 'brother'). Although Slavic onsets may not have attracted as much attention as the Slavic nucleus, it is clear they are subject to several restrictions of theoretical interest. First, there is a general, although not absolute, requirement in the Slavic languages that each syllable have at least one onset element such that the appearance of vowel-initial syllables is highly constrained (Bethin 1998). Second, complex onset clusters are allowed which seem to violate the Sonority Sequencing Generalization originally argued to be true of all languages (Selkirk 1984). Third, the featural constituency of Slavic onsets has been (Bethin 1998: 34-38) and continues to be (Zubritskaya 1995) under the influence of intrasyllabic harmony which constrains onset segments to share the place features of the

vowels following them. Finally, there is a strong tendency towards uniform voicing within onsets, but sonorants behave differently than obstruents with respect to voicing, with obstruentized sonorants (particularly /v/) showing behaviour intermediate between that of obstruents and sonorants as noted in Czekman & Smuřkowa 1988 for Belorussian, Bethin 1992 for Polish, Pulkina 1987 for Russian, and Kráľ 1984 and Rubach 1993a for Slovak.

In this section, the facts of Kashubian are examined with respect to the above mentioned topics, whereby a number of claims are made. These are (1) Kashubian prefers each syllable to have an onset but can force consonantal prothesis only if the syllable-initial vowel is [+labial], (2) Kashubian syllables do not violate the Sonority Sequencing Generalization, but stem-PrWd alignment does produce stem-initial clusters superficially violating the SSG, (3) onset segments must agree with the following nucleus with respect to the feature [labial] unless coronal or palatalized, (4) palatal-nonpalatal alternation is morphologically determined in Kashubian, but there are phonological limitations on its occurrence, and (5) obstruent clusters agree in voicing, with the rightmost obstruent determining the voicing of the cluster, but voicing assimilation neither affects nor is triggered by sonorants, while /v/ and /ř/ take an intermediate position, being subject to regressive voicing assimilation but not triggering it, and /ř/ also subject to progressive devoicing.

2.1 Zero and Prothetic Onsets

Comparing the Slavic languages with related Indo-European languages

– supporting her argument with data such as those in (32) as well as earlier work by Shevelov (1963) and Arumaa (1964) – Bethin (1998: 30-32) has argued that Common Slavic developed a requirement that all syllables have an onset, reflecting a high ranking of the universal constraint ONSET (25) which requires all syllables to have an onset.³⁸

(32)	English	otter ¹	up ²	is	eat
	Greek	hydra	hypselos	esti	edo
	Sanskrit	udrah		asti	atti
	Slovene	vidra	visok	je	jesti
	Russian	vydra	vysokij	jest'	jest'
	Polish ³⁹	vidra	visokji	jest	jeść
	Kashubian	vǫdra	vǫsoči	je	jesc

1 = means 'otter' in all languages but Greek, where it means 'water snake'

2 = means 'high' in all languages but English

2.1.1 Onset-less words in Slavic

All Slavic languages, including Kashubian, share the inherited preference for all syllables to have an onset, yet they all allow vowel-initial syllables as well, some more than others. All Slavic languages have at least some borrowed words with vowel-initial syllables, as exemplified in (33).

³⁸ Apparently, consonantal prothesis was consistent only before high vowels, applying before mid and low vowels only later and with varying results in the different Slavic languages. Bethin (1998:33-34) discusses these facts but offers no explanation.

³⁹ For ease of comparison, Polish forms are given in the same broad phonetic transcription used here for Kashubian; ś is a alveolo-palatal fricative. Bulgarian and Russian examples are orthographic forms given in standard Slavist transliteration.

(33)		<i>Bulgarian</i>	<i>Russian</i>	<i>Polish</i>	<i>Kashubian</i>
American (adj)	amerikanski	amerikanskij	amerikański	amerikański	
bus	avtobus	avtobus	awtobus	owtobwus	
electric	električeski	električeskij	električni	elektrišovi	
gospel	evangelie	evangelie	evangelja	evańelja	
engineer	inžener	inžener	inżińer	inżińera	
interesting	interesno	interesnyj	interesujōci	interesovni	
officer	oficer	oficer	oficer	woficera	
organist	organist	organist	organista	worganista	
university	universitet	universitet	universitet	wuniversitet	

It might be claimed that these words do not accurately reflect the phonology of the borrowing languages since they might not have been fully integrated into the phonology of these languages yet, but this seems an inadequate explanation given the fact that all Slavic languages also have some vowel-initial conjunctions (34a) and most have vowel-initial prepositions (34b).

(34)		<i>Bulgarian</i>	<i>Russian</i>	<i>Polish</i>	<i>Kashubian</i>
a.	and	a	a	a	a
	or	ili	ili	albo	abwo
	but	ala		ale	ale
	and	i	i	i	ə ⁴⁰
	if	ako	jesli	jeżeli	əżlə
b.	about		o	o	wɔ
	around	okolo	okolo	około	(kole)
	from	ot	ot	od	wɔd
	at	u	u	u	wu

It might also be argued that ONSET does not affect function words, but this too seems an inadequate explanation given that most Slavic languages have a number of vowel-initial pronouns (35a) and vowel-initial native roots (35b).

⁴⁰ This conjunction also appears as *i*, which is usually pronounced *ji* phrase-initially.

(35)		<i>Bulgarian</i>	<i>Russian</i>	<i>Polish</i>	<i>Kashubian</i>
a.	3p.D		im	im	jim
	3p.G/A		ix	ix	jix
	3s.m.N		on	on	won
	3s.m.N		ona	ona	wona
	3p.mp.N		oni	ońi	wońi
b.	needle	igla	igla	igła	jigła
	name	ime	im'a	imiē	jimiā, (ji)miono
	eye	oko	oko	oko	wokwo
	eight	osem	vosem'	ošem	wosmā
	to teach	uči	učit'	učić	wučic
	science	na-uka	na-uka	na-uka	nā-wuka
	ear	uxo	uxo	uxo	wuxwo

The general observation that syllables must have onsets in Slavic can be reconciled with the facts presented in (33)-(35), because the appearance of vowel-initial syllables in native Slavic words is limited to the word- and root-initial positions. Since research has shown that prefixes attach to a prosodic word in Slavic, both positions can be characterized as PrWd-initial positions, and Zubritskaya (1995: 45) has shown that onset-less syllables occur in precisely this position because of high ranking ALIGN-L, defined as in (36).

(36) ALIGN-L (Zubritskaya 1995: 40)

The left edge of a stem (root) must coincide with the left edge of a Prosodic Word: Align (Stem, L, PrWd, L).

This is demonstrated for the Polish word *oko* 'eye' in tableau (37), where the output form [oko] is preferred by the grammar over the form [woko] because the former respects the higher ranking constraint ALIGN-L, even though it also violates ONSET.

(37) ALIGN-L >> ONSET

Polish: /oko/	ALIGN-L	ONSET
oko		*!
woko	*	

2.1.2 Onset-less words and prothetic onsets in Kashubian

Kashubian differs from most other Slavic languages⁴¹ in disallowing certain vowel-initial syllables that other Slavic languages allow. Vowel-initial stems are only found in (i) interjections (38a), which may not be subject to the phonological restrictions placed on true (lexical or functional) words, (ii) conjunctions (38b; compare with 34a), which cannot constitute Prosodic Words by themselves and are generally not PrWd-initial, and (iii) borrowings (38c; see also 33).⁴²

- (38) a. *some vowel-initial interjections*
- | | | | |
|-------|---------------|------|---------------|
| ala ! | hey ! | ox ! | oh [surprise] |
| ix ! | oh [negative] | oj ! | oh [pain] |
- b. *some vowel-initial conjunctions*
- | | | | |
|------|-----|------|-----|
| abwo | or | ə | and |
| ale | but | əzlə | if |
- c. *some vowel-initial (some optionally h-initial) borrowings*
- | | | | |
|---------------|---------------|--------------------|-----------|
| administrador | administrator | arıdel ~ harıdel | trade |
| antena | antenna | arbata ~ harbata | tea |
| artista | artist | arfa ~ harfa | harp |
| erbovac | inherit | eltka ~ heltka | crabapple |
| infinitif | infinitive | ərłəkac ~ hərłəkac | cry out |

⁴¹ Like Kashubian, Sorbian eschews vowel-initial words in native vocabulary, however, Sorbian freely allows vowel-initial forms in borrowings.

⁴² Prothetic /w/ is seldom transcribed before word-initial /o/, perhaps because the articulation of the two is very similar, however both Gołębek (1997:42) and Wosiak-Śliwa & Cybulski (1992:11) state that word-initial /o/ is often preceded by /w/, and Breza & Treder (1981:44) note that in the south-west dialects, where all [+labial] vowels are derounded, prothetic /w/ is consistently found before word-initial /o/.

It is tempting to ascribe the lack of prothesis in the borrowings to their recent appearance in the lexicon, but doing so would miss an important generalization: Kashubian borrowings corresponding to vowel-initial forms in the other Slavic languages consistently add a prothetic [w] to initial rounded vowels but only the oldest borrowings⁴³ have a prothetic consonant, usually [j], before a non-rounded initial vowel as exemplified in (39).

(39) Old borrowings with prothetic consonant before non-round vowel

jadam	Adam ⁴⁴
wáltář	altar
jeva	Eve
jignac	Ignatius

Just as borrowings with a PrWd-initial vowel surface in the source language appear in Kashubian with an initial [w], so do all native words whose cognates in other Slavic languages have an initial rounded vowel, as exemplified above in (35), suggesting a regular prothesis of [w] in Kashubian. A comparison of the Kashubian examples in (35) with their Slavic cognates might suggest that [j] appears prothetically before high front vowels, but this is problematic since (a) borrowings with PrWd-initial high front vowel do not (regularly) appear in Kashubian with a prothetic [j], and (b) the presence of a consonantal prefix before a j-initial stem as in *zjinačæc sã*, the perfective aspect of the verb *jinačæc sã* 'to change' (< *jini* 'different' [cp. Polish *inni* 'different'])

⁴³ The North Kashubian dialects are less accepting of vowel-initial words than other dialects, often adding a prothetic [h] to borrowings other dialects leave vowel-initial.

⁴⁴ Gołębek (1997) approves of the j-initial form of the names in (39) as well as alternatives lacking a prothetic consonant, although he explicitly advises against the written use of most forms occasionally used with prothetic j or h dialectally.

does not make the [j] redundant.⁴⁵ Together, these two facts suggests that while j-prothesis probably once was productive in Kashubian, it is no longer active; the same is true of Czech (Rubach 2000: 297).

The regular prothesis of [w] before PrWd-initial rounded vowels suggests that in Kashubian ONSET dominates ALIGN-L, so another explanation must be found for the lack of a prothetic consonant before PrWd-initial unrounded vowels.⁴⁶ This explanation can be found in the appropriate ordering of the markedness constraints militating against the appearance of the various place features, defined in (40), *vis à vis* the Markedness constraint ONSET (25) and the Faithfulness constraints DEP (28) and MAX (28).

(40) *LABIAL

A segment must not be associated with the feature Labial.

*CORONAL

A segment must not be associated with the feature Coronal.

*DORSAL

A segment must not be associated with the feature Dorsal.

Any instance of prothesis necessarily violates the constraint prohibiting the insertion of elements, DEP, but in OT the violation of a constraint is acceptable if this leads to the satisfaction of a higher ranking constraint: here, the violation of DEP allows the satisfaction of ONSET, so

⁴⁵ This is also true of those dialects of “rural Polish” which, Rubach (2000) claims, have prothetic [j]. Rubach uses this fact to argue for a derivational OT, claiming that the prothesis of [j] applies at a level intermediate between the UR and the surface form.

⁴⁶ Borrowings with apparent j-prothesis, as shown in (39), are among the oldest loan words in Kashubian. Following Itô and Mester (1995), it might be claimed that a constraint order promoting j-prothesis before PrWd-initial high front vowels holds for the oldest layer of the Kashubian lexicon and a constraint order disallowing it holds for younger layers, but checking the accuracy of this account is impossible given the meagre historical documentation for the development of the Kashubian lexicon.

ONSET must dominate DEP, as shown in tableau (41), where the output [woko] wins out over [oko] as a parsing of the input form /oko/.

(41) ONSET >> DEP

/oko/	ONSET	DEP
oko	*!	
☞ woko		*

Deleting an input element to satisfy both ONSET and DEP does not produce a successful parse, so both must be dominated by the constraint prohibiting the deletion of input segments, MAX. This is shown in (42), where the first candidate is eliminated by MAX, and the second by ONSET as in (41).

(42) MAX >> ONSET >> DEP

/oko/	MAX	ONSET	DEP
ko	*!		
oko		*!	
☞ woko			*

The choice of prothetic consonant is determined by featural agreement with the following vowel and whether it is possible to insert the various features. To deal with the latter issue first, it may be observed that inserting prothetic [w] satisfies ONSET while at the same time creating a violation of *LABIAL. In OT this is expressed by having the former dominate the latter as in (43).

(43) ONSET >> *LABIAL

/oko/	ONSET	*LABIAL
oko	*!	
☞ woko		***

Here, the second candidate is optimal, even though it has a greater number of

*LABIAL violations; violations caused by the faithful parsing of labial elements in the input form must be tolerated because of the dominance of MAX. Since the insertion of prothetic [w] violates both DEP and *LABIAL equally, it is impossible (at this point) to determine their relative ranking.

ONSET is able to force the insertion of only a prothetic labial glide in Kashubian, so the constraints *CORONAL and *DORSAL must dominate ONSET, as shown in (44), where the first and second candidates are ruled out because they each incur one violation of *CORONAL and *DORSAL.

(44) Max >> *CORONAL, *DORSAL >> ONSET >> *LABIAL

/oko/	MAX	*CORONAL	*DORSAL	ONSET	*LABIAL
joko		*!	***		
ɯoko			****!		
woko			***		
ko	*!		**		

There is no apparent reason to rank either *CORONAL or *DORSAL more highly than the other; this is indicated by the dotted line separating them. On the other hand, input segments specified with the feature Coronal or Dorsal can be successfully parsed as such, so MAX must be ranked higher than both *CORONAL and *DORSAL. For this reason, the fourth candidate in (44) fails: it satisfies *DORSAL better than the other candidates (while remaining a viable word of Kashubian) but violates MAX.

The low ranking of *LABIAL in Kashubian is surprising given the claim of Prince & Smolensky (1993: 181-190) that *CORONAL is universally lower ranked than *LABIAL. It is true for many languages that if the “language has a

complex segment with secondary place Lab[ial] and primary place π , then it has a complex segment with secondary place Cor[onal] and primary place π " (P&S, 186),⁴⁷ but there are many languages with labialized velars but no coronalized velars. Thus, while it is certainly unusual that a language would allow labial epenthesis but not coronal epenthesis, it must be considered possible, and this is what the facts of Kashubian attest.

The constraint ranking *CORONAL, *DORSAL >> *LABIAL is reflected not only in the productivity of labial prothesis and the non-viability of coronal and dorsal prothesis, but also in the interaction between vowels and their preceding onsets. It is because of this agreement between an onset and the following vowel that it is impossible to supply input forms having an initial non-rounded vowel, such as *artista* 'artist', with a prothetic labial glide. A number of proposals in OT have been made to account for onset-nucleus feature agreement. Early proposals such as Itô & Mester (1993) tried to account for agreement merely by delimiting the domain in which it occurs (the initial demi-syllable) but, as Zubritskaya (1995: 75) points out, this is insufficient since the spreading of vocalic features onto an onset is far more common than the spread of consonantal features onto a following vowel. Thus, feature spreading in a CV domain must be vowel-headed, which Zubritskaya encodes through the constraint CV-Link, defined in (45).⁴⁸

⁴⁷ This is what P&S (p. 186) call Harmonic Completeness w.r.t. Secondary Place.

⁴⁸ Itô & Mester (1995) propose a similar constraint CVLINKAGE, defined (p.196) as follows: "Every consonant-vowel sequence forms a linked domain headed by V."

(45) CV-LINK (Zubritskaya 1995: 76)

In CV all features linked to a vowel must also be linked to a consonant.

CV-LINK dominates ONSET which dominates *LABIAL, so syllables with an initial non-rounded vowel cannot satisfy ONSET by prothesis of [w], as shown in (46) for the word *artista* 'artist'.

(46) IDENT(VPLACE) >> CV-LINK >> ONSET >> *LABIAL

/artista/	IDENT(VPL)	CV-LINK	ONSET	*LABIAL
☞ artista			*	
wartista		*!		
wortista	*!			

In the second candidate, where a prothetic [w] is added to serve as an onset to the form-initial non-rounded vowel, the vowel's Place feature (Dorsal) is not linked with the consonant preceding it, so CV-LINK is violated and since CV-LINK dominates ONSET, the candidate is rejected. The first candidate lacks an initial consonant and therefore vacuously satisfies CV-LINK: this constraint has effect only within CV. The first candidate violates ONSET, but the constraint ranking renders this of lesser importance than the satisfaction of CV-LINK, so the first candidate is preferred over the second one. A third candidate to be considered is one in which both CV-LINK and ONSET might be satisfied by adding a prothetic [w] and changing the initial vowel's Dorsal Place feature to one that can be shared with [w], Labial. The attested surface form is not [wortista], however, so this change is apparently not licit: thus, CV-LINK must be dominated by IDENT(VPLACE), defined in (47), which requires surface forms to faithfully parse the input featural specification of vowels.

(47) IDENT(VPLACE)

Correspondent segments have identical dependent feature sets under the class node VPlace.

As will be shown in section 2.3, onsets can be unfaithful to their input featural specification in order that CV-LINK be satisfied, so the member of the IDENT constraint family dominating CV-LINK must be one that applies specifically to vowels.

2.2 The Constituency of Complex Onsets

As in the other Slavic languages, the onset in Kashubian may consist of one or more consonants. All the consonantal phonemes may be found in word-initial single consonant onsets (48), although rounded and front vowels impose cooccurrence restrictions (to be discussed more in section 2.3) on their onsets, so that labial and velar obstruents must have a labial off-glide before a vowel specified for the feature Labial, and only the affricate allophones of the velar stop phonemes /k/ and /g/ can appear before front vowels.

(48) Word-initial single consonant onsets in Kashubian

	<i>manner</i>	<i>place</i>	<i>vc</i>	<i>pal</i>	<i>low vowel</i>	<i>front vowel</i>	<i>round vowel</i>			
Stops:	Lab	-	-	p	palac	to burn	peten	full	pwole	field
		-	+	pi	piäkni	pretty	piec	oven	piorun	lightning
		+	-	b	bagno	bog	bes	lilac	bwoğaç	rich man
		+	+	bi	białka	woman	bięda	poverty	biodro	hip
	Cor	-		t	tam	there	terä	now	torba	bag
		+		d	dac	to give	dęł	board	dobri	good
	Dor	-		k	kam	stone	ćelix	goblet	kwoło	wheel
		+		g	gadac	to talk	żięćię	flexible	gwożana	hour
Frics:	Lab	-	-	f ⁴⁹	farva	colour	felac	to lack	fwolvark	estate
		-	+	fj			fiirla	fledgling	fiugac	to flee

⁴⁹ This phoneme and its palatalized counterpart are only found in borrowings.

(48 ctd)		+	-	v ⁵⁰	va	you (pl)	veŋna	wool	woda	water
		+	+	vi	viara	faith	vies	village	viodro	weather
	Cor	-		s	sano	hay	sɛtmə	seven	sostra	sister
		+		z	zajc	hare	zelony	green	zolac	to soil
		-		š	šari	grey	šesc	six	šósti	sixth
		+		ž	žaloba	regret	žid	Jew	žołōdk	stomach
	Dor	-		x	xaŋəpa	hut	xixwot	giggle	xwɔzɛc	to go
	Affrics: Cor	-		c	casno	tightly	cec	to leak	cotka	aunt
		+		ʒ	ʒarna	sod	zewus	girl	ʒura	hole
		-		č	čas	time	červioni	red	čosac	to brush
		+		ʒ ⁵¹	ʒad	old man	ʒizōga	lanky guy		
	Nasals: Lab	-		m	masŋo	butter	mɛva	seagull	mʷocni	strong
		+		mi	mjaŋa	had (f)	miɛx	sack	mɔno	name
	Cor	-		n	nas	us	nen	that (m)	norda	north
		+		ni			niebʷo	sky		
	Liquids: Cor	-		ɫ	ɫamac	to break	ɫɛp	head	ɫōʒkʷo	bed
		+		l	las	forest	letkʷo	lightly	lōd	ice
		-		r	raga	old cow	reno	morning	rōg	horn
		+		ɾ	ɾaɟkʷo	rarely	ɾec	to say		
	Glide: Cor	+		j	jaɟkʷo	apple	jeden	one	juric	young bull
	Dor ⁵²	-		h	harfa	harp	heklovac	to crochet	hwulaj	bum

With high ranking ONSET and no constraint requiring syllables to have a coda, OT predicts that any single intervocalic consonant will be syllabified in the onset to the following vowel as long as that following vowel is in the same Prosodic Word. The feedback from my questionnaire on Kashubian structure (see section 1.1.2.2 and the Appendix), while not conclusive because of the small number of respondents, supports this prediction: while not

⁵⁰ Although phonetically a fricative in Kashubian, with voicing and syllabification /v/ acts somewhat (but not completely) like a sonorant. In native words, /v/ is realized as [w] before rounded vowels word-initially, and in northern dialects, word-medially.

⁵¹ This is a marginal phoneme in Kashubian, occurring only in some dozen words.

⁵² The status of [h] in Kashubian is unclear. In some dialects, it is used prothetically before syllable-initial low vowel as a non-syllabic version of /a/; hence its classification in (48) as a glide. However, there are also a number of words, most borrowed from German, where speakers use [h] before front and rounded vowels, so it is possible to argue that /h/ is a consonantal phoneme of Kashubian, albeit a marginal one.

always in perfect agreement, respondents indicated a strong preference for syllabifying a single consonant with the following vowel as shown in (49), where the relevant syllable boundaries in (49) are marked with a dot.

(49)	ba.vie.ńe	playing	spwo.kwojni	calm
	błō.ząc	to err, wander	dłu.żi	long

To my knowledge, all Kashubian phonemes can occur in single consonant word-medial onsets, with there being no systematic gaps other than those conditioned by the cooccurrence restrictions of front and rounded vowels.

As mentioned above, Kashubian allows consonant clusters in onset positions. Most possibilities found are shown in (50).

(50) Word-initial consonant clusters in Kashubian

a. *Initial obstruent-obstruent clusters*

Stop-Stop:	p-t	ptax	bird		
	t-k	tkac	to weave		
	d-b	dbac	to care for		
	g-b	gbwur	farmer		
	g-d	gdova	widow		
Stop-Affr:	t-č	tčac	to adore		
	g-ż	gże	where		
Stop-Fric:	p-s	psa	dog (G.s.)		
	p-š	pšenica	wheat		
	b-z	bzikac	to rock to sleep		
	t-v	tvardi	hard		
	d-v/vj	dva	two	dwiéfe	door
	k-s	ksōżka	book		
	k-v/vj	kwasni	sour	kviat	flower
	g-v	gvóżż	nail		
Affr-Fric:	č-v	čvarti	fourth		
Fric-Stop:	v-p	vprovażąc	to introduce		
	v-k	vkwół	around		
	s-p/pi	spwosòb	manner	spievac	to sing
	s-t	stári	old		

(50a ctd)	s-k	skōđ	whence		
	š-p	špacēr	walk		
	š-t	štərə	four		
	x-t	xtären	which		
	z-b/bj	zbwožē	cereal	zbiedniati	poor
	z-d	zdebło	straw		
	z-g	zgażac	to agree		
Fric-Affr:	v-c	vcig	constantly		
	s-c	scana	wall		
	š-č	ščestlævi	happy		
	x-c	xcec	to want		
	z-ʒ	zʒarti	torn away		
Fric-Fric:	v-s	vsə	village (G.s.)		
	v-š	všelejaći	various		
	v-z	vzic	to take		
	s-f	sfera	sphere		
	s-v/vi	svərb	scabies	sviat	world
	x-v	xvacəc	to catch		
	z-v	zvʷonic	to ring		
b. <i>Initial obstruent-sonorant clusters</i>					
Stop-Nasal:	p-n	pna	trunk (G.s.)		
	d-n/n	dno	bottom	dria	day (G.s.)
	k-m	kmʷoter	godfather		
	k-n/n	knęga	book	knipac	to hoot
	g-n/n	gnac	to rush	gniazdo	nest
Stop-Liquid:	p-t/l	płavac	to swim	plac	place
	p-r/r	prac	to wash	přinć	to arrive
	b-t/l	btōđ	error	bliskʷo	near
	b-r/r	brat	brother	břad	fruit
	t-t	tłuc	to pound		
	t-r/r	trudni	difficult	třə	three
	d-t/l	dłuzi	long	dlaće	why
	d-r/r	drəx	friend	dřec	to tear
	k-t/l	kłamelc	liar	kłon	maple
	k-r/r	krova	cow	křəvi	crooked
	g-t/l	głupi	stupid	gləna	clay
	g-r/r	grac	to play	gřib	mushroom
Affr-Nasal	c-n	cnota	virtue		
	č-m/mj	čmox	wooper	čmiel	bumble-bee
Affr-Liq	č-t	čłoviek	human		

(50b...) Fric-Nasal:	v-n	vnet	nearly		
	s-m/mj	smaržac	to stink	smiafi	bold, daring
	s-n	snāži	pretty		
	x-m/mj	xm ^w ura	cloud	xmiel	hop
	z-m/mj	zmāčoni	tired	zmiešac	to mix
	z-n	znac	to know		
Fric-Liquid:	f-l	flēta	flute		
	f-r	frištāk	breakfast		
	v-ł/l	vłaza	power	vłec	to drag
	v-r	vracac	to turn		
	s-ł/l	słabi	weak	sluḅ	wedding
	s-r	sroka	magpie		
	š-l	šlax	trace; type		
	š-r	šruva	screw		
	x-ł/l	xłop	man	xłeḅ	bread
	x-r/ř	xrexac	to cough	xřest	baptism
	z-ł/l	złomōni	broken	zlevac	to pour away
	z-r/ř	zrobic	to do (pf)	zřešenje	association

c. *Initial sonorant-obstruent clusters*

Nasal-Fric:	m-š	mša	mass		
	m-ž	mžac	to drizzle		
Liquid-Stop:	ł-b	łba	head (G.s.)		
	ł-g	łgac	to lie		
Liquid-Fric:	ł-z/ž	łza	tear	łžakviat	April
	l-v/vj	lva	lion (G.s.)	lvjā	lion cub
	r-v	rvac	to tear	rvjā	tear (1s.pr.)
	r-ž	ržec	to neigh		

d. *Initial sonorant-sonorant clusters*

Nasal-Liquid:	m-ł/l	młodi	young	młek ^w o	milk
	m-r	mroḅka	ant	mřec	to die
Liquid-Nasal:	l-ń	lńani	linen (adj)		
	ř-m	řma	hill		
Nasal-Nasal:	m-n/ń	mńō	me (I.s.)	mńi	less

e. *Initial three consonant clusters*

St-St-Nasal:	t-k-n	tknōc	to touch		
Affr-St-Nasal:	c-k-n	cknōc	to perceive by smell		
Fric-Fric-Stop:	v-s-p	vřpomnōc	to remind		
	v-s-t	vřtac	to get up		

(50e ctd)	v-s-k	vskazac	to show		
	Fric-Stop-Liq:	s-k-r/ř	skrōmni	greedy	skřeviic to distort
		s-p-ř	spředac	to sell	
		s-t-r/ř	strāk	pod	střēdni modest
		š-k-ł/l	škło	glass	šklani glass (adj)
		z-d-r/ř	zdrovi	healthy	zdřelēc to mature
	Fric-Liq-Stop:	x-ř-t	xřtu	baptism (G.s.)	
	Fric-Liq-Affr:	x-ř-c	xřcēc	to baptise	
	Nas-Fric-Affr:	m-s-c	mscēc	to avenge	
	Nas-Stop-Liq:	m-g-ł	mgła	fog	
	Liq-Fric-Nas:	r-ž-n	ržnōc	to saw, cut	
	f. <i>Initial four consonant cluster</i>				
	Fr-Fr-St-Liq:	v-z-g-l	vzglōđ	regard	

The above is not a comprehensive list of the combinatory possibilities, as only examples which could be confirmed in two sources have been taken into account, but some generalizations can be made. First, while bi-consonantal clusters are abundant, tri- and quadri-consonantal onsets are much less common and most are formed using one or both of the prefixes *s/z-* and *v-*. Second, there seem to be only two general limitations on the combination of obstruents and sonorants in a bi-consonantal cluster: (a) the two consonants must differ in at least one feature and (b) a sequence of obstruents must have the same value for [voice] unless the rightmost obstruent is /v/.

The presence of a consonantal cluster in any onset violates a universal preference for single consonant onsets, which is strictly enforced in some languages, but not in others: the constraint *COMPLEX (24) is dominated by the Faith constraints in Kashubian, as in all other Indo-European languages. This is exemplified in (51) for the word *stāri* 'old': here, the optimal candidate is

one which faithfully preserves the onset cluster present in the input – in violation of *COMPLEX – while the candidates which satisfy *COMPLEX at the cost of violating either MAX or DEP are rejected.

(51) MAX, DEP >> COMPLEX

/stəri/	MAX	DEP	*COMPLEX
təri	*!		
☞ stəri			*
setəri		*!	

The acceptability of most Kashubian onsets can be accounted for by the above ranking; however Kashubian, like all other Slavic languages, has a significant number of syllable onsets which violate the Sonority Sequencing Generalization as originally formulated in Selkirk (1984). This definition, given above as (11) and repeated below as (52), requires a sequence of onset segments to increase in sonority towards the peak, and thus would – incorrectly – predict that among the many sequences listed in (50a), only the stop-fricative and affricate-fricative ones could be legitimate onsets.

(52) Sonority Sequencing Generalization (Selkirk 1984: 116)

In any syllable, there is a segment constituting a sonority peak that is preceded and/or followed by a sequence of segments with progressively decreasing sonority values.

In some cases, apparent violations can be resolved through a proper grouping of the sonority hierarchy or understanding of the phonological properties of the sounds concerned. Thus, although Steriade (1982) and Selkirk (1984) argued that fricatives have higher sonority than stops, in which case the initial onset of the word *stəri* should constitute a violation of the

SSG, others such as Clements (1990), Morelli (1997, 1999) and Zec (1988, 1995) have argued that all obstruents constitute a single class with respect to sonority. Morelli in particular has shown that the facts which led Selkirk and Steriade to hypothesize that fricatives have greater sonority than stops are better explained by the interaction of Faith constraints and the three constraints given below in (53).

- (53) Constraints on Stop-Fricative combination (Morelli 1997: 7)
- OCP[-cont] “No Stop-Stop onsets”
 Tautosyllabic [-continuant] segments are disallowed.
 - OCP[+cont] “No Fricative-Fricative onsets”
 Tautosyllabic [+continuant] segments are disallowed.
 - *SO “No Stop-Obstruent onsets”
 A tautosyllabic sequence containing a stop followed by any
 obstruent is disallowed.

When all three of these constraints dominate Faith, only Fricative-Stop clusters such as *st-* are allowed, and indeed, this is the only type of obstruent cluster found in all languages allowing onset clusters, and in many languages, including English, it is the only type of obstruent cluster permitted. If, however, a language allows one or more of the constraints in (53) to be dominated in Faith, more onset types are permitted. For example, if a language allows *SO to be dominated by Faith, it can have not only the universally available Fricative-Stop onsets but also Stop-Fricative onsets such as *ps-*, as in the Kashubian word *psa* ‘dog (G.s.)’. Kashubian ranks all the constraints in (53) below the Faith constraints, allowing all four possible combinations of stop and fricative in an onset cluster, as shown in (54).

Further examples can be found in (50 a, e, f).

(54)	Fricative-Stop	stɔł	table
	Stop-Fricative	ksõʒ	priest
	Fricative-Fricative	sxvacɛc	to catch
	Stop-Stop	gdova	widow

Morelli's proposal allows us to redefine the SSG to permit sonority plateaus. Such a definition, given above as (12) and repeated below as (55), is provided by Blevins (1995), who draws on evidence provided by languages with syllable-initial (Trukese, Ulithian, Gilbertese) or syllable-final (Berber, Estonian, Ponapean) geminates to justify allowing sonority plateaus.

- (55) Sonority Sequencing Generalization (Blevins 1995: 210)
 Between any member of a syllable and the syllable peak, a sonority rise or plateau must occur.

The revised SSG accounts for the acceptability of at least 98% of the Kashubian onsets, and yet there is still a problem, because the SSG predicts that *lva* 'lion (G.sg.)', *rvac* 'to rip' and the other words in (50c) should not be well-formed, and yet they are perfectly acceptable. To a certain extent, this might be accounted for by the phonological properties of the labio-dental fricative /v/ in Kashubian. As in Polish (Czaykowska-Higgins 1988, Bethin 1992), /v/ acts like a sonorant with respect to regressive voicing (see section 2.4.1), and a simple v-onset is not uncommonly realized as the glide [w], particularly in North Kashubian. Since glides have greater sonority than liquids, a liquid-glide onset perfectly respects the SSG. Thus, if /v/ is, for Kashubian, a glide in the relevant sense, the onsets of *lva* and *rvac* are well-formed. On the other hand, an initial /v/ followed by another consonant is

usually prefixal. If prefixes are not incorporated into the PrWd of the stem to which they attach, then initial /v/ will not be in the same syllable as a following consonant and the SSG will be respected.⁵³

Yet even if all obstruents are held to have the same sonority and /v/ is considered a glide, there are still some problematic onsets, such as those in the Kashubian words *tgac* 'to lie' and *mgła* 'fog'. In *tgac*, /g/ has lower sonority than /t/ and should be prevented by the SSG from intervening between /t/ and the syllable nucleus if both consonants truly are in the same syllable.⁵⁴ Similarly, in *mgła* /g/ intervenes between higher sonority /m/ and the syllable nucleus in apparent violation of the SSG.

In dealing with such examples in other Slavic languages, it has been proposed (for Russian by Yearly 1995 and Zubritskaya 1995, for Polish by Rubach & Booij 1990b and Bethin 1992, for Slovak by Rubach 1993a) that such onsets do not truly violate the SSG. Rather, each contains within it a well-formed onset preceded by one or more additional consonants directly associated under the Prosodic Word. Zubritskaya's analysis, which seems to extend most readily to account for the Kashubian facts, involves the interaction of the three constraints ALIGN-L, EXHAUSTIVITY and POSSIBLE ONSET. The

⁵³ While this explanation accounts for many v-initial words in Kashubian, it does not account for all, as initial v is not prefixal in words such as *vsə*, *vzic* (50a) and *vłaza*, *vracac* (50b). Thus, the search for a comprehensive account is still ongoing.

⁵⁴ Some work on Polish in Government Phonology such as Cyran & Gussman (1998) and Rowicka (1999b) has suggested that the initial sonorants in such words constitute separate (unstressable) syllables similar to the minor syllables of Burmese. I adopt this approach in section 4.3 for trapped liquids which do not occur with a full vowel but are clearly syllabic, but the initial sonorants in *tgac* and *mgła* are not (usually) syllabic, so I am reluctant to group them together with cases such as *pləvac* 'spit' and *drəzi* 'shake'.

first of these, defined above in (36), aligns the left edge of a stem with the left edge of a PrWd. EXHAUSTIVITY, defined below in (56), requires elements to be parsed by the prosodic level directly above them, while POSSIBLE ONSET, also defined in (56), defines maximal onset complexity and enforces the SSG for Russian.

(56) EXHAUSTIVITY (Selkirk 1995: 443)

No C_i immediately dominates a constituent C_j , $j < i-1$

POSSIBLE ONSET (POSS-ONSET): Russian (Zubritskaya 1995: 29)

i) Onsets are maximally triconsonantal (fric + stop + son)

ii) Onsets can not consist of segments with falling sonority values:
*mt, *rt, *lp

In the parsing of most Russian words it is possible to satisfy all three constraints, but not when a word-initial sonorant is trapped by a following obstruent, preventing it from syllabifying in the onset to a vowel, as is the case in the word *mgla* 'haze'. Here, it is possible to satisfy both POSSIBLE ONSET and ALIGN-L only at the cost of violating EXHAUSTIVITY. This is shown in (57), where the first candidate satisfies ALIGN-L and EXHAUSTIVITY but is rejected because it violates POSS-ONSET, while the third candidate, which satisfies both POSS-ONSET and EXHAUSTIVITY, is rejected because it violates both ALIGN-L and MAX, and the fourth candidate is rejected because it violates DEP.⁵⁵ The remaining candidate, which satisfies POSS-ONSET and ALIGN-L but violates EXHAUSTIVITY, is thus optimal.

⁵⁵ Some Russian stems with a trapped sonorant allow epenthesis to satisfy certain syllabic well-formedness conditions but do not have epenthesis in word-initial position, which Yearly (1995) and Zubritskaya (1995) have taken as support for the hypothesis that trapped initial sonorants are extra-syllabic.

(57) Russian: POSS-ONSET, ALIGN-L >> EXHAUSTIVITY

/mgla/	MAX	DEP	POSS-ONSET	ALIGN-L	EXHAUST
PrWd[_σ (mgla)]			*!		
⁵⁶ PrWd[m _σ (gla)]					*
mPrWd[_σ (gla)]	*!				
PrWd[_σ (mo) _σ (gla)]		*!			

This analysis can be straightforwardly extended to Kashubian as shown in (58), where I replace the POSS-ONSET with its specifically Russian settings with the SSG, as defined in (55) and understood as a markedness constraint.⁵⁶

(58) Kashubian: SSG, ALIGN-L >> EXHAUSTIVITY

/mgła/	MAX	DEP	SSG	ALIGN-L	EXHAUST
PrWd[_σ (mgła)]			*!		
⁵⁶ PrWd[m _σ (gła)]					*
mPrWd[_σ (gła)]	*!				
PrWd[_σ (mo) _σ (gła)]		*!			

As in (57) the optimal candidate in (58) is one which violates EXHAUSTIVITY, but, unlike the other candidates, avoids violation of higher ranking constraints.

Rubach (1997) also considers such an analysis⁵⁷ for the Polish cognates of these words with problematic onsets, but rejects it and, defining ALIGN-L as ALIGN(STEM,L,σ,L) so that it enforces alignment of the stem with the syllable,

⁵⁶ Following the analysis of Morelli (2000), for whom the SSG is a constraint family, (55) can be seen as an expressing the constraint ordering *REVERSAL >> MAX >> *PLATEAU: the expression of structure may override a prohibition on sonority plateaus but not a prohibition of falling sonority in onsets.

⁵⁷ Rubach (1997) also uses the SSG as a constraint instead of POSSIBLE ONSET, while an informally stated constraint STRICT LAYER ("Segments-syllables-feet- phonological words, etc.") does the work of EXHAUSTIVITY in his analysis.

he opts for a representation such as $_{PrWd}[\sigma(mgla)]$, which violates POSSIBLE ONSET but wins out over $_{PrWd}[m_\sigma(gla)]$, which violates both ALIGN(STEM,L, σ ,L) and EXHAUSTIVITY. His motivation for this choice lies in the voicing properties of sonorants and of the trapped initial sonorant in particular. In Rubach's analysis, unsyllabified sonorants are voiced only by phonetic implementation and are not specified for voicing in the phonology, allowing voicing assimilation to pass through them: thus, the input form *mēdrka* 'crafty person (Gen.sg.)' is phonetically realized as [mētrka], with /d/ assimilating in voice to the following /k/ in spite of the intervening (phonetically voiced) /r/. Rubach says (1997: 558) that word-initial sonorants are not transparent to voicing assimilation, and therefore must be parsed within a syllable, as is /m/ in the representation $_{PrWd}[\sigma(mgla)]$. As evidence he contrasts the voicing behaviour of the word-initial sonorants in (59a), where the sonorant blocks regressive voicing from a voiced obstruent to a preceding voiceless one, with the behaviour of word-final sonorants in (59b), where the sonorant allows regressive voicing from a voiced obstruent to pass through it and affect a preceding voiceless obstruent.

- (59) a. word-initial sonorants: non-transparent to voicing (Rubach 1997: 558)
- | | | | |
|---------------|----|-------------------|---------------------|
| rak rzenia | —> | [rak rzenia] | spinal chord cancer |
| stek łgarstv | —> | [stek wgarstv] | pack of lies |
| navrut mżavki | —> | [navrut mżavki] | return of drizzle |
- b. word-final sonorants: transparent to voicing (Rubach 1997: 554)
- | | | | |
|----------------|----|---------------------|------------------------|
| viatr zaxodrii | —> | [vjadri zaxodrii] | western wind |
| taśm biurovix | —> | [taźm biurovix] | office ribbons (G.pl.) |
| pieśń bojova | —> | [pieźń bojova] | war song |

However correct Rubach's analysis may be for Polish, it is not an appropriate analysis for Russian, and insofar as the facts of Kashubian align with those of Russian rather than those of Polish, not for Kashubian either. As Kiparsky (1985) shows, a sequence of obstruents in Russian assimilates in voicing to the last one (60a), while sonorants (including /v/) do not trigger voicing assimilation (60b) but are transparent to voicing assimilation (60c).

- (60) a. gorod+k+a → [gorotka] little town
 mcensk # by → [mcenzg by] if Mcensk
- b. ot # nauk+i → [ot nauki] from science
 ot # vrag+a → [ot vraga] from the enemy
- c. iz # mcensk+a → [is mcenska] from Mcensk
 ot # mzd+y → [od mzdy] from the bribe
 ot # vdov+y → [od vdovy] from the widow

If voicing transparency truly is indicative of a sonorant being non-syllabified, as Rubach suggests, then the transparency of initial trapped sonorants in Russian shows that they are not within the initial syllable, which is consistent only with Zubritskaya's analysis.

The evidence collected suggests that the facts of Kashubian are more similar to those of Russian than to those of Polish: thus, Zubritskaya's account of Russian serves as a better model for the analysis of Kashubian than does Rubach's account of Polish. First, there is some evidence that initial trapped sonorants may be transparent to voicing. The Kashubian phrase given in (61), taken from Sobierajski (1964: 97) is directly comparable with the Russian examples in (59c).

- (61) / tak vzōt / → [tag vzou] 'thus (he) took (it)'

If /v/ is a glide, as assumed above, its sonority is greater than that of the fricative /z/ in *vzōt*, and so it must be considered a trapped sonorant, unable to be directly syllabified into the onset of the following vowel. As a sonorant, /v/ does not require that a preceding obstruent be voiced, as shown in (62).⁵⁸

- (62) Obstruent clusters with /v/ as second element (underlined)
- | | | |
|-------------|------------------------|--------------------|
| a. /čvarti/ | —> [ʧ <u>v</u> œrtʲ] | fourth (TopC 107) |
| /kviatə/ | —> [k <u>v</u> jatə] | flowers (TopC 105) |
| /svińe/ | —> [s <u>v</u> ińe] | pigs (TopC 108) |
| /tak wiele/ | —> [tak <u>v</u> iɛle] | so much (TopC 107) |
- b. /'přased v er'zac/ —> ['přəsɛt v er'zac] came in a reserve ... (TopC 109)

If /v/ were opaque to regressive voicing, the preceding /k/ in (61) should not be voiced. However, it is, so /v/ must allow the voicing associated with /z/ to pass through: hence, trapped sonorants (or at least, trapped /v/) are transparent to voicing in Kashubian. There is also a lack of evidence that medial trapped sonorants differ in transparency from initial trapped sonorants in Kashubian. First, Kashubian generally avoids trapping sonorants medially.⁵⁹ As shown in (63) with examples taken from Trepczyk (1994), where Polish has a trapped sonorant (underlined), Kashubian usually has either nothing (63a), a sonorant-vowel sequence (63b) or a fricative trill /ř/ (63c) which, devoicing both before and after a voiceless obstruent (see 2.4) cannot be *transparent* to

⁵⁸ Although /v/ does not cause regressive voicing within words, Lorentz (1925:88) says that /v/ causes regressive voicing at the phrasal level, and a few examples in my data such as [dozɟ viɛle] < *dosc wiele* 'quite a few' (TopC 99) and [naz v dviɛřax] < *nas v dviɛřax* 'us at the door' (TopC 100) support this. Thus, it cannot be totally ruled out that the voicing of /k/ in (61) is due to the following /v/.

⁵⁹ Topolińska (1967:107) gives an example of a trapped medial sonorant in the form *mistrka* 'female master (here: sewing instructor)', which however does not provide any information about voicing assimilation and corresponds to a vowel-sonorant sequence in the form cited by Trepczyk (1994): *mésterka*.

voicing, or it uses a different morphological construction than Polish such that a trapped sonorant corresponds to a normally syllabified one (63d).

(63)	<i>Polish</i>	<i>Kashubian</i>	
a.	řemiešłnik	řemjāsnik	craftsman, artisan
	jabłko	jabko	apple
	srebrni	střebni	silver (adj)
b.	płvac	pləvac/pəlvac	to spit
	krvavi	krəvavi	bloody
c.	srebrni	střebřni	silver (adj)
d.	myślnik	məsləna	dash, hyphen
	pomisł	poməsləŋk ⁶⁰	back, spine
	dřvalnia	drevniak	wood(cutter's) shed

Also, where initial CrC clusters are not syllabified by inserting a schwa or (less commonly) making the r syllabic, the trapped sonorant does not seem transparent to voicing. Thus, in the Ostrzyce text published in Topolińska (1967: 99), the word *trəvalo* 'lasted (n.sg.)' appears in phonetic transcription as [trvaɯo], whereas its Polish cognate is affected by progressive devoicing, being phonetically realized as [trfawo] with voicing going through the intervening sonorant.⁶¹ However, /v/ rarely undergoes progressive devoicing in Kashubian (see section 2.4.2), so the lack of progressive voicing in [trvaɯo] is not conclusive proof that sonorants trapped within the Kashubian onset are opaque to voicing.

Thus, since the Rubach analysis violates the universally high ranked SSG and the circumstances warranting this violation do not appear to exist in

⁶⁰ The nasal /n/ is backed to [ŋ] before a tautomorphic velar.

⁶¹ Rubach (1997) argues that the transparency of the trapped sonorant in these cases is problematic for OT and can only be resolved by adding a derivation component to OT.

Kashubian, adoption of Zubritskaya's model seems preferable, as exemplified above in (58).

Information on the structure of word-medial onsets comes from my field investigation of Kashubian syllable structure (see Appendix). Like those who have tested the intuitions of Poles (Rubach & Booij 1990a, b; Bethin 1992) and Slovaks (Rubach 1993a) regarding the syllabification of medial clusters, I found that Kashubians have a moderate preference for maximizing onsets and minimizing codas (64a) but strongly prefer cluster-initial sonorants to be syllabified in the coda to the preceding vowel (64b).

(64) Syllabification of medial clusters in Kashubian

a.	ba.vii.dło (7/9) ⁶²	toy	bië.dni (5/7)	poor
	do.bře (6/9)	well	wubrō.tvioni (4/7)	imaginary
b.	bjał.ka (8/8)	woman	kar.čma (9/9)	inn
	kvar.talni (7/9)	quarterly	kvartal.ni (6/6)	quarterly

As will be discussed further in section 3.1.2, this evidence suggests that because of a high ranking of NO-CODA (25) in Kashubian, as in other Slavic languages, medial consonants are all preferably syllabified in the onset to the following vowel, but satisfaction of POSS-ONSET overrides this, causing the initial sonorant of a medial cluster to be preferably syllabified in the coda to the preceding vowel.

2.3 Onset - Nucleus Interaction

Since Jakobson (1929) it has been generally recognized that in Slavic, an onset often agrees with the vowel of the immediately following nucleus in

⁶² The numbers give a measure of preference, so (7/9) means that seven out of nine informants preferred this syllabification.

having some kind of coronal articulation. This “intrasyllabic harmony”, as Bethin (1998) calls it, is a common legacy of the Slavic languages but is more pronounced in some languages than in others.

2.3.1 Onset-Nucleus Interaction in OT

Zubritskaya (1995) has argued that intrasyllabic harmony involves vowel-headed feature-sharing between an onset consonant and the following vowel. This sharing is encoded in the grammar of Russian by a high ranking of the Prosodic markedness constraint CV-LINK (45). CV-LINK is fully satisfied in a CV sequence only when each vocalic Place feature is allowed to spread to the preceding consonant. In Russian, however, Zubritskaya claims, onsets agree with their following vowels in rounding and frontness but not lowness because CV-LINK dominates the Featural markedness constraints *CORONAL and *LABIAL, but not *PHARYNGEAL (the active articulator for low vowels in the feature model Zubritskaya uses). Tableau (65), an excerpt from Zubritskaya’s tableau 3.8 (1995: 80), gives a representation of the word *te* ‘those’ showing the interaction between the four constraints mentioned above.⁶³

⁶³ Only some of Zubritskaya’s candidates are represented due to the substantial differences between the feature model used in her work and the one used here. Suffice it to say that the satisfaction of CV-Link cannot be subverted by failing to include one or all of the features associated with the vowel.

(65) *PHARYNGEAL >> CV-LINK >> *CORONAL, *LABIAL

/te/	*PHARYNG	CV-LINK	*CORONAL	*LABIAL
		!*		
	*!			
		*		

Here, the first candidate is eliminated because it has multiple violations of CV-LINK, the second candidate is eliminated because it violates high-ranking *PHARYNGEAL, and so the third candidate is the optimal candidate, because even though it has one violation of CV-LINK, it incurs fewer violations than the first candidate and avoids violating any higher ranking constraints.

2.3.2 Allophonic Place assimilation in Kashubian

As Kashubian is heir to the same linguistic inheritance as Russian, it is not surprising that Kashubian lends itself to an analysis along the lines of one proposed for Russian. The two languages differ significantly, however, with respect to both labialization and palatalization.

2.3.2.1 Secondary labialization

In both Russian and Kashubian, labial and velar consonants are pronounced with secondary labial articulation when they occur in the onset to a vowel specified for Labial under its V-Place node, /u, o, o/ as defined in

(6). The other two vowels which are phonetically rounded (in dialects with rounded vowels), /ō/ and /á/, do not trigger secondary labialization, but being the closed counterparts of the low vowels /ā/ and /a/ respectively (4.1.) they do not need to be contrastively specified for the Place feature Labial, and I suggest they are not. The roundedness of /ō, á/ is thus epiphenomenal, perhaps a feature associated with height and backness.

Secondary labialization before [+labial] vowels is exemplified for the Kashubian labial-final stems in (66) and velar-final stems in (67): labialized forms on the right are here contrasted with non-labialized forms on the left.

(66) labial-final stems before unrounded and rounded vowels

<i>Gen.sg.</i>	<i>Nom.sg.</i>	
nieba	nieb ^w o	sky, heaven
piiva	piiv ^w o	beer
pasma	pasm ^w o	strip
<i>Nom.sg.</i>	<i>Voc.sg.</i>	
mātpa	mātp ^w o	monkey
gāba	gāb ^w o	mouth, snout
harfa	harf ^w o	harp
m ^w ova	m ^w ov ^w o	speech, language
məma	məm ^w o	Mom

(67) velar-final stems before unrounded and rounded vowels

<i>Gen.sg.</i>	<i>Nom.sg.</i>	
woka	wok ^w o	eye
wuxa	wux ^w o	ear
<i>Nom.sg.</i>	<i>Voc.sg.</i>	
białka	białk ^w o	woman
noga	nog ^w o	leg
m ^w uxa	m ^w ux ^w o	fly

This is a purely phonological effect and not morphologically determined, as can be seen by comparing the above examples with those in (68), where stem-

final coronal consonants are not rounded, although followed by the same suffixes as in (66) and (67).

(68) coronal-final stems before unrounded and rounded vowels

<i>Gen.sg.</i>	<i>Nom.sg.</i>	
sviāta	sviāto	holiday
gniāzda	gniāzdo	nest
wokna	wokno	window
kwoła	kwoło	wheel
jezora	jezoro	lake
radja	radjo	radio
<i>Nom.sg.</i>	<i>Voc.sg.</i>	
woyc̣a	woyc̣o	sheep
vłaẓa	vłaẓo	power, authority
kačuša	kačušo	small duck
róża	różo	rose
sviirĩa	sviirĩo	pig
mōdřela	mōdřelo	know-it-all

Labials with a secondary coronal articulation in the input also lack a secondary labial articulation before rounded vowels, as shown in (69).

(69) stems with coronalized labial before unrounded and rounded vowels

<i>Nom.sg.</i>	<i>Voc.sg.</i>	
zeṃia	zeṃio	earth, land
bṛavia	bṛavio	brow

The spreading of [labial] from a vowel to its onset is enforced by CV-LINK, which Kashubian limits in the same way as it limits ONSET (see (46)): CV-LINK is ranked above *LABIAL, but below IDENT(VPLACE), *CORONAL, and *DORSAL. This is shown in (70), where the first candidate is eliminated because it fails to associate either of the vowels with the preceding onsets, incurring a double violation of CV-LINK, the second because it associates the feature [dorsal] of the first vowel with the preceding onset in violation of *DORSAL,

and the fourth because the featural composition of the second input vowel is changed in violation of IDENT(VPLACE). Therefore, the third candidate is optimal, even though it violates CV-LINK, *DORSAL and *LABIAL.

(70) IDENT(VPLACE) >> *CORONAL, DORSAL >> CV-LINK >> *LABIAL

/gābo/	IDENT(VPL)	*CORONAL	*DORSAL	CV-LINK	*LABIAL
g ā b o dor dor lab lab			**	**!	
gh ā bw o dor lab dor lab			***!		
g ā bw o dor lab dor lab			**	*	
g ā b a dor lab dor dor	*!				

Coronals are pronounced with secondary labial articulation in Russian, but not in Kashubian. There may be a number of reasons for this. First, the non-rounding of the coronal consonants helps to differentiate them perceptually from the other consonants, which Rice (1994) and Hall (1997) have argued can be grouped together under a Peripheral place node: here, rounding enhances the difference in place features distinguishing the coronal and the peripheral consonants. Also, work in underspecification theory (Avery & Rice 1989, Cho 1990, 1991) has shown that coronals often act as


unmarked *vis à vis* peripheral consonants. Kashubian thus enhances the contrast between the coronals and the other consonants by denying coronals a certain measure of the featural complexity afforded the other consonants: it does not allow them to bear a secondary articulation.⁶⁴ I propose to formalize this restriction with the featural markedness constraint *SEC(COR),⁶⁵ which disallows coronal consonants with a secondary articulation.

(71) *SEC(COR)

A segment with the primary articulator Coronal must not be associated with a secondary articulator.

*SEC(COR) dominates CV-LINK, preventing it from being satisfied in the parsing of an input form such as /jezoro/, as shown in (72), where the second candidate is eliminated because it violates higher ranking *SEC(COR), while the first is optimal even though it has more violations of CV-LINK.

(72) *SEC(COR) >> CV-LINK

/jezoro/	*SEC(COR)	CV-LINK
j e z o r o cor cor cor lab cor lab		***
j e z ^w o r ^w o cor cor cor cor lab lab	*!*	

The lack of labialization in forms such as *zemio* (69) cannot be

⁶⁴ As far as I can determine, Kashubian does not have secondary palatalization.

⁶⁵ To my knowledge, this constraint has not been proposed before, although it is comparable to many that have been proposed. This is also true for the other constraints of my invention, marked PH in the list of constraints (p.xii-xiii). The OT literature has grown so fast that it is often difficult to know exactly which constraints have been proposed and how they have been defined: in this respect, the constraint index of Kager (1999:451-452) is helpful but still inadequate.

explained with reference to *SEC(COR), since the primary articulator here is Labial. Instead, noting that few languages allow the simultaneous attachment of two secondary articulators, I posit the markedness constraint *2SEC, defined in (73), and claim that this is undominated in Kashubian.

(73) *2SEC

No one segment may be associated with two secondary articulators.

The Clements & Hume feature model adopted in this study lends itself well to such a limitation on segmental structure because, unlike most other models, it does not assume that all vowels share any articulator node.

Because of the high ranking of *2SEC in Kashubian, no consonant can be associated with two secondary features, so when both are available, some other constraint must decide which one will be associated in the surface form. Since it is the coronal secondary feature, assumed (section 1.2.1) to be part of the input, which appears in the output, a constraint must dominate which demands that output features be parsed. It cannot be IDENT (28), since domination of CV-LINK by IDENT would prevent both the changing and the addition of a secondary articulation. Thus, I propose that this is an effect of the constraint MAX(SUBSEG),⁶⁶ proposed by Zoll (1996) and defined as in (74).

(74) MAX(SUBSEG) Zoll (1996: 59)

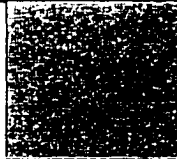

Every subsegment in S_j has a correspondent in S_0 .

$$\forall x (\text{Subsegment}(x) \wedge S_j(x)) \rightarrow \exists y (S_0(y) \wedge xRy)$$

⁶⁶ As originally proposed by Prince & Smolensky, MAX applies only to whole segments, but Zoll and others have argued that a distinction should be made between MAX(SEG), which requires the parsing of all input segments, and MAX(SUBSEG), which requires the parsing of all input features. In this study, MAX should be read as referring to MAX(SEG).

The interaction between *2SEC, MAX(SUBSEG) and CV-LINK is shown in (75).

(75) *2SEC, MAX(SUBSEG) >> CV-LINK

/zemjo/	*2SEC	MAX(SUBSEG)	CV-LINK
z e m ⁱ o cor cor lab lab cor			**
z e m ^w o cor lab cor lab		*!	
z e m ^h o cor lab cor cor lab	*!		

Here, the third candidate is eliminated because it violates *2SEC by having an association of /m/ with two secondary features, the second candidate is eliminated because it violates MAX(SUBSEG) by failing to associate /m/ with the secondary feature specified in the input, leaving the first candidate as optimal even though it incurs more violations of CV-LINK.

2.3.2.2 Velar-Palatal Allophony

In Russian, CV-Link dominates not only *LABIAL but also *CORONAL, so that palatal or palatalized consonants consistently appear before front vowels. This sharing of coronality is generally held to be a feature of Common Slavic, so it is part of Kashubian's linguistic inheritance, but language change has obscured this relationship between palatal consonants and front vowels, so that at present all labial and coronal consonants and the velar fricative can occur before a front vowel in Kashubian, as shown in (76).

(76)	consonants before a front vowel			
	<i>coronal(ized)</i>		<i>non-coronal</i>	
	xłoppi	man (N.pl.)	glupi	stupid (N.sg.m.)
	kašəbii	Kashubian (N.pl.)	słabi	weak (N.sg.m.)
	krovji	cow's (adj: N.sg.m.)	miljonovi	millionth (N.sg.m.)
	piōti	fifth (N.sg.m.)		
	młodi	young (N.sg.m.)		
	łəsi	bald (N.sg.m.)		
	cəzi	foreign (N.sg.m.)		
	pierši	first (N.sg.m.)		
	třeci	third (N.sg.m.)		
	setni	hundredth (N.sg.m.)	sódmi	seventh (N.sg.m.)
	mijli	nice, kind (N.sg.m.)		
	stari	old (N.sg.m.)		
	marxief	carrot (N.sg.)	głəxi	deaf (N.sg.m.)

The velar stops constitute a significant exception to this generalization: in all but a few villages, velar stops are not found before front vowels in native Kashubian words.⁶⁷ Wherever morphological alternation sets up a context in which an underlying velar stop might be parsed before a front vowel, be it the front vowel of an inflection or a latent stem vowel appearing to preserve proper prosodic structure (see section 4.2), the surface form shows a coronal affricate. This is shown in (77).

(77)	<i>before front vowel</i>		<i>before back vowel or consonant</i>	
	k ~ ć	rāci hand (N.pl.)	rāka	hand (N.sg.)
		białci woman (N.pl.)	białka	woman (N.sg.)
		ćeř bush (N.sg.)	křa	bush (G.sg.)
		căcer sugar (noun)	căkrovi	sugar (adj)
	g > ź	noži leg (N.pl.)	noga	leg (N.sg.)
		drəži second (N.sg.m.)	drəgā	second (N.sg.f.)
		wożin fire (N.sg.)	wognā	fire (I.sg.)
		zėžer clock (N.sg.)	zėgra	clock (G.sg.)

⁶⁷ Palatalized velar stops are found in a few recent borrowings, such as *kino* 'cinema' and *gitară* 'guitar'. I assume that these forms have not been completely assimilated.

This alternation may be attributed to the influence of the contextual markedness constraint *VS-FRONT, defined in (78), which reflects the observation that many languages do not allow non-palatalized velar stops before front vowels.

(78) *VS-FRONT

No (plain) velar stops (may appear) before a front vowel.

In the few North Kashubian villages where /k, g/ have the realization [k], [g] before front vowels, the domination of VS-FRONT over IDENT, which any change to the featural specification of the onset will violate, and *CORONAL, which prevents CV-Link from spreading [coronal] to all consonants (see (70)), provides a full account of the alternation. Elsewhere, however, high ranking of the constraint *VS/COR (79) prevents palatalized velar stops from appearing.

(79) *VS/COR

No velar stops (may appear) with secondary coronal articulation.

Among the candidates which the OT function GEN produces (1.3.1) for the input /białk+i/ 'women' will be some without a link between the velar stop and the following vowel and others which will have such a link. Among the latter there will be some in which the secondary coronal articulation is promoted, replacing the primary place of articulation. The first candidate fails because it faithfully parses /k/ before /i/ as [k], a violation of *VS-FRONT. The second candidate fails because it parses /k/ as [kʲ], satisfying *VS-FRONT but violating *VS/COR (as well as *CORONAL and IDENT), and the fourth candidate fails because it changes the vowel features, a violation of IDENT(VPLACE). The third candidate, where /k/ is parsed as [č], (minimally) violating IDENT and

*CORONAL but satisfying IDENT(VPLACE), *VS-FRONT and *VS/COR, is thus the optimal candidate.

(80) IDENT(VPLACE) >> *VS-FRONT, *VS/COR >> *CORONAL >> IDENT

/białki/	IDENT(VPL)	*VS-FRONT	*VS/COR	*COR	IDENT
bj a ł k i lab cor dor \ cor dor cor		*!			
bj a ł k j i lab cor dor \ cor dor cor			*!		
bj a ł ć i lab cor \ cor dor cor				****	
bj a ł k a lab cor dor \ cor dor dor	*!				

2.3.3 Palatal Allomorphy in Kashubian

While onsets are not compelled to share the coronality of following front vowels in modern Kashubian, there are traces of such a requirement operating in earlier stages of the language. Kashubian has an alternation between palatal and non-palatal consonants which was once phonological in nature but no longer is, as the phonological environment which conditioned the alternation can no longer be recognized as such by modern speakers because the conditioning front vowel has been either lost or shifted. Rather,

the palatal ~ non-palatal alternation in Kashubian is now conditioned by the presence of specific morphemes, as has been argued to be the case for cognate facts in Polish by Czaykowska-Higgins (1988). There are both derivational (81) and inflectional (82) suffixes consistently used with palatalized forms.

(81) Derivational suffixes used with palatalized forms⁶⁸

- ø derives adjectives referring to animals
 małpi 'monkey (adj)' < małp + ø + i
 krovii 'cow (adj)' < krov + ø + i
- ař derives abstract nouns
 dłaɓiař 'sculptor' < dłaɓ + ař
 stolař 'carpenter' < stoł + ař
- ba derives abstract nouns
 żeniba 'wedding' < żon + ba
 słuźba 'service' < słağ + ba
- i derives comparative degree for adverbs
 čāsci 'more often' < čast + i
 ɣłosni 'more loudly' < ɣłosn + i
- ica⁶⁹ derives nouns
 łżawiica 'false propaganda' < łżav + ica
 cemnica 'darkness' < cemn + ica
- iče derives nouns relating to plants
 wofśniče 'porridge' < ofs + n + iče
 ɓwulviiče 'top of potato plant' < bulv + iče
- išče derives nouns
 knąpiišče 'boy (said with pity)' < knąp + išče
 ɓwulviišče 'potato field' < bulv + išče
- izna derives abstract nouns
 kaśabiizna 'Kashubian language/culture' < kaśab + izna
 ročazna 'anniversary' < rok + izna
- n derives adjectives
 mlēcni 'milky' < mlék + n + i
 kwartalni 'quarterly (adj)' < kwartał + n + i

⁶⁸ Morphological components are given in input form.

⁶⁹ Suffix-initial /i/ is replaced by schwa after non-nasal coronals, except in the comparative suffix -i (< éj). Thus, rok + iizna > ročazna 'anniversary'.

- (81...) -nik derives nouns referring to professions
 vanožnik 'wanderer' < vanog + nik
 mlěčnik 'milkman' < mlěk + nik
- sk derives adjectives
 słovianści 'Slavic' < słovion + sk + i
 słovacći 'Slovak' < słovák + sk + i
- (82) Inflectional suffixes used with palatalized forms
- e Locative singular suffix for fem.sg. nouns
 gābie 'mouth (L.sg.)' (cf. gāba N.sg.)
 nože 'leg (L.sg.)' (cf. noga N.sg.)
 gʷozǝrie 'hour (L.sg.)' (cf. gʷozǝna N.sg.)
- i Nominative plural suffix for masc. personal nouns
 kašǝbji 'Kashubian (N.pl.)' (cf. kašǝba N.sg.)
 xłǝpji 'man (N.pl.)' (cf. xłǝp N.sg.)

Not all of the above suffixes consistently induce palatalization, but all can require they be attached to a stem ending in a palatalized consonant; when they attach to a stem ending in a non-palatalized consonant, this is largely due to the influence of phonological constraints on the appearance of palatalized consonants. There are also some suffixes, exemplified in (83), which do not require stems ending in a palatalized consonant, although it should be kept in mind that most if not all suffixes can be found with palatalized stems since many stems include coronals historically derived through palatalization in their lexical representation.

- (83) Suffixes not requiring attachment to palatalized-final stems
- a. derivational suffixes
- ǎc derives names of persons from verbs
 pǎvǎc 'swimmer' < pǎv + ǎc
 pʷomagǎc 'helper' < pʷo + mag + ǎc
- ǎl derives descriptive attributes
 flabǎl 'chatterbox' < flab + ǎl
 mōdrǎl 'know-it-all' < mōdr + ǎl

- (83...) -ota derives abstract nouns
 cemnota 'darkness' < cem+n+ota
 vjalgwota 'size' < vjalg+ota
- ov forms adjectives
 oknovi 'window (adj)' < okn+ov+i
 ləpovi 'linden (adj)' < ləp+ov+i
- b. inflectional endings
- i Nominative singular suffix for masc. adjectives
 novi 'new (N.sg.m.)'
 młodi 'young (N.sg.m.)'
- i Gen./Dat./Inst. singular suffix for fem. adjectives
 głupi 'stupid (G/D/I.sg.f.)'
 zeloni 'green (G/D/I.sg.f.)'
- ā Instrumental singular suffix for masc. and neut. nouns
 xłopā 'man (I.sg.)'
 woknā 'window (I.sg.)'

Zoll (1996) accounts for similar facts in Polish by positing a latent coronal autosegment associated with the palatalizing suffixes. When such a suffix is attached to a stem, satisfaction of MAX(SUBSEG) requires that the autosegment be parsed by adding the latent feature to the feature set of the stem-final consonant: of course, should this prevent the satisfaction of a constraint dominating MAX(SUBSEG), the autosegment remains unparsed. While attractive, an analysis along these lines for Kashubian is problematic for a number of reasons. First, given that this palatalization and the appearance of latent vowels (see section 4.2) has, in some cases, a common source historically, a phonological analysis using the same object, a featural autosegment, runs the danger of conflating the two phenomena: this must not be done, for the contexts of the two only partially overlap. Second, the Slavic languages have been subject to onset-nucleus palatal harmony for a

long time, and it has had different effects at different times: using a simple autosegment to account for all layers of palatalization inevitably leads either to oversimplification or to feature trees built around a problem specific to one language – neither is desirable. Finally, Zoll’s analysis applies a degree of consistency which because of the degree of variation in Kashubian cannot, I believe, be maintained, at least not until more thorough studies of the Kashubian morphology have been made. Variation like that given (84) exemplifies this inconsistency of application: until it is clear why this suffix – other common suffixes exhibiting similar patterns include the adjective formant *-n* and the nominal formant *-nik* – attaches to a palatalized stem in one case and to a non-palatalized stem in another, a phonological analysis of this phenomenon may be premature.

- (84) a. *dłɔb + aʃ* > *dłɔbjaʃ* carver
gʃib + aʃ > *gʃɔbjaʃ* mushroom picker
ʃkɫ + aʃ > *ʃklaʃ* glazier
stɔɫ + aʃ > *stɔlaʃ* carpenter
kwɔmjin + aʃ > *kwɔmjinjaʃ* chimney sweep
- b. *zɔb + aʃ* > *zɔbaʃ* dentist
sɫov + aʃ > *sɫovaʃ* dictionary
krɔm + aʃ > *krɔmaʃ* shop keeper
ɫg + aʃ > *ɫgaʃ* liar
piek + aʃ > *piekaʃ* baker
piis + aʃ > *piisaʃ* writer
kwurɫst + aʃ > *kwurɫstaʃ* artist

Even though the alternation between palatal and non-palatal stem-final consonants may not be describable in phonological terms, its limitations clearly are. As a working hypothesis, it is thus assumed that the alternation

involves the morphological subcategorization by which affixes are matched up with stems and this is done in satisfaction of a constraint SUBCATPAL (85).

(85) SUBCATPAL

A suffix requiring a stem with a palatalized final consonant is matched with a stem having a palatalized final consonant.

Like all OT constraints, SUBCATPAL is violable and if dominated by a Markedness constraint prohibiting the configuration which would arise through the faithful parsing of some input subsegment, its effect may be obscured. This occurs when a stem-final labial is directly followed by a consonant-initial palatalizing suffix, as in the examples shown in (86).

(86) Labial-final stems followed by a consonant-initial palatalizing suffix

pwodobni	< podob + n + i	similar
kašəbsci	< kašəb + sk + i	Kashubian
krevni	< krev + n + i	related
čerovník	< čerov + ník	director

This data can be accounted for if SUBCATPAL is dominated by a markedness constraint prohibiting labial consonants which bear a secondary articulation before another consonant, *PjC (87), which is grounded in the physical difficulty of perceiving a secondarily coronalized labial in such a context.

(87) *PjC

Labial consonants cannot be associated with a secondary coronal articulator pre-consonantly.

The effects of this constraint can be observed in a number of languages other than Kashubian, including Standard Polish. Combined with what seems to be a universal prohibition on the promotion of labials (Zubritskaya 1995: 13), domination of SUBCATPAL by *PjC accounts for the non-palatalization of the

labials in (86), as shown in (88) for the form *čerovník* 'director' (cf. *čerovac* 'to direct'), where the first candidate is chosen as optimal even though it parses the input less faithfully.

(88) *PjC >> SUBCATPAL

/čerov+ník/ <- pal	*PjC	SUBCATPAL
čerovník		*
čerovník	*!	

Unlike the labials, stem-final velars are always affected by the addition of a palatalizing suffix. However, the product of velar palatalization may differ depending on the suffix added. Two morphologically determined velar palatalizations can be distinguished, each associated with a different set of suffixes. These are exemplified in (89).

(89) Velar Palatalization I

k > č	mlěčník	< mlěk + ník	milkman
	ročəzna	< rok + izna	anniversary
g > ž	služba	< sləg + ba	service
	vanožník	< vanog + ník	wanderer
x > š	pʷolašəzna	< polax + izna	Polish language
	bwušni	< bux + n + i	proud (N.sg.m.)

Velar Palatalization II

k > c	rāce	hand (L.sg.)	cp. rāka (N.sg.)
	lōce	meadow (L.sg.)	cp. lōka (N.sg.)
g > ʒ	noze	leg (L.sg.)	cp. noga (N.sg.)
	droze	road (L.sg.)	cp. droga (N.sg.)
x > š	drəšə	friend (N.pl.)	cp. drəx (N.sg.)

Interaction between SUBCATPAL, the constraint banning palatalized velars *VS/COR (79), and IDENT (28) may account for these alternations. As shown in (90) for the form *mlěčník* 'milkman', SUBCATPAL must be dominant, since

selecting a stem allomorph with a non-palatalized final consonant – as in the first candidate – does not produce an acceptable result, but **VS/COR* must also be dominant, since having a surface form with a palatalized velar, as in the second candidate, is also unacceptable. Satisfaction of both constraints can be had only in the optimal third candidate, where it is obtained at the cost of violating IDENT through substitution of the primary Place feature (Dorsal) with the secondary Place feature (Coronal).

(90) SUBCATPAL, **VS/COR* >> IDENT

/mlék+riik/ <- pal(VP I)	SUBCATPAL	<i>*VS/COR</i>	IDENT
m l é k r i i k lab cor dor cor dor cor cor	*!		
m l é k j r i i k lab cor dor cor dor cor cor cor		*!	
m l é č r i i k lab cor cor dor cor cor cor			*

This same constraint order can account for the alternations of both Velar Palatalization I and Velar Palatalization II because different affixes are used with each pattern and the dominant constraint is responsible for morpheme selection: SUBCATPAL can require that the stem to which an affix attaches not only end in a palatalized consonant, but also that the palatalized consonant be of the appropriate type (Velar I for *-riik*, Velar II for *-e* [L.sg.f.]).

The coronals are affected by the palatalizing suffixes differently than

the labials and velars in so far as they are not all affected to the same extent. As shown in (91), a stem-final nasal coronal is always replaced by palatal nasal before a palatalizing suffix, subject to the restriction that /n/ cannot precede suffix-initial /n/, even if present in the input (e.g. *ženni* < *ženi* + *n* + *i* 'daily'), and the lateral /l/ is almost always found before a palatalizing suffix,⁷⁰ while the central liquid /r/ and the dental stops /t/ and /d/ regularly alternate with /ř/, /c/ and /ʒ/ before palatalizing inflectional suffixes and many vowel-initial derivational suffixes.⁷¹

(91) Coronal alternations before palatalizing inflectional suffixes

n > n̄	sərie	son (L.sg.)	cf. sin (N.sg.)
	wokrie	window (L.sg.)	cf. wokno (N.sg.)
ʔ > l	wořle	eagle (L.sg.)	cf. wořet (N.sg.)
	kwole	wheel (L.sg.)	cf. kwolo (N.sg.)
r > ř	jezoře	lake (L.sg.)	cf. jezoro (N.sg.)
	viodře	weather (L.sg.)	cf. viodro (N.sg.)
t > c	brace	brother (L.sg.)	cf. brat (N.sg.)
	sviāce	holiday (L.sg.)	cf. sviāto (N.sg.)
d > ʒ	graze	hail (L.sg.)	cf. građ (N.sg.)
	biēze	poverty (L.sg.)	cf. biēda (N.sg.)

Coronal alternations before palatalizing derivational suffixes

n > n̄	ženiba	< žon + ba	wedding
	głosrieši	< glos + n + eši	loudest (N.sg.m.)
ʔ > l	kvartalni	< kvartaʔ + n + i	quarterly (N.sg.m.)
	stolař	< stoʔ + ař	carpenter
r > ř	čařnica	< čar + (ri)ica	witch
	spāřno	< s + pār + n + o	swelteringly
t > c	bócak	< bót + ik	small shoe

⁷⁰ Gołabek (1992) gives a single form *vetrik* 'sweater' with /t/ preceding a palatalizing suffix, but since it is also found in Sychta (1967ff, VII 346) it must be an authentic form.

⁷¹ When an s-initial suffix attaches to a r-final stem, the r and s may merge as [ř] in the some dialects, e.g. *gb^wur + stv^wo* > *gb^wurřtv^wo* 'farm', but where merger does not occur, /r/ is unaffected: in this case our example has the form *gb^wurstv^wo*.

(91 ctd)	bracin	< brat + in	brother	
	d > ʒ	řazi	< řad + i	more rarely
		právžəvi	< právd + iv + i	real, authentic (N.sg.m.)

The dental fricatives /s/ and /z/ enter into alternations – with /š/ and /ž/ – only in verbal paradigms where s and z were historically followed by [j]. This is shown in (92) along with the effect of these same verbal forms on other coronal consonants. The alternation sc/šč can also be included here since Rowicka 1994⁷² has shown that /sk/, /st/ and their congeners /sc/ and /šč/ act as single (complex) segments with respect to palatalization.

(92)	<u>palatalized form</u>		<u>compare</u>
s > š	prošā	ask (1s.pr.)	prosəc (infin.)
	piišā	write (1s.pr.)	piisař ‘writer (N.sg.)’
z > ž	kāže	order (3s.pr.)	kazac (infinitive)
	kāže	order (3s.pr.)	kāzanie ‘sermon (N.sg.)’
t > c	xvacəc	catch (infin.)	xvatóm (1s.pr.)
	sviācəc	celebrate (infin.)	sviāti ‘sacred (N.sg.m.)’
d > ʒ	kłazā	put, lay (1s.pr.)	kładła (3s.f.past)
	bieżəc sā	live in poverty (infin.)	bieda ‘poverty (N.sg.)’
r > ř	bjeřā	take (1s.pr.)	brac (infin.)
	mjeřəc	measure (infin.)	mjara ‘measure (N.sg.)’
ʈ > ʈ	pʷokwoleš	quarrel (2s.fut.)	pʷokłoc (infin.)
	xvaləc	praise (infin.)	xwała ‘praise (N.sg.)’
n > ŋ	płənie	swim (3s.pr.)	płənōc (infin.)
	kvasniec	turn sour (infin.)	kvasni (N.sg.m.)
sc > šc	gwoščā	be a guest (1s.pr.)	gwoscəc (infin.)

The palatal coronals present in input forms (c, ʒ, š, ž, č, ŋ, l, ř) are historically the products of palatalization and thus do not change before palatalizing

⁷² Rowicka’s analysis, which discusses the distribution of word-initial /st/ and /sk/ in various contexts, including those of palatal and voicing assimilation, deals with Polish but can equally well account for Kashubian data with the proviso that wherever Polish has /šč/ Kashubian consistently has /sc/.

suffixes.⁷³

In general, the palatalization of the coronal obstruents seems to be subject to much the same restriction as that of labials: when followed by another consonant, neither labial nor coronal obstruents can be palatalized to meet the selection requirements of the palatalizing suffix. The labial sonorants, however, are also subject to this restriction, while the coronal sonorants usually⁷⁴ are palatalized in this context. Also, if palatalized labials are disallowed pre-consonantly for reasons of low perceptibility, this is not the case for coronals with a promoted secondary coronal articulator.⁷⁵ Thus, a constraint specifically to prevent the palatalization of coronal obstruents pre-consonantly is proposed, *TjC (93).

(93) *TjC

Coronal obstruents cannot be palatalized pre-consonantly.

The interaction of *TjC and SUBCATPAL is shown in (94) for the word *wogrodŋik* 'gardener'. Here the constraint *TjC dominates SUBCATPAL so that the first candidate is optimal even though it violates SUBCATPAL. The other candidates are rejected because although they satisfy SUBCATPAL in encoding the palatalizing autosegment as either a secondary (second candidate) or primary (third candidate) constriction, they both violate the dominant

⁷³ There are a few cases of /c/ being replaced with /č/ before a palatalizing suffix, for example, *təsōčni* (< *təsōc+n+i*) 'thousandth' and *sərdečni* (*sərdc+n+i*) 'sincerely'.

⁷⁴ Some examples of /r/ palatalizing before a consonant-initial suffix are given in (91), but in general, most instances of stem-final /r/ do not palatalize in this context.

⁷⁵ Further investigation is needed whether this constraint is truly active, and if not, how the lack of stem-final palatalization in words such as *wogrodŋik* can be explained.

constraint *TjC.

(94) *TjC >> SUBCATPAL

/wogrod+nik/ <- pal	*TjC	SUBCATPAL
wogrodnik		*
wogrodinik	*!	
wogroznik	*!	

To summarize, some suffixes always trigger palatalization of the final consonant in the stem to which they attach, others trigger palatalization only in consonants of a certain class or classes, and yet others trigger palatalization only sporadically or not at all. The analysis adopted here, whose elaboration involves theoretic issues beyond the scope of this thesis – as a surface-based theory, Optimality Theory has been primarily focussed on form although it has expanded into syntax in recent years, so that an OT theory of lexical selection may not be far away – involves the so-called palatalizing suffixes selectively attaching to stems with a final palatalized consonant in satisfaction of the constraint SUBCATPAL. Since stem-final labial consonants and coronal obstruents are not affected by consonant-initial suffixes, SUBCATPAL must however be dominated by some markedness constraints (*PjC and *TjC). Thus, while palatalization in Kashubian is largely accounted for lexically, namely, through allomorph selection, phonology also plays an important role in providing a limiting context.

2.4 Voicing Assimilation in Complex Onsets

Intrasyllabic harmony in Slavic manifests itself not only through

onset-nucleus sharing of place features, but also through voicing agreement within any pre-vocalic sequence of obstruents, whether they form a complex onset within a single word or not.⁷⁶ This is achieved through both regressive and progressive voicing assimilation, both of which are found in Kashubian.

2.4.1 Regressive Voicing Assimilation

The Slavic languages all share two features with respect to the voicing of onset clusters. First, a non-fricative sonorant is always voiced, even when followed by a voiceless obstruent. Second, the voicing of any obstruent cluster (within a single word or not) is determined by the lexically given voicing of the rightmost obstruent, as exemplified for Kashubian in (95).

- (95) Regressive voicing assimilation within obstruent clusters (underlined)
- | | | | |
|--------------------|----|--|-----------------------------|
| /sōsād+ka/ | —> | [su ^w sot <u>ka</u>] ⁷⁷ | (female) neighbour (Sob 90) |
| /v tix 'stāv+k+ax/ | —> | [f tix 'stœf <u>kax</u>] | in those ponds (TopC 105) |
| /sez cəxo/ | —> | [sec 'cɔx <u>wɛ</u>] | sit quietly! (TopC 106) |
| /ucek 'do dóm/ | —> | [uceg 'do dóm] | ran away home (Sob 107) |
| /tak že/ | —> | [tag <u>že</u>] | also (TopC 107) |
| /zis bōdā/ | —> | [ziz <u>buda</u>] | today (I) will (Sob 93) |

The only regular exceptions⁷⁸ to this pattern are found (a) when a pause

⁷⁶ For the sake of completeness, I extend my discussion of voicing assimilation in Kashubian beyond the narrow boundaries of the word onset in this section, as regressive voicing assimilation is active both within the onset and beyond.

⁷⁷ All phonetic detail in the transcriptions of this section are as made by the original researchers, Sobierajski and Topolińska. My only modification was to convert those letters and diacritics not already in the Kashubian orthography used in this dissertation from 1960's Polish phonetics to a recent IPA norm using the conversion charts in Sobierajski (1964) and the description of IPA diacritics in Pullum & Ladusaw (1986).

⁷⁸ I have also found a small number of exceptions, which fall into three groups:

- (a) failure of a voiced obstruent to cause voicing in a preceding obstruent
 /xłɔp 'dostá(ɪ)/ → [x^wɔp 'dostœ] 'the man got' (TopC 107)
 /'rəbək za'kłádá/ → ['rəbœk za'kwœdœ] '(the) fisherman sets' (TopC 105)
- (b) failure of a voiced obstruent to prevent word-final devoicing in a preceding obstruent

intervenes between the two obstruents, (b) when the first of the two obstruents is /x/, and (c) when the second obstruent is /v/.

Voicing assimilation serves to maintain continuity of voicing (or voicelessness), and a pause interrupts this continuity, so it is natural that voicing assimilation cannot bridge a pause. The reason /x/ is not affected by voicing assimilation, as shown in (96), is probably to be found in structure preservation. Voiceless /x/ has no voiced counterpart in the Kashubian phoneme inventory, so structure preservation apparently inhibits the creation of an unsupported sound through voicing assimilation.

(96) Obstruent clusters with /x/ as initial element (underlined)

- /z tɛx 'dalʂɛx strɔn/ → [s tɛx 'dalʂɛx strɔn] from farther away (TopC 110)
 /strax 'gɔdac/ → [strax 'gɔdac] fear of speaking (TopC 108)
 /f 'tix 'krax 'začuł/ → [f 'tɛx 'krax 'začuw] began in those calves (Sob 97)

The behaviour of /v/ can be attributed, following arguments given to account for the similar patterning of /v/ in Polish (Czaykowska-Higgins 1988) and Slovak (Rubach 1993a), to the fact that this phoneme is, in a sense, a sonorant, an analysis supported by the common realization of /v/ as [w] before /o/ in the speech of North Kashubians and older speakers of Central Kashubian. Thus, /v/ has obstruent-like behaviour in being affected by regressive devoicing as in *v tix stɔvkɔx* 'in those ponds' (95), but it also has sonorant-like

-
- /ʂed do 'ʂase/ → [ʂet do 'ʂase^ɛ] 'went to the highway' (TopC 109)
 /'pɕəʂed 'znovu/ → ['pɕəʂet 'znovu] 'came again' (TopC 108)
 (c) failure of a voiceless obstruent to cause devoicing in a preceding obstruent
 /v 'keris'bergu/ → [v 'keris'bergu] 'in Königsberg' (TopC 109)
 /v poj'marié/ → [v poj'māri] 'in captivity' (TopC 109)

The lack of devoicing in (a) and (b) might be attributed to the presence of a pause not marked in the transcription, while the unexpected voicing in (c) may be a result of speech rate, of which Topolińska gives no indication (Czaykowska-Higgins, p.c.).

behaviour in that it neither requires the voicing of a preceding voiceless obstruent (97a) nor prevents the word-final devoicing of a preceding voiced obstruent (97b).

(97) Obstruent clusters with /v/ as second element (underlined)

- | | | |
|------------------------|-------------------------------|----------------------------------|
| a. /čvarti/ | —> [ʔč <u>v</u> ærtɨ] | fourth (TopC 107) |
| /kviatə/ ⁷⁹ | —> [ʔk <u>v</u> iatə] | flowers (TopC 105) |
| /sviŋe/ | —> [ʔs <u>v</u> iŋe] | pigs (TopC 108) |
| /tak vjele/ | —> [tak ʔ <u>v</u> jele] | so much (TopC 107) |
| b. /'přæsed v er'zac/ | —> [přæset ʔ <u>v</u> er'zac] | came in a reserve ... (TopC 109) |

The effect of sonorants on the voicing of preceding obstruents varies among the Slavic languages, even varying among the Polish dialects. In south-western Poland, for example, word-final obstruents are voiced when followed by any sonorant- or vowel-initial word (pattern A), but in north-eastern Poland they are voiced only if underlyingly voiced and followed by a sonorant-initial morpheme in the same phonological word (pattern B), as shown in (98) for the phrase *brat muj* 'my brother'. In both areas, the underlying voicing of preposition-final obstruents is preserved before sonorants.

- (98) Pattern A: [± voice, – son] → [+ voice] / __ # [+ son] [brat muj]
 Pattern B: [± voice, – son] → [– voice] / __ # [+ son] [brat muj]

Although Dejna (1993) includes Kashubian among the Polish dialects having pattern A voicing assimilation before sonorants, Breza & Treder (1981: 71) state that this is true only for the dialects of the extreme south-east. All

⁷⁹ Gołąbek (1997:33) claims initial clusters written *kvi-* and *svi-* are pronounced [kj-] and [sj-] respectively, but according to Breza & Treder (1981:64-65), the *svi-* > *sj-* shift is common only in South and western Central Kashubian and *kvi-* > *kj-* (and *gvi-* > *gj-*) is common only in eastern South Kashubian. The AJK records *sj-* for *svi-* in Gołąbek's home village of Chwaszczyno, but texts recorded in neighbouring villages by Topolińska (Dobrzewino and Bojano) and Sobierajski (Kack Wielki) do not show it.

other dialects have pattern B voicing assimilation before sonorants. Thus, initial sonorants (and vowels) do not require a preceding voiceless obstruent to become voiced (99a), and they do not prevent word-final devoicing in any preceding word (99b) other than a preposition (99c).

(99) Obstruent-sonorant clusters (underlined)

a.	/set lat/	—> [set <u>lat</u>]	hundreds of years (TopC 89)
	/knáp má/	—> [knœp <u>mœ</u>]	boy has (TopC 104)
	/krávc 'nie umie/	—> [krœfc 'nie <u>umie</u>]	tailor doesn't know (TopC 104)
	/'płanōc roz'miác/	—> ['pʷʌnɔnc <u>roz'miɔc</u>]	know how to swim (TopC 106)
	/ófs je/	—> [wɔfs <u>je</u>]	oats are (TopC 105)
	/štək 'ófsa/	—> [štək 'wɔfsa]	field with oats (TopC 104)
b.	/šed na 'służbā/	—> [šet <u>na</u> 'swužbā]	joined the service (TopC 108)
	/nie móg 'uřnōc/	—> [ni mɔk 'užnɔc]	could not cut (Sob 97)
c.	/'v lese/	—> ['v <u>lese</u>]	in the woods (TopC 108)
	/'z mojō/	—> ['z <u>m</u> wōjom]	with my (I.sg.f.) (TopC 105)
	/'v naši/	—> ['v <u>naši</u>]	in our (TopC 104)
	/od 'razu/	—> [wöd 'razu]	in our (TopC 104)
	/přez 'okno/	—> [pšez 'wekno]	through the window (TopC 105)

An exception to the generalization that Kashubian sonorants are not affected by the voicing of their neighbours is the fricative trill /ř/ which, like /v/, is affected by both final-devoicing (section 3.2), and is also subject to progressive devoicing (section 2.4.2). Whether it is affected by regressive devoicing like /v/ – shown in the second example of (95) – is unclear. The examples in (100) suggest that /ř/ assimilates to a following voiceless obstruent, but regressive voicing assimilation only occurs within onsets (at the phrasal level), and the SSG should prevent /řs/ from constituting a syllable onset unless the fricative nature of /ř/ causes it to have the sonority of an ordinary sibilant, which, however, is unlikely given the facts of excrescent vowel insertion

(section 4.3).⁸⁰ Thus, the examples in (100) may just show word-final devoicing of /ř/, to be discussed in section 3.2.

(100) Regressive devoicing of /ř/

/gos'podář 'seče/ → [g^wes'pedæš 'seče] the farmer is sowing (TopC 104)
 /gos'podář po'rene/ → [g^wös'pödoš p^wo'renæ] farmer in the morning (Sob 103)

Following Lombardi (1995b, 1995c, 1998a), I account for the facts of regressive voicing assimilation as follows. Obstruents – in general, and thus also in Kashubian – are either specified for the privative feature [voice] or lack a specification for Laryngeal. The universal default is for there to be a lack of voicing, expressed by the markedness constraint *LAR (101), which counters the effect of the faith constraint IDENT(LARYNGEAL) (102).

(101) *LAR (Lombardi 1995b: 2)

Don't have Laryngeal Features.

(102) IDENT(LARYNGEAL) (IDLAR) (Lombardi 1995b: 2)

Consonants should be faithful to underlying laryngeal specification.

Since onset consonants are more salient than those in the coda, the faithful parsing of their Laryngeal specification gets special protection by means of the positional faith constraint IDENTONSET(LARYNGEAL) (103).

(103) IDENTONSET(LARYNGEAL) (IDONSLAR) (Lombardi 1995b: 2)

Onsets should be faithful to underlying laryngeal specification.

Onset consonants are not, however, all equal: in Kashubian, as in most other languages, there cannot be differences in voicing within an obstruent cluster,

⁸⁰ If word-final /ř/ can be shown to be phonetically voiced before a voiced obstruent, this would strengthen the argument that /ř/ is affected by regressive assimilation, however such an example has not yet been found in the phonetically transcribed data available to me.

in satisfaction of the constraint AGREE (104).

(104) AGREE (Lombardi 1995b: 2)

Obstruent clusters should agree in voicing.

Lombardi's research has shown that for most languages, voicing within an onset obstruent cluster is determined by the rightmost obstruent which, consistent with the SSG, is also the obstruent with highest sonority and thus has the greatest saliency. This observation is formalized through the Laryngeal Constraint (Lombardi 1995c: 42), which is defined as in (105).⁸¹

(105) LARYNGEAL CONSTRAINT (LARCON)

A Laryngeal node is only licensed in a consonant immediately preceding a tautosyllabic [+son] segment.

The interaction between the above constraints is shown in (106) for the word *sōsādka* 'female neighbour', where it is assumed that *d* is underlyingly specified for Laryngeal – the stem final voicing surfaces when the suffix *-k* is missing and a vocalic inflection follows, as in *sōsāda* 'neighbour [G.sg.]' – and is prosodified in the onset to the following vowel (see section 3.1.2); [-voice] features are understood to be filled in by the phonetic implementation. The first candidate of (106) fails because a Laryngeal node surfaces in an unlicensed position in violation of LARCON and the two obstruents of the cluster do not agree in voicing in violation of AGREE: that ID(LAR) is satisfied bears no weight since this constraint is dominated by the other two. The second candidate, which spreads voicing from the /d/ to the /k/, fails because

⁸¹ Lombardi (1999:270) covertly encodes the Laryngeal Constraint by replacing the word "Onsets" in the definition of IDONSLAR (103) with "Consonants in the position stated in the Laryngeal Constraint", but I see no reason why the Laryngeal Constraint should not be expressed overtly as a OT constraint.

although it satisfies AGREE and ID(LAR), it still violates LARCON because of the Laryngeal specification in an unlicensed position. The third candidate, then is optimal because it satisfies LARCON and AGREE (and *LAR), even though it violates IDONS(LAR) and ID(LAR) by parsing /d/ with its voiceless counterpart.⁸²

(106) AGREE, LARCON >> IDONS(LAR), ID(LAR), *LAR

/sōsād+ka/ lar	AGREE	LARCON	IDONS(LAR)	ID(LAR)	*LAR
sōsādka -vc-vc+vc-vc	*!				
sōsādga / -vc-vc+vc		*!			
☞ sōsādka \ -vc-vc -vc			*		

Following Lombardi (1995c) and Rubach (1997), sonorants are analyzed as lacking an input specification for voicing and thus neither cause nor are affected by regressive voicing assimilation. Lombardi simply states that their voicing is given postlexically, however Rubach chooses to enforce voicing specification with the constraint SONORANT DEFAULT (107).

(107) SONORANT DEFAULT (SONDEF) (Rubach 1997: 562)

All and only syllabified sonorants are [+voice].

Sonorants prosodified directly under the Prosodic Word, such as the initial /m/ in *mgta*, cannot be provided with voice by SONORANT DEFAULT (and are thus predicted to be transparent to regressive voicing assimilation) and must

⁸² To complete the analysis, it is necessary to assume that it is not possible to satisfy both LARCON and AGREE by inserting a Laryngeal specification in the licensed position under /k/ and spreading it back to /d/. A constraint like DEP(F) would rule this out.

be provided with voicing in the phonetic implementation.

The fricatives /v/ and /ř/ (in both Polish and Kashubian) seem to present a problem for an analysis such as proposed by Lombardi. On the one hand, Lombardi (1995c: 61) identifies Polish /v/ as a sonorant and says that sonorants are assigned [+voice]. On the other hand, Lombardi (1995c: 60) also cites the form *fš*i** ‘village (G.sg.)’ (</vš*i*/) as an example of the Laryngeal Constraint allowing voicing only in a segment immediately preceding a sonorant. But why isn’t this v assigned [+voice] post-lexically as other sonorants are? For this example, a solution might be found in Rubach’s definition of SONORITY DEFAULT as applying to “all and only syllabified sonorants” and seeing in the v of /vš*i*/ a sonorant which cannot be syllabified because the SSG disallows a syllable onset with a sonorant followed by a fricative. However, if this is the case, then the voicing of a /v/ in a word such as Kashubian *vzōł* ‘took’ becomes problematic, since here too there is an initial sonorant /v/ followed by a fricative, and yet in the surface form of this word the /v/ is voiced. Clearly, more study of this question is needed.

2.4.2 Progressive Devoicing

Stone (1993: 764), following Breza & Treder (1981: 72), writes that “progressive assimilation by devoicing of /v/ in such words as *twój* ‘your’ and of /r/ or /ʒ/ (orthographically *rz*) in such words as *trzeba* ‘is necessary’ does not normally occur”. If this were true, there would be little need here for a discussion of progressive devoicing. The documented evidence

available does not, however, support Stone's claim.

First, it is necessary to distinguish the behaviour of /v/ from that of /ř/. In the data available to me, the phonetic realization of /v/ is [v] or [w] following a voiceless obstruent, as shown in (97) above. The only exception (occasionally) found to this is when the preceding voiceless obstruent is /t/ and a non-round vowel follows as shown in (108).

- (108) /'za^latv^yajō/ → ['zawatfajom] take care of (3p) (TopC 97)
 /gospo'darstv^yie/ → [gospo'darstfie] farm (L.sg.) (TopC 107)
 /gospo'darstv^a/ → [gospo'darstfa] farm (G.sg.) (TopC 108)

Breza & Treder (1981: 72) also note that progressive devoicing of /v/, when it occurs at all, is most common after /t/.

As for /ř/, it should first be noted that this phoneme has the consistent phonetic realization of a fricative trill in *none* of the texts in Topolińska (1967) and Sobierajski (1964). In Topolińska's texts, some of the older speakers are recorded as using a fricative trill, but only sporadically⁸³ or only where a voiced segment is expected, such as word-initially or after a voiced obstruent. Otherwise, all speakers realize /ř/ as [ž], devoicing it to [š] after a voiceless obstruent as shown in (109).

- (109) /'křavá/ → ['kšavæ] crooked (N.sg.f.) (TopC 104)
 /'přššac/ → ['pšššac] to sew on (TopC 104)
 /přez 'okno/ → [pšez 'wekno] through the window (TopC 105)
 /'třeji/ → ['tšeji] three (mp.) (TopC 107)
 /'třecégo/ → ['tšēcigo] third (G.sg.m.) (TopC 109)

⁸³ For example, the speaker of text 3.3.1. (TopC 92) pronounces *třě* 'three' as [třΛ] but *třimalə* 'held (3p.m.)' as [třimelΛ] and the speaker of text 3.13 (TopC 109) pronounces the phrase *třě dní i třě nocě* 'three days and three nights' as [tšě dní i tře noce].

In Sobierajski's texts /ʀ/ is occasionally realized with separate rhotic and fricative elements, as [rʒ]. Here there is the possibility of retaining partial devoicing, but the only example of this is with final devoicing, where *łgāř* 'liar' is realized by Sobierajski's Slovincian informant as [li'gowrʂ] (Sob 117).

It is thus clear that in contemporary Kashubian, /ʀ/ is subject to progressive devoicing. Indeed, given that the fricative trill is also subject to progressive devoicing in Czech (where the rhotic element has not been lost), given that Dejna (1993: 110) says the fricative trill was subject to progressive devoicing in Polish even before the rhotic element was lost, and that Lorentz (1925: 88) found /ʀ/ was fully voiceless after voiceless obstruents in South (+ Central) Kashubian and had a voiceless onset in this context in North Kashubian, it is doubtful that the progressive devoicing of /ʀ/ is a recent phenomenon.

In summary, progressive devoicing seems to apply regularly to /ʀ/ but only exceptionally to /v/. Since the application of progressive devoicing to /v/ is only sporadic, it seems best not to provide a phonological account for its appearance, although the restriction on its appearance (not before rounded vowels) may be phonological in nature. The regular application of progressive devoicing to /ʀ/, on the other hand, is an effect of satisfying the contextual markedness constraint PROGRESSIVE DEVOICING (110) proposed in Rubach (1997),⁸⁴ which promotes agreement of features in a cluster.

⁸⁴ Rubach does not define Progressive Devoicing. The definition in (110) is my own.

(110) PROGRESSIVE DEVOICING (PROGDEV)

If a segment lacking the feature Laryngeal precedes /ř/, then /ř/ may not be associated with this feature either.

PROGRESSIVE DEVOICING must dominate SONORANT DEFAULT in order to prevent /ř/ from being parsed with the default [+voice] specification of sonorants.





PROGRESSIVE DEVOICING must itself be dominated by a constraint requiring the faithful parsing of Laryngeal features specified in the input form, perhaps a DEP equivalent of MAX(SUBSEG), which might be defined as in (111) – see also footnote 82.

(111) DEP(SUBSEG) “No Addition of Features”

Every subsegment in S_2 has a correspondent in S_1 .

The interaction of these three constraints is shown in (112) for the word *třə* ‘three’. Here, the first candidate is rejected because it violates PROGRESSIVE DEVOICING, while the second candidate is optimal, even though it violates SONORANT DEFAULT. Finally, adding the feature Laryngeal to /t/ and spreading it to /ř/ must also be ruled out as a violation of DEP(SUBSEG), as shown by the unacceptability of the third candidate.

(112) DEP(SUBSEG) >> PROGDEV >> SONDEF

/t ř ə/	DEP(SUBSEG)	PROGDEV	SONDEF
t ř ə -vc+vc		*!	
☞ t ř ə / -vc			* 
d ř ə / +vc	*!		

2.5 Chapter Summary

The facts described and accounted for in this chapter could, in general, be said to show that Kashubian has a moderate preference for unmarked structure and intrasyllabic harmony.

Kashubian demonstrates its preference for unmarked structure in two ways. First, it prefers syllables have an onset, which is reflected in the epenthesis of [w] whenever this is supported by the additional pressure of intrasyllabic harmony. In addition, Kashubian's preference for unmarked structure is shown in its treatment of trapped PrWd-initial sonorants. While the language has not gone so far as to eliminate such problematic consonants or syllabify them through epenthesis, evidence suggests it prosodifies them directly under the Prosodic Word rather than within a syllable, respecting the universally unmarked preference for sonority to continuously rise from the syllable margin to the peak (with sonority plateaus permitted).

The preference for intrasyllabic harmony is expressed with respect to both the features [labial] and [voice]. Vowels specified for the feature Labial promote sharing of this feature with their preceding consonant, even to the extent of supporting consonantal epenthesis. This sharing is limited only by a language-specific inability to associate secondary labial articulation with consonants having Coronal as a primary or secondary articulator. Such language-specific limitation is also observed in the sharing of the feature [voice] in consonant clusters. Both regressive and progressive voicing assimilation is observed in Kashubian, in accordance with the universal

preference for a minimization of voicing contrasts, and sonorants are generally unaffected by devoicing, in accordance with the universal preference for voiced sonorants, but regressive voicing is triggered only by obstruents (not including /v/), and progressive devoicing affects only a single consonant /r/. Thus, the universal is moderated by the specific.

Chapter 3 The Structure of the Kashubian Coda

3.0 Introduction

Just as the consonant(s) at the beginning of a syllable constitute its onset, those at the end of a syllable constitute its coda. The Slavic coda has attracted less interest among generative phonologists than the onset, but is subject to a number of interesting restrictions. First, while Slavic languages can have quite complex word-final clusters, some even allowing apparent sonority violations, there is a clear preference for assigning all intervocalic consonants to the onset of the following vowels, so that word-medial codas are rather limited in complexity (Bethin 1998). Second, the featural contrasts found in word-final clusters are limited in comparison to those found in onset position, with obstruents being voiced only as a result of regressive voicing assimilation applying at the phrasal level⁸⁵ and the occurrence of palatalized segments limited word-finally in several Slavic languages.

In this section, the properties of Kashubian codas are examined, whereby the following claims are made: (1) Complex codas are allowed only word-finally, (2) complex codas cannot contain sonority violations, (3) word-medially, the presence of a coda is allowed only to prevent a violation of the SSG, and (4) contrastive voicing specifications are neutralized in the coda.

3.1 Coda Constituency

Word-final coda complexity is clearly permitted in all Slavic languages,

⁸⁵ Among the Slavic languages, only Serbo-Croatian and Ukrainian lack prepausal devoicing.

but in at least those language on which relevant information is available it seems that word-medial codas are much more restricted.

3.1.1 Word-final Codas

Kashubian not only allows coda segments word-finally, but it allows quite complex consonant clusters in this position. In (113a) a sample of word-final single consonant clusters is given: the only segments which cannot occur word-finally in Kashubian are the palatalized labials. In (113b) a sample of two consonant final clusters is given. Here, the distribution is much less even: there are numerous final Obstruent-Obstruent clusters, of which many (but certainly not all) include the suffix *-c* or *-k*, there are a moderate number of final Sonorant-Obstruent clusters, but there are very few final Obstruent-Sonorant or Sonorant-Sonorant clusters, all of them in borrowings. Finally, there are a moderate number of three consonant final clusters (113c), perhaps all with the suffix *-c* or *-k* as the final element.

(113) Word-final clusters in Kashubian

a. Obstruent:	brat	brother	břaḍ	fruit	lāk	fear
	prac	to wash	lev	lion	pies	dog
Sonorant:	dóm	hall	jeden	one	koń	horse
	ból	pain	diabeł	devil	kraj	country
b. O-O:	piitk	drink	jesc	to eat	třask	noise
S-O:	kwuric	end	darąnk	gift	m ^w ulk	beloved
O-S:	piepř	pepper				
S-S:	šstorm	storm				
c. S-O-O:	stółčk	chair (dim)	karčk	neck (dim)	garsc	hand
O-O-O:	deščk	rain (dim)				
S-S-O:	garnk	pot				

In comparison with Polish and Russian, Kashubian has strikingly few

lexical items with rising sonority in the word-final cluster, that is, words with final trapped sonorants. Indeed, in all the vocabularies of Gołąbek (1992) and (1997) only 3 such words were found: *məsl* 'thought', *piepř* 'pepper' and *ritm* 'rhythm'. Of these, the first has an alternate form *məsel*, and the other two are borrowings.⁸⁶ In general, the Kashubian cognates of words which in Polish show a final trapped sonorant either lack the sonorant (114a),⁸⁷ resolve the entrapment by inserting a vowel (114b), or show a different morphological construction (114c).

(114)	<i>Polish</i>	<i>Kashubian</i>	
a.	jadł	jad	ate (m.sg.)
	śedł	śed	went (m.sg.)
	mugł	móg	fell (m.sg.)
b.	cikl	cikel	cycle
	bubr	bober	beaver
	viatr	viater	wind
c.	śustr	sostróf	sister (Gen.pl.)
	pieśni	piesniá	song
	bojaźni	bojactwo	fear

From these facts it may be concluded that (a) Kashubian requires all coda elements specified in the input form to be faithfully parsed in the output but (b) it requires word codas to respect the SSG, even if this requires omitting a consonant or inserting an epenthetic vowel.⁸⁸ The first conclusion may be

⁸⁶ The two borrowings are not equally accepted as Kashubian: the former is listed in Ramułt (1893), Sychta (1967ff) and Trepczyk (1994), the latter in none of these.

⁸⁷ The -ł is the only marker of past tense and the forms in (114a) are interpreted as past tense forms, so it seems ł is constrained not to appear because of the preceding stop.

⁸⁸ The insertion of an epenthetic vowel, or rather, the realization of a latent vowel, in the context illustrated in (114b) is discussed in detail in section 4.2.2.2.

formally expressed by the domination of both NO-CODA (25), the constraint banning codas, and *COMPLEX (24), the constraint banning complex syllable margins, by the Faith constraints MAX (28) and DEP (28), as is shown in (115) for the parsing of /mulk/ 'beloved'. Here, the first, second and third candidates are rejected because they violate MAX, while the fifth, sixth and seventh candidates are rejected because they violate DEP. This leaves the fourth candidate as optimal, even though it violates both NO-CODA and *COMPLEX.

(115) MAX, DEP >> *COMPLEX, NO-CODA

/mulk/	MAX	DEP	*COMPLEX	NO-CODA
m ^w u	*!*			
m ^w ul	*!			
m ^w uk	*!			
m ^w ul ^k			*	*
m ^w ulek		*!		*
m ^w ulke		*!		*
m ^w uleke		*!*		

The epenthesis of a vowel to force the syllabification of a stem-final trapped sonorant where morphology does not do this, is an effect of the high ranking of the two constraints SONORITY SEQUENCING GENERALIZATION (55) and ALIGN-R (116),⁸⁹ which Yearly (1995) and Zubritskaya (1995) claim prevents the adjunction of a word-final segment directly to the Prosodic Word in Russian.

⁸⁹ Yearly (1995:543) uses the constraint ALIGN(PRWD, R, σ, R) which has equivalent effect in Kashubian. For the sake of consistency with ALIGN-L and comparability with other cases of ALIGN(GCat, Edge, PCat, Edge) discussed in McCarthy & Prince (1993b), I adopt the constraint proposed by Zubritskaya.

(116) ALIGN-R

The right edge of a Lexical word must coincide with the right edge of a syllable: ALIGN(LEX,R, σ ,R)

The interaction of the SSG and ALIGN-R is shown through the parsing of *viater* 'wind (N.sg.)' in (117), which is compared with that of *viatrā* 'wind (N.pl.)' in (118). In (117), the first candidate is rejected because it fails to parse an input segment, violating MAX, the second because it has a coda with rising sonority, violating the SSG, and the third because the stem-final syllable is not included in a syllable, which constitutes a violation of ALIGN-R. This leaves the fourth candidate as optimal, because although it violates DEP by including an epenthetic element, it satisfies the three higher ranking constraints. By comparison, the vowel-final input form in (118) can be parsed by the second candidate without violating any of the four constraints, and other candidates are easily rejected because of MAX or DEP violations.

(117) MAX, SSG >> ALIGN-R >> DEP

/viatr/	MAX	SSG	ALIGN-R	DEP
$P_{rWd}[\sigma(viat)]r$	*!			
$P_{rWd}[\sigma(viatr)]$		*!		
$P_{rWd}[\sigma(viat)r]$			*!	
$P_{rWd}[\sigma(via)(ter)]$				*

(118) MAX, SSG >> ALIGN-R >> DEP

/viatr+ə/	MAX	SSG	ALIGN-R	DEP
$P_{rWd}[\sigma(viat)]rə$	*!*			
$P_{rWd}[\sigma(via)(trə)]$				
$P_{rWd}[\sigma(via)(te)(rə)]$				*!

3.1.2 Word-medial Codas

Word-medial codas are not as accessible to the outside observer as are those found word-finally, but some reliable information about their structure is available. According to Lorentz (1925: 92), “the syllable division in most dialects [of Kashubian] is the same as in Polish: in consonant clusters the boundary lies as far forward as appears in the maximal attested word-initial consonant cluster.”⁹⁰ This is not in complete agreement with modern descriptions of Polish syllabification given in Rubach & Booij (1990b) and Bethin (1992), but it is similar to earlier descriptions of Polish syllabification such as that of Kuryłowicz (1952), and since the preliminary feedback from a questionnaire on Kashubian syllable structure which I designed (see section 1.1.2.2 and Appendix) indicated that Kashubians syllabify words in much the same manner as do Poles, I assume the findings of Rubach and Bethin are applicable to Kashubian. These findings are given in (119) with examples drawn from my questionnaire (syllable boundaries are marked by periods).

⁹⁰ In the original German: In den meisten Dialekten ist die Silbentrennung dieselbe wie im Pol., die Grenze liegt bei mehrfacher Konsonanz so weit zurück, als die hinter ihr stehende Konsonantengruppe im Wortanfang vorkommt oder möglich ist.

(119) Syllabification of word-medial clusters in Kashubian

Speakers are in strong (90%+) agreement that:

- syllabification cannot cross the boundary between compounded roots

na.təx.sto.pax	na√təx√stop+ax	at once
šesc.ra.zo.vi	√šesc√raz+ov+i	six times (adj)
- syllabification cannot generally cross the prefix-stem boundary⁹¹

wob.kła.ɖka	wob√kłaɖ+k+a	cover
pwoɖ.čəc	pwoɖ√čə+c	to eavesdrop
- syllabification can cross the prefix-stem boundary if the stem has (a) an initial trapped sonorant⁹² or (b) a very heavy onset⁹³

(a) wom.gla.ti	wov√mgl+a+t+i	fainted (N.sg.m.)
přin.ze	přiv√n̩z+e	come (3s.pr.)
(b) pwoz.dřatk	pwov√zdř+at+k	view
- an initial sonorant is syllabified as a coda to the preceding vowel⁹⁴

kvar.tal.ni	quarterly	biał.ka	woman
kar.čma	inn	ceř.pnōc	to grow numb
maŋ.glar.ria	cleaners	spwo.koj.ni	calm

Speakers are also in moderate (60%+) agreement that obstruents, in particular stops, should be syllabified in the onset to the following vowel.

do.bře	well	ba.vi.dło	toy
--------	------	-----------	-----

Following Zubritskaya's analysis of Russian syllabification, I assume that ALIGN-L (36), shown in sections 2.1 and 2.2 to be highly ranked in Kashubian, is responsible for the prohibition on syllabification within a compound and across a prefix-stem boundary, since all syllables must be properly contained

⁹¹ A prefix-stem boundary can affect syllabification only if speakers are aware of it. The Kashubian word *rozəmni* 'reasonable' is derived historically by *roz-* being prefixed to the root *um-*, but it is now syllabified as if it did not have a prefix-root boundary.

⁹² A study by Rubach & Booij (1990b) indicated only a moderate preference for a trapped stem-initial sonorant to be syllabified as a coda to the preceding vowel in Polish, but in Kashubian, there seems to be a strong preference for this syllabification.

⁹³ Rubach & Booij (1990b) found two words with heavy onsets whose initial element could be syllabified with a preceding prefix: *ovxřcić* 'baptize' and *vivkpić* 'ridicule'.

⁹⁴ Rubach & Booij (1990b) found a very strong preference for sonorants to pattern this way in Polish. In Kashubian, I found an equally strong preference for this pattern among the liquids (l, ł, r, r), but only a moderate preference for it among the other sonorants.

within a Prosodic Word, and ALIGN-L requires the left stem edge to coincide with the left edge of a Prosodic Word. Thus, in (120) the first candidate parse of the input /podčac/ 'to eavesdrop' is rejected because in minimizing violation of NO-CODA it incurs an unacceptable violation of ALIGN-L, while the second, which satisfies ALIGN-L at the cost of incurring a second violation of NO-CODA, is optimal.

(120) ALIGN-L >> NO-CODA

/podčac/	ALIGN-L	NO-CODA
po.dčac	*!	***
☞ pod.čac		**

That PrWd-stem alignment can be violated in order to break up a sonorant-initial or heavy cluster, on the other hand, shows that the SSG (55) dominates ALIGN-L in Kashubian, exemplified here in the parsing of /omglati/ 'fainted'.

(121) SSG >> ALIGN-L

/omglati/	SSG	ALIGN-L
o.mglati	*!	***
☞ o.m.glati		*
omg.lati		**!

Here the first candidate is rejected even though it correctly left-aligns Prosodic Word and stem. The second candidate is selected as optimal because it avoids a violation of the SSG and violates ALIGN-L minimally, unlike the third candidate, which incurs an extra violation of ALIGN-L by allowing two segments to intervene between the left edge of the Prosodic Word and the left edge of the stem.

Since the SSG dominates ALIGN-L and ALIGN-L dominates NO-CODA, so by transitivity must the SSG also dominate NO-CODA. This prediction is borne out by the fact that the initial sonorant of a PrWd-medial cluster is syllabified in the coda of the preceding vowel. That the dominance relation SSG >> NO-CODA gives this result is exemplified in (122) for the word *karčma* ‘inn’. Here, the first candidate is rejected because although it satisfies NO-CODA, it violates the higher-ranking SSG, the second candidate satisfies the SSG at the cost of violating NO-CODA, while the third candidate not only violates NO-CODA by parsing a coda, but gratuitously parses an additional element into the coda, thereby violating the version of *COMPLEX (24) affecting codas (COMPLEX-CODA).⁹⁵ Since the second candidate is selected as optimal, *COMPLEX-CODA must dominate NO-CODA.

(122) SSG, *COMPLEX >> NO-CODA

/karčma/	SSG	*COMPLEX-CODA	NO-CODA
ka.rčma	*!		*
kar.čma			*
karč.ma		*!	*

Given that ONSET (25) dominates ALIGN-L, as argued in section 2.1, and that any sequence of obstruents constitutes a legitimate onset in Kashubian, as argued in section 2.2, the constraint ranking ONSET >> (ALIGN-L) >> NO-CODA ensures both that any single intervocalic consonant is parsed as an onset rather than a coda and that a cluster-initial obstruent is parsed in the onset to

⁹⁵ Since informants in my study preferred the division *kar.čma* to *karč.ma* by a ratio of 9:2, it would seem that *COMPLEX-CODA dominates *COMPLEX-ONSET in Kashubian.

the following vowel. The latter case is exemplified for the input /baviidło/ 'toy' in (123), where the first candidate parse which satisfies both ONSET and NO-CODA is preferred over any candidate which violates ONSET.

(123) ONSET >> NO-CODA

/baviidło/	ONSET	NO-CODA
☞ ba.vji.dło		
ba.vjid.ło		*!
ba.viidł.o	*!	*!

An exception to the generalization that a cluster-initial obstruent is syllabified in the onset to the following vowel is found where a sonorant is trapped between two segments of lower sonority, as in the word *bezməsłni* 'thoughtless',⁹⁶ where the high sonority liquid (l) is trapped between a low sonority fricative (s) and a middle sonority nasal (n). Including the /l/ in the onset of the following vowel is ruled out by the SSG here, so the preceding /s/ is also prevented from being syllabified in an onset. Thus, Poles asked about the syllabification of *pjɔsɲka* 'song', *pjɛrvjɔsɲki* 'primroses' and *karmɲnik* 'feeder' (Rubach & Booij 1990b: 438) and Kashubians asked about the syllabification of *bezməsłni* all agreed that the initial /s/ of the problematic clusters (underlined) should be syllabified in the coda to the preceding vowel, and they were equally divided on whether to assign the trapped sonorant to the first syllable or the second. According to Rubach & Booij (1990b), these facts are indicative of the trapped sonorant in these words being prosodified

⁹⁶ This word, taken from Trepczyk (1994), cannot be verified as authentically Kashubian in Sychta (1967ff); however the latter does provide comparable authentic forms such as *letkwoməsłni* 'reckless', *vəməsłni* 'sophisticated' and *zməsłni* 'clever'.

directly under the Prosodic Word. In this way, the SSG is satisfied in both the onset and the coda, at the cost of EXHAUSTIVITY (56): in section 2.2 the dominance relation SSG >> EXHAUSTIVITY was established for the onset; now it is established for both onset and coda. This is exemplified in (124), where the first and third candidates are ruled out by coda and onset violations of the SSG respectively, while the second candidate, which completely satisfies the SSG while violating lower ranked EXHAUSTIVITY, is selected as optimal – MAX and DEP must, of course, also be satisfied as in tableau (58).

(124) SSG (onset, coda) >> EXHAUSTIVITY

/(bez)məslni/	SSG (onset)	SSG (coda)	EXHAUSTIVITY
(bez) _{PrWd} [_σ (məsl) _σ (ni)]		*!	
☞ (bez) _{PrWd} [_σ (məs) _l _σ (ni)]			*
(bez) _{PrWd} [_σ (məs) _σ (lni)]	*!		

3.2 Final Coda Simplicity

As in many other languages, word-final codas have reduced complexity in Kashubian. First, just as labial consonants are unable to maintain secondary palatalization immediately before another consonant, as shown in section 2.3, so too are they unable to express an underlyingly specified secondary articulator when word final, as shown in (125).

(125)	<i>with palatalization</i>	<i>w/o palatalization</i>	
/robi/	robjic (3s.pr.)	rob (sg.imp.)	do
/kətpi/	kətpja (Gen.sg.)	kətp (Nom.sg.)	swan
/səpi/	səpie (3s.pr.)	səp (sg.imp.)	pour
/krvi/	krəvia (Gen.sg.)	krəv (Nom.sg.)	blood
/movi/	m ^w ovii (3s.pr.)	m ^w ov (sg.imp.)	speak

Second, all voiced obstruents as well as the obstruentized sonorants /v/ and /r/ are devoiced word-finally unless directly followed by a voiced obstruent, as can be seen in (126) and elsewhere in this thesis – all word-final consonants represented with an underring (Ç) are segments with a [+voice] input specification affected by word-final devoicing.

(126)	<i>without devoicing</i>	<i>with devoicing</i>	
/jad/	jadła (3s.pt.f.)	jaɖ (3s.pt.m.)	eat
/mog/	mogła (3s.pt.f.)	mog (3s.pt.m.)	able to
/brad/	bradu (G.sg.)	brad (N.sg.)	fruit
/lev/	lva (G.sg.)	lev (N.sg.)	lion
/robi/	robiic (3s.pr.)	roɓ (sg.imp.)	do
/movi/	mwovii (3s.pr.)	mwov (sg.imp.)	speak

Both word-final devoicing and the featural limitation in word-final codas can be seen, following Lombardi (1995a), as the effect of a general constraint on coda complexity, whose effects are not seen elsewhere in the syllable because of a positional faithfulness constraint.⁹⁷

3.2.1 Labial simplification

As already seen in section 2.3.3, labials associated with a secondary coronal feature cannot appear in Kashubian surface forms before another consonant. This was attributed to the effect of the constraint *PjC, required because secondary coronalized labials are perceptible only with difficulty before other consonants. In Kashubian, secondarily coronalized labials are

⁹⁷ As Itô & Mester (1995) note, a positional faithfulness constraint such as IDONSETLAR (103) may be understood as the conjunction of a general faithfulness constraint, * [+voice, -son], with a position-specific constraint, NO-CODA. The use of conjunction may sometimes be necessary and in some cases (see Zoll 1998) preferable to positional faithfulness, but it is a powerful tool whose use should, in my opinion, be restrained.

also banned from word-final position, but here perceptibility is probably not a factor, since some Slavic languages, such as Russian, do have secondarily coronalized labials word-finally (e.g. the Russian word *liubovʹ* 'love'). Rather, here I believe we have evidence of reduced complexity in coda position.⁹⁸

In addition to arguing that the behaviour of laryngeal features is best described in terms of positional faithfulness, Lombardi has shown, e.g. in Lombardi (1998b), that place features are also amenable to analysis in terms of positional faithfulness. Following this approach, the distribution of labials with and without secondary features in Kashubian may be accounted for in terms of the interaction of a constraint banning secondary features in general, *SEC (127), and a constraint requiring faithful parsing of secondary features in onsets, IDENTONSET(SEC) (128), of which *SEC(COR) (71) is a more specific version.

(127) *SEC

No segment may be associated with a secondary articulator.

(128) IDENTONSET(SEC)

An output segment in onset position has identical values for any secondary articulation as its input correspondent.

Because of the dominance relation between *SEC and IDENTONSET(SEC), the candidate in (129) where the input /kǎɫpi+a/ 'swan (Gen.sg.)' is faithfully parsed with a palatalized labial must be optimal because although it violates the more general constraint *SEC, it satisfies the more specific constraint IDENTONSET(SEC). The first candidate, on the other hand, is rejected because although it satisfies the more general constraint *SEC, it violates dominating

⁹⁸ Also, *PjC applies in onset clusters, so an explanation appealing to demands for low complexity in coda structures cannot replace *PjC.

IDENTONSET(SEC).

(129) IDENTONSET(SEC) >> *SEC

/kɔ̃tɕi+a/	IDONS(SEC)	*SEC
kɔ̃t.pa	*!	
☞ kɔ̃t.pja		*

By contrast, where the palatalized labial of the input /kɔ̃tɕi/ 'swan (Nom.sg.)' is faithfully parsed, as in the second candidate of (131), IDENTONSET(SEC) is vacuously satisfied since the segment in question is not in an onset, and so the candidate fails because of the violation of *SEC. The first candidate, which does not violate *SEC, is thus chosen as optimal. Satisfying *SEC by the non-parsing of an articulator specified in the input necessarily entails a violation of the Faith constraint IDENT(SEC) (130).

(130) IDENT(SEC)

An output segment should have the same value for any secondary articulation as its input correspondent.

Thus, while the first candidate in (131) may not violate IDENTONSET(SEC) or *SEC, it does violate the dominated constraint IDENT(SEC).

(131) IDENTONSET(SEC) >> *SEC >> IDENT(SEC)

/kɔ̃tɕi/	IDONS(SEC)	*SEC	IDENT(SEC)
☞ kɔ̃tɕ			*
kɔ̃tɕi		*!	

3.2.2 Final devoicing

Word-final devoicing is handled in a similar manner to labial simplification, using the constraints on laryngeal features already presented in section 2.4.1. Any appearance of the feature Laryngeal in an output form

violates the constraint *LAR (101), repeated here as (132).

- (132) *LAR
Don't have Laryngeal Features.

Since voiced segments do appear in the syllable onsets of Kashubian words, *LAR must be dominated in Kashubian by the constraint requiring faithful parsing of underlying laryngeal features in onsets, IDENTONSET(LARYNGEAL) (103), repeated here as (133).

- (133) IDENTONSET(LARYNGEAL)
Onsets should be faithful to underlying laryngeal specification.

The candidate in (134) where the input /baɾia/ 'squash' is faithfully parsed with a voiced [b] must thus be optimal, because although it violates the more general constraint *LAR, it satisfies the more specific IDENTONSET(LAR). The second candidate, on the other hand, is rejected because although it satisfies the more general constraint *LAR, it violates the dominating constraint IDENTONSET(LAR).

- (134) IDENTONSET(LAR) >> *LAR

/baɾia/	IDONS(LAR)	*LAR
baɾia		*
ɓaɾia	*!	

By contrast, the faithful parsing of the [+voice] feature specified for the final segment in the input form /xleb/ 'bread' results in rejection, as shown for the first candidate of (136). Here the segment in question is not in onset position, so IDENTONSET(LAR) is vacuously satisfied, and the candidate fails because of the violation of *LAR. The second candidate violates the general Identity

constraint on laryngeal features, IDENT(LAR) (102), repeated here as (135), but it does not violate dominant *LAR, and is thus chosen as optimal.

(135) IDENT(LARYNGEAL)

Consonants should be faithful to underlying laryngeal specification.

(136) IDENTONSET(LAR) >> *LAR >> IDENT(LAR)

/xleb/	IDONS(LAR)	*LAR	IDENT(LAR)
xleb		*!	
xleb			*

While my account of voicing assimilation and final devoicing are applied here at the word level, it should be noted that it also accounts for phrase level voicing assimilation. Thus, in the phrase [stød do 'vojska] 'from there to the army' (TopC 108), the final segment of /stød/ 'from there' is voiced. This can be accounted for by assuming that in the lack of a pause between words, the final obstruent of one word and the initial obstruent of the following word may form a prevocalic cluster, in which case LARCON (105) will license only the Laryngeal feature of the obstruent standing immediately before a sonorant/vowel and AGREE (104) will require all other obstruent members of the cluster to have the same voicing. In the case in point, the /d/ of *do* can surface with the feature Laryngeal because it is in a position licensed by LARCON, and the spreading of Laryngeal to the /d/ of *stød* is enforced by AGREE because the two d's (apparently) form an obstruent cluster. In other words, what is usually described as final-devoicing may be better described as a return to the default voicing state for obstruents [- voice] in a weak (non-salient) position, from which they leave whenever possible.

3.3 Chapter Summary

The linguistic facts described and accounted for in this chapter show that Kashubian has a strong preference for simple codas, although there are conditions under which a certain degree of complexity is tolerated.

In word-final position, complex codas are tolerated, as long as they do not have rising sonority. Thus, the faithful parsing of segments and segment sequences as specified in the input is preferred, as long as this can be done within the limits established by the Sonority Sequencing Generalization. In the face of SSG violations in word-final position, Kashubian resolves the potential danger by allowing a vowel to appear, breaking up the consonant cluster, although in certain cases (the past tense morpheme *-ł*) an alternative resolution is taken: leaving the segment unparsed.

In word-medial position, single consonants are always syllabified with the following vowel, allowing the preceding vowel to have no coda at all. This is also the case with word-medial consonant clusters, although here the preference is not as strong, and if the cluster has an initial sonorant, it must be syllabified in the coda to the preceding vowel in order to prevent an SSG violation.

Kashubian also has other means of simplifying coda structure in word-final position: labial simplification and final devoicing. Palatalized labials may not occur in word-final position. This is seen as the expression of a constraint prohibiting structure (here: secondary articulations) whose effects are obscured in onset position but not in the coda. This approach is also

adopted in accounting for devoicing of word-final obstruents: a general preference for simplicity (lack of laryngeal specification) cannot manifest itself in onset position because of a dominating Identity constraint but is allowed free expression in word-final codas.

Thus, coda simplicity expresses itself, when possible, in both a preference for minimal structure and featural simplicity.

Chapter 4 The Structure of the Kashubian Nucleus

4.0 Introduction

While an onset is a preferred but not obligatory component of every syllable, and a coda is a sometimes undesired but usually tolerated element, the syllable peak or nucleus is by definition a necessary component for every syllable, for every segment can be said to have some sonority, every syllable consists of at least one segment, and thus within every syllable there is arguably a point of highest sonority, the nucleus. A number of features of the Slavic syllable nuclei have been the focus of investigation in generative phonology, but the pandemic vowel~zero alternation, and, to a lesser extent, alternations in vowel quantity, both reflecting the 12th century loss of the Common Slavic yer vowels (reflexes of PIE *ī and *ū), have received by far the most attention. Other topics, such as the realization of nasal vowels and the [i] ~ [ɨ] alternation in Polish, vowel reduction in Russian, and diphthongization in Slovak, are language-specific topics dealing with the syllable nucleus which have been discussed in the generative phonology literature.

This section examines the predictable properties of the Kashubian syllable nucleus, with attention focussing on (1) vowel raising in certain morphological and phonological contexts, and (2) vowel~zero alternation. Both phenomena can be, at least partly, attributed to reflexes of the Slavic yers: in the case of vowel raising, the word-final yers left behind a latent segment consisting only of a mora, and the morphological information

carried by this segment is preserved by attaching the moraic yer to an adjacent consonant, which passes it onto the preceding vowel, and there it is reflected as increased vowel height. In vowel~zero alternation, word-medial yers have left behind a latent segment consisting only of a feature (probably [VPlace]) which can be parsed as a full vowel only in certain syllabic environments. Finally, the chapter concludes with a short discussion of Kashubian minor syllables, in which I show that the appearance of some schwas is merely an expression of minimal syllabicity and not due to a latent vowel.

4.1 Vowel Raising

The vowels of Kashubian which can be established as independent phonemes through minimal and sub-minimal pairs (Breza & Treder 1981) are represented in (137) in a manner showing their articulatory height relative to each other.

(137) The vowel phonemes of Kashubian

		oral			nasal
	i			u	
	é	ə		o	ō
		e	á	o	
			a		ã

While on the one hand these eleven vowels can be found in contrasting environments, on the other they clearly form six vowel pairs having a contrast in tongue root advancement, as given in (138).

(138)	- ATR	+ ATR
	(open)	(closed)
high front	ə	i
high back	ɔ	u

mid front	e	é
mid back	o	ó

low oral	a	á
low nasal	ã	õ

Studies of the historical phonology of Kashubian (Lorentz 1925, Stieber 1973, Topolińska 1974) indicate that the alternation between open and closed vowels called here *vowel raising* arose through compensatory lengthening, contraction, and tonal lengthening, with a former quantity distinction now realized as a height distinction. In lengthening/raising environments low and mid open (formerly short) vowels were *raised* in height to become closed vowels: hence the term *vowel raising*. It must, however, be noted that raising environments only preserved the height of the high vowels /i/ and /u/, leaving them to lower and centralize (to schwa) in most other contexts.⁹⁸

There are a number of morphological contexts where the closed/raised member of each open/closed pair is consistently preferred. The inflectional suffixes of most adjectives, as exemplified for the adjective *stari* 'old (m.sg. animate)' in (139a; see also 15),⁹⁹ have an initial closed vowel, while the

⁹⁸ The high vowels also remained closed when sharing a feature (coronal or labial) with a preceding consonant.

⁹⁹ These correspond to the long adjectival desinences in other Slavic languages. Kashubian also has some adjectives with short (open) adjectival desinences: of these, only the demonstrative *ten*, the possessive adjectives, and the number *jeden* 'one' are used attributively, i.e. with inflections other than that of Nominative case.

inflectional suffixes of nouns, exemplified for the noun *xłop* ‘man’ in (139b; see also 14), generally have an initial open vowel.

(139) <i>case</i>	a. adjectival inflection	b. nominal inflection
Nominative	stāri	xłop
Genitive	stārégwo	xłopa
Dative	stāremu	xłop ^w ovi
Accusative	stārégwo	xłopa
Instrumental	stārim	xłopā
Locative	stārim	xłopie
Vocative	stari	xłopie

A number of verbs require a closed root vowel in certain inflectional forms (present and past tense, but not infinitive or imperative): that this is a purely morphological requirement can be seen in (140), where the present tense, past and imperative forms of four verbs with root raising stems, *davac* ‘to give’, *bəvac* ‘to be (habitually)’ *gadac* ‘to talk’ and *latac* ‘to fly’ are compared with their infinitives and the phonologically comparable verbs *čətac* ‘to read’ and *jaxac* ‘to travel’, in which there is no raising of the root vowel.

(140) Morphologically triggered raising in verb stems

<i>Infinitive</i>	<i>1s.pr.</i>	<i>3s.pr.</i>	<i>f.sg.pt.</i>	<i>sg.imp.</i>
<i>davac</i>	dāv ^w óm	dāva	dāva(łā)	dāvaj
<i>bəvac</i>	biv ^w óm	bivā	biva(łā)	bivaj/bəvaj
<i>gadac</i>	gādóm	gādā	gāda(łā)	gadāj
<i>latac</i>	lātóm	lātā	lata(łā)	lataj/lataj
<i>čətac</i>	čətóm	čətā	čəta(łā)	čətāj
<i>jaxac</i>	jaxóm	jaxā	jaxa(łā)	jez(ə)

The verbs given in (140) show an additional context where a closed vowel is

preferred. All conjugation III and IV verbs¹⁰⁰ form their present tense (except 3p) and imperative forms with a closed verbalizing suffix (VS) vowel.¹⁰¹ This is shown in (141) with a comparison of the infinitive, 2s, 2p and 3p present tense forms, and the f.sg. past forms of the verbs *pisac* 'to write', *robiic* 'to do', *čatac* 'to read' and *jesc* 'to eat'.

(141) Morphologically triggered raising in verb endings

Conj	Infinitive	2s.pr.	2p.pr.	3p.pr.	f.sg.pt.
I	pisac	pišeš	piišeta	piišō	piisa(ł̥a)
II	robiic	robiiš	robiita	robiō	robii(ł̥a)
III	čatac	čataš	čata̦ta	čatajō	čata(ł̥a)
IV	jesc	jěš	jěta	jějō	jadł̥a

Beyond these morphological contexts for vowel raising, there is also a phonological context where raising is consistently found, namely, in stem-final syllables closed by a sonorant or an underlyingly voiced obstruent. This is shown in (142), where words with stem-final open syllables on the left are contrasted with words having stem-final closed syllables on the right.

(142)	St-final open syll	St-final closed syll	
	Genitive sg.	Nominative sg.	
ə : i	gř̥aba	gř̥iɸ	mushroom
	səna	sin	son
ə : u	br̥adu	bruɸ	dirt
	ɸł̥aga	ɸł̥uɸ	plough
e : ɛ	xleba	xleɸ	bread

¹⁰⁰ I follow the classification of Breza & Treder (1981), as does Stone (1993). In North Kashubian, some conjugation III verbs have 1s forms in *-ajā* rather than *-óm*, and two verbs (*grac* 'to play' and *znac* 'to know') replace *-a* with *-aje* in all other persons as well.

¹⁰¹ Conjugation II verbs use the verbalizing suffix *-i* and thus have a raised vowel in almost all verb forms, but this is of little interest to the study of vowel alternations. Of equally little interest is the fact that the 3p. person/number marker is a raised vowel, *-ō*. The raised vowel in conj. IV forms represents a contraction of the root and VS vowels.

(142...)	vľascæcela	vľascæcel	owner
o : �	rogwu	r�g	horn
	domwu	d�m	house
a : �	břadu	břađ	fruit
	kaľu	kaľ	mud
� : �	ks�za	ks�z	priest

Stem-final syllables closed by a voiceless consonant do not show such a contrast, as is exemplified in (143).

(143)	St-final open syll	St-final closed syll	
	Genitive sg.	Nominative sg.	
� : �	x�ĉa	x�ĉ	cottage
e : e	besu	bes	lilac
	mĭexa	mĭex	bag
o : o	xľopa	xľop	man
	kwořa	kwoř	basket
a : a	lasa	las	forest
	brata	brat	brother

A related alternation is that of a :  , for which examples are given in (144). Here, in stem-final syllables closed by a nasal, low open /a/ is raised all the way to mid closed / /; /a/ is also nasalized in this context and thus pronounced exactly like the phoneme / / , whose presence in the inventory may provide a target outcome for this double-raising of /a/.

(144)	a : �	sama (N.sg.f.)	s�m (N.sg.m.)	alone
		pana (G.sg.)	pon (N.sg.)	master

Although vowel raising is most commonly and consistently encountered in masculine nouns in the Nominative singular, as shown in (142), it is also found in feminine and neuter nouns with a voiced stem-final

consonant and a zero desinence in the Genitive plural,¹⁰² as shown in (145).

(145)	St-final open syll	St-final closed syll	
	Nominative sg.	Genitive pl.	
ə : i	rəba	riḃ	fish
	g ^w oʒəna	g ^w oʒin	hour
o : ó	słovo	słov	word
	p ^w ole	p ^w ól	field

Vowel raising is sometimes found before a consonant-initial suffix, mostly commonly the diminutive suffix *-k*, when it attaches to a stem with a final voiced consonant, as shown in (146).¹⁰³

(146)	base noun		+ derivational suffix	
	słəga	servant	słuźba	< słəg+b+a service
	gdova	widow	gdovc	< gdov+c widower
	xcəvi	miserly	xcivc	< xc+əv+c miser
	kava	coffee	kāvka	< kav+k+a coffee (dim.)
	sano	hay	soŋk ^w o	< san+k+o hay (dim.)
	sarie	sleigh	soŋci	< sarı+k+i sleigh (dim.)
	zewus	girl	zəvčā	< zew(us)+k+ā girl
	jag ^w oda	blueberry	jag ^w oḃka	< jagod+k+a blueberry (dim.)
	kwoza	goat	kwoźka	< koz+k+a goat (dim.)
	kwoło	circle, wheel	kwołk ^w o	< koł+k+o circle, wheel (dim.)
	jezoro	lake	jezorko	< jezor+k+o lake (dim.)
	krova	cow	krovka	< krov+k+a cow (dim.)
	vāda	fishing rod	vōḃka	< vād+k+a fishing rod (dim.)
	kwoza	goat	kwozlā	< koz+l+ā kid (young goat)
	jezoro	lake	jezorni	< jezor+n+i lake (adj.)
	jag ^w oda	blueberry	jag ^w oḃnik	< jagod+nik blueberry seller
	jezoro	lake	jezersci	< jezor+sk+i lake (adj.)

¹⁰² Many Genitive plural forms lacking a phonetically interpretable desinence have been replaced by forms with the suffix *-of*, such that zero-ending Genitive plurals are now rare in South Kashubian and used only with a small number of mostly feminine nouns in Central Kashubian.

¹⁰³ The raising effect of the diminutive suffix *-k* is unpredictable. For example, the Gen.pl. of *g^woʒəna* 'hour' has raising (*g^woʒin*), its diminutive (*g^woʒəŋka*) does not.

compare with

jagwoda	blueberry	jagwodłavi	< jagod+läv+i	blueberry (adj.)
kwoza	goat	kwozłovi	< koz+l+ov+i	billy-goat (adj.)

Like o-raising in Polish (Bethin 1992: 166f), where vowel-raising once affected all non-high vowels, Kashubian vowel-raising has some exceptions, even in the native vocabulary. Since closed vowels are independent phonemes in Kashubian, the lack of alternation in a pair such as *sōd* (N.sg.) /*sōdu* (G.sg.) ‘court (of law)’ is not problematic, but the lack of raising where its structural context is met, as in a word such as *kam* ‘stone’,¹⁰⁴ means that vowel raising must be lexically restricted. The lexical nature of the alternation in contemporary Kashubian is also indicated by its occasional extension to stems ending in a voiceless consonant before the diminutive suffix -k, as in *lask* (< las+k) ‘small wood’ and *miešk* (mieš+k) ‘small sack’. Nevertheless, since it seems to have a clearly definable phonological context and has a wide application throughout the lexicon, it seems appropriate to give it a phonological account where this is possible, keeping in mind that some alternations, such as those presented in (140) and (141), would need to be determined by morphological contexts (e.g. VS vowel is raised when verb of category III is used in present tense with 1s subject). I suggest that whatever mechanism is used to match stems with declensional patterns should also account for the morphologically determined distribution of vowel raising.

¹⁰⁴ In Polish, o-raising “is not commonly found before ... nasals” (Bethin 1992:167), however the examples in (99), (101) and (102) show that a similar restriction on vowel-raising clearly does not apply in Kashubian.

Given the origin of the Kashubian closed vowels as long vowels, it is probable that they were bimoraic. One generally accepted criterion for the heaviness of vowels is their ability to attract stress, and Topolinska (1964) has shown that closed/long vowels were stress-attracting in early Kashubian. The stress system of contemporary (Central) Kashubian does not seem to give a special role to closed vowels (any longer), but this is not necessarily of significance, since the retention of quantitative vowel distinction in Kashubian has been argued (Stieber 1973, Topolinska 1974) to have continued at least into the seventeenth century when the open/closed vowel alternation of Kashubian was well established. Thus, in examining the phonological conditions for the open/closed vowel alternation in Kashubian, we may need to assume conditions which no longer exist. For the purpose of the argument I will thus assume that the closed vowels in Kashubian, regardless of their origin, are heavy or bimoraic, whereas the open vowels are light or monomoraic. The distribution of weight in output forms is constrained to correspond as faithfully as possible to the distribution of weight in the input. This correspondence is enforced by the constraint *WT-IDENTITY*, proposed in McCarthy (1995) and defined as follows:

(147) *WT-IDENTITY*

Monomoraic input vowels are monomoraic in the output.

Bimoraic input vowels are bimoraic in the output.

To preserve the identity of heavy vowels, *WT-IDENTITY* needs to dominate the markedness constraint *NO LONG VOWELS* proposed by Rosenthal (1997) and defined as in (148). Their interaction is shown in (149), where the optimal

candidate is the one which satisfies WT-IDENTITY by parsing an input closed vowel as an output closed vowel, even though this violates NO LONG VOWELS.

(148) NO LONG VOWELS (NLV)
Vowels may not be long.

(149) WT-IDENTITY >> NO LONG VOWELS

	WT-IDENTITY	NLV
/sōd/ /\ μ μ		
sāḍ μ	*!	
sōḍ /\ μ μ		*

Where the input form contains an open vowel, it is expected that WT-IDENTITY and NO LONG VOWELS will collaborate to enforce the faithful parsing of this vowel. This is true for the parsing of /brat/ as [brat], but not for the parsing of /xleb/ as *[xleb]. Thus, (1) it must be possible to add weight to a vowel and (2) there must be some source of the extra weight.

To enable the addition of weight to a vowel, I suggest that WT-IDENTITY is dominated by the constraint MAX-μ (150) expressing the widely observed tendency to preserve syllable weight.

(150) MAX-μ
Every mora in S_j has a correspondent in S_0 .

The constraint ordering MAX-μ >> WT-IDENTITY is shown in (151) for the form brāḍ 'fruit' whose underlying form has an open vowel and an extra mora.

(151) Max- μ >> WT-IDENTITY

/xleb/		MAX- μ	WT-IDENTITY
μ μ			
xleb			
		*!	
μ			
xleb			
/\			*
μ μ			

Following the analysis by Ní Chiosáin (1991) of similar facts in Irish, I propose that the source of the extra mora is the stem-final consonant, which is lexically associated with this weight element. The association must be lexical, because while it is true that most of these mora-bearing consonants are of high sonority (or at least voiced), it cannot be said that an open vowel is replaced by a closed one in a stem-final syllable closed by **any** stem-final sonorant – even less by **any** stem-final voiced obstruents, as Anderson (1970) has pointed out. The reason for the consonantal mora being associated with the preceding vowel, Ní Chiosáin has claimed (for Irish), is that the language does not allow moraic consonants in surface forms and yet attempts to preserve the moras. Following Sherer (1994), this disallowal of moraic consonants in surface forms can be attributed to a high ranking of the constraint * μ /CONSONANT (152) which disallows any moraic consonant.

(152) * μ /CONSONANT

Consonants may not be moraic.

If * μ /consonant has a ranking equal or higher to that of Max- μ in Kashubian, the attested result will obtain, as shown in (153), a revised version of (151) where the “extra” mora is now identified as being associated with the stem-

final consonant in the underlying representation.

(153) * μ /CONSONANT >> MAX- μ >> WT-IDENTITY

/xleb/ $\mu \mu$	* μ /CONS	MAX- μ	WT-IDENTITY
xleb $\mu \mu$	*!		
xleb μ		*!	
xleb /\ $\mu \mu$			*

The first candidate, in which the mora underlying associated with the stem-final consonant appears in the output associated with that consonant is ruled out because of its violation of dominant * μ /CONSONANT. As in (51), the candidate – first in (51), second in (53) – which avoids violation of * μ /CONSONANT by simply deleting the consonantal mora is, however, also unacceptable. Thus, the optimal candidate is the last one, in which the consonantal mora is reassigned with the vowel, even though this entails a violation of Wt-Identity (and No Long Vowels).

The origin of the consonantal mora is certainly to be found in compensatory lengthening, but given that this phenomenon is problematic for Optimality Theory – see Kager (1999, section 9.2) for a discussion of the possibilities and problems – and given the partially lexicalized nature of the phenomenon in Kashubian, the account given above may suffice until further research provides opportunity for a more thorough description.

4.2 Vowel-Zero Alternation

Perhaps no problem of Slavic phonology has attracted the attention of generative grammarians as much as the vowel~zero alternation illustrated for Kashubian in (154).

(154) Vowel-Zero Alternation

a. *in nominal and adjectival roots*

den	bottom (G.pl.)	dno	bottom (N.sg.)
čāten	boat (N.sg.)	čātna	boat (G.sg.)
jeden	one (N.sg.m.)	jedna	one (N.sg.f.)

b. *in verbal roots*

spwotəkac	to meet (im)	spwotkac	to meet (pf)
wəbierac	to choose (im)	wəbrac	to choose (pf)

c. *in prepositions*

nade mnō	above me	nad nim	above him
ze serca	from the heart	z nieba	from the sky

d. *in prefixes*

wodesłac	to send away (pf)	wodśəłac	to send away (im)
zervac	to tear off (pf)	zrəvac	to tear off (im)

e. *in suffixes*

służebny	serving (adj)	służba	service
cōrečka	little daughter	cōrka/cōra	daughter

In particular, cognate facts in Polish and Russian have been brought forward to support or challenge those theories purporting to account for phonology-morphology interaction such as Lexical Phonology and Optimality Theory. In addition, these vowels which alternate with zero, so-called *yers*,¹⁰⁵ are of broader theoretical interest as belonging to a category of “ghost segments”, vowels and consonants which have phonological effects but either lack a

¹⁰⁵ These alternating vowels take their name from the Cyrillic letters which as used in the oldest Slavic texts are assumed to have represented vowels which in the course of history were alternately lost or modified in all the surviving Slavic languages. However, not all instances of vowel~zero alternation in the modern Slavic languages can be associated with the historical presence of a yer vowel.

phonetic realization of their own or appear only in certain contexts – such segments are found in a wide variety of languages and have been given a comprehensive analysis in Zoll (1996).

4.2.1 Previous Accounts of Vowel~Zero Alternation

Most analyses of Slavic vowel~zero alternation adopt one of three different approaches with respect to the nature of the yer vowels: (1) yers are vowels which differ in some feature from all other vowels and thus can be addressed by specific rules changing or deleting them, (2) yers are not present in the input – rather, they are merely vowels epenthesized as required by syllable structure, and (3) yers are segments lacking one or another of the properties which normal vowels have – these deficient vowels are supplied with the lacking property when required by syllable structure and otherwise remain unrealized.

4.2.1.1 Yers as [+lax] vowels

Early generative analyses of the Slavic vowel~zero alternation such as Lightner (1972), Gussmann (1980), Pesetsky (1979) and Rubach (1984)¹⁰⁶ assumed yers to be underlyingly specified as high, lax vowels and affected by rules which, when their structural context was met, caused the yers either to become tense and (usually) lowered to mid vowels or to delete.

4.2.1.2 Yers as epenthetic vowels

The advent of non-linear phonology allowed analyses showing greater

¹⁰⁶ Lightner and Pesetsky developed their analyses for Russian, Gussmann and Rubach for Polish. Pesetsky and Rubach innovated *vis à vis* Lightner and Gussmann in treating the Lowering rule as cyclical.

insight into the role of syllable structure in determining when yers may or may not appear. The fullest exploitation of syllabic structure for determining the distribution of yers is found in the analysis of Gorecka (1986, 1988), who showed that in Polish the vowel~zero alternation is largely predictable, being governed by well-formedness constraints on syllable structure. Yet however meritorious this analysis is in pointing out the regularities of yer appearance, it obtains predictability only at the cost of a complex, cyclical analysis and the distinction between insertion of a vocalic position and insertion of melodic features for the epenthetic vowel. Furthermore, while Polish may lend itself well to an epenthetic account by virtue of the fact that the melodic features of the vowel alternating with zero are predictable, this is not the case for other Slavic languages: in Slovak, for example, it is impossible to predict yer backness because of labial hardening (Rubach 1993a:137).¹⁰⁷ Finally, there is a significant number¹⁰⁸ of cases in Polish vocabulary where an epenthesis analysis makes incorrect predictions, either by predicting an alternation where there is none, as in the word *barvni* 'colourful' (< *barva* 'colour') which is predicted to be **barevni* (like *foremni* 'shapely' < *forma* 'form'), or

¹⁰⁷ In most Slavic languages, distinct reflexes of a front and a back yer are found, but their distribution can be predicted from the preceding consonant by virtue of the fact that front yers induced palatalization. In Slovak, however, palatalization of labials has been lost, so that zero can alternate with either e or o in the same environment – compare *pes* 'dog (N.sg.)' ~ *psa* (G.sg.) with *bobor* 'beaver (N.sg.)' ~ *bobra* (G.sg.).

¹⁰⁸ There is disagreement about the adequacy of an epenthesis account for Polish. On the one hand, Gorecka (1988:4) cites the statistic that yers occur in 99% of the cases where coda consonants have ascending sonority and concludes that "the alternating vowel E has a very regular, predictable distribution". On the other, Szpyra (1992:281) cites the statistic that yers break up only 63% of Consonant+r coda clusters and concludes that "the presence or absence of yers is largely unpredictable".

failing to predict an alternation where there is one, as in the word *korek* 'cork (N.sg.)' (compare *korka* (G.sg.)) which as an underived word¹⁰⁹ is predicted not to need epenthesis (like *kark* 'nape').

For these reasons, beyond its adoption in Czaykowska-Higgins (1988), the epenthesis analysis of vowel~zero alternation in Slavic has failed to gain a wide following. The only attempt to give an OT analysis of Slavic vowel~zero alternation using epenthesis is that of Verhijde (1996), which requires the simultaneous evaluation of both a word-level phonology ruling out complex clusters and a stem-level phonology ruling out epenthesis. Verhijde compares an epenthesis approach to one specifying yers in the input and concludes that an adequate OT analysis can be made using either approach, but specifying yers in the input creates more redundancy and may not be desirable. However, this is only a preliminary analysis dealing with a limited set of facts, and would need further elaboration in order to deal with alternations associated with some derivational suffixes, as noted in Rowicka (1999b: 171).

4.2.1.3 Yers as empty positions

In non-linear phonology, different aspects of the phonemes are represented on various planes or tiers, such as the metrical plane, the tonal plane, the tiers of the various melodic features, a root node linking the melodic features and, depending on the model, a tier representing timing

¹⁰⁹ Noting the great productivity of the suffix *-k* in Polish, Gorecka (1988:18) "solves" this problem with a stipulation that any stem-final *-ek* should be treated as a suffix. This raises the question as to why other k-final stems are not treated as having this suffix.

slots or weight units (morae).

The first¹¹⁰ to use this hierarchy of structure to characterize yers was Spencer (1986), who proposed that yers (in Polish) are V-slots unspecified for any Place features, as shown in (155a). Assuming /e/ to be the maximally unspecified vowel in Polish and the rightmost empty V-slot to be extrametrical, Spencer proposed that yers get their specification by means of default rules such as those proposed in Archangeli (1984), as shown in (155b). The asterisk (*) denotes the extrametrical V-slot.

(155)	cukier 'sugar (N.sg.)'	cukru 'sugar (G.sg.)'
a.	<pre> c ki r C V C V C V u </pre>	<pre> c k r C V C V C V u u </pre>
b.	<pre> c ki r C V C V C V u e * </pre>	<pre> c k r C V C V C V u * u </pre>

Spencer's analysis has been challenged on a number of grounds. Rubach (1986) rejects the proposal on the grounds that an empty V-slot could not account for the triggering of palatalization and the blocking of j-deletion, nasal assimilation and palatalization he associates with yers. Szpyra (1992) argues that an empty V-slot could not avoid syllabification, so that preceding consonants could not be syllable-final, which is required for the operation of Vowel Raising and Nasal Backing, while Piotrowski (1992a) and Rowicka

¹¹⁰ According to Rubach (1986:257), also referred to as Rubach 1985 (Rowicka 1999a) and Rubach 1985-1986 (Bethin 1992, Rowicka 1999b).

(1999b) object to Spencer's use of word-internal extrametricality and his lack of a distinction between alternating and non-alternating e's.

Counterarguments can be found to all these objections, yet together they make Spencer's proposal untenable in its original form. Nevertheless, it has been influential. Perhaps the most direct translation of Spencer's ideas into the OT framework is Rowicka (1999a), who views yers as empty nuclei which, while not moraic, can head syllables. When two yer-headed syllables occur in a sequence, they are parsed into a trochaic syllabic foot: thereby, the first of the two yers gains prosodic weight due to the prominence intrinsic to its metrically strong position and surfaces as a full vowel. This approach works quite well for verbs but is less effective with nominals and requires a complex hierarchy of Alignment constraints. Rather than continuing to elaborate on this OT analysis in her investigation of yer phenomena in Polish Rowicka herself moved¹¹¹ to the one school of generative phonology which has wholeheartedly adopted the notion of yers being empty nuclei: Government Phonology.

Standard Government Phonology analyses of yers in Russian (Kaye 1992) and Polish (Gussman & Kaye 1993, Gussman 1997, Cyran & Gussman 1998) treat them as empty positions licensed by position or by another nucleus. For example, Gussman & Kaye (1993) analyze the vowel-zero alternation in Polish *pies* 'dog (N.sg.)' vs. *psa* 'dog (G.sg.)' as follows. The word

¹¹¹ Rowicka (1999a) was originally written for a conference in 1994, five years prior to the completion of Rowicka's dissertation (Rowicka 1999b).

pjes, represented in (156a), contains two empty nuclei.¹¹² Of these, N₂ is licensed to remain empty by parametric domain-final licensing while N₁ lacks a potential governor and therefore must be filled by the Polish default vowel /e/. The word *psa*, represented in (156b), has an empty nucleus N₁ which is properly governed by the contentful final nucleus N₂.

(156) a.	✓	b.	↷
O	N ₁	O	N ₂
x	x	x	x
p	↓	s	
	e		

Government Phonology also has mechanisms which allow for a trochaic analysis. In this approach, adopted by Rowicka (1999b), the inaudibility of both nuclei in (156a) is held to violate the NO LAPSE constraint (van der Hulst 1994) which rules out sequences of weak syllables, and so a vowel is supplied to N₁ which in turns properly governs N₂. The form in (156b), on the other hand, is considered well-formed in spite of having an empty N₁, because there is no sequence of empty nuclei – thus, NO LAPSE is satisfied – and N₁ is not subject to (trochaic) government since there is no nucleus to the left of it. Using a number of constraints and principles in a Strict CV framework Rowicka (1999b) provides what may be the most comprehensive account of yer phenomena in a Slavic language. Its formalisms, however, significantly

¹¹² For simplicity of representation, the initial *p* is represented without palatalization in (156) and (157). If palatalization is represented underlyingly, then /*pi*/ must harden to [p] pre-consonantly in *psa*. If not, then /*p*/ must be softened to [pʲ] by the yer in *pjes*.

differ¹¹³ from those of the descriptive framework adopted in this dissertation, so a thorough evaluation of them is beyond the scope of this dissertation.

A variation on the concept of yer as empty node is provided by Szpyra (1992), who characterizes the yer as an empty root node. As such, a yer can prevent adjacent consonants from being syllabified in the same syllable while, lacking a specification for the feature [consonantal], it cannot – Szpyra claims – be assigned any position in the syllable. Lacking features and a position in the syllable, the yer is not realized. Only when a consonant is trapped between yers or between a yer and the end of a word, is the yer supplied with the feature [– consonantal] as a repair strategy, which allows it to surface as the unmarked (least specified) vowel of Polish: /e/. Critics, however, have expressed doubt that an entirely unspecified root node can really exist (Rowicka 1999b: 176) since the main role of the root node is to provide information about major class status, and some (Schein & Steriade 1986, McCarthy 1988) have argued that the root node in fact consists of major class features. Furthermore, even if unspecified root nodes can exist, it is doubtful they have the characteristics Szpyra (1992) claims for yers. Rowicka (1999b: 176) argues that segments with a root node specified neither as consonantal or vocalic would most likely belong to a transitional category such as that of the glides, while Zoll (1996: 41-42) challenges Szpyra’s assumption that only information from the root node is available to the syllable, citing evidence

¹¹³ As Polgárdi (1998) has shown, the use of Government Phonology principles is not incompatible with use of the Optimality Theory framework, but the mesh between them is not without difficulties.

showing an interaction between PLACE and syllabification: assuming that place features are identified as either consonantal or vocalic (as in this dissertation), there is no principled way to allow them to percolate through the root node while blocking information about whether they are CPlace or VPlace.

4.2.1.4 Yers as floating matrices

Reasoning that a segment needs a representation on the skeletal (timing) tier in order to be realized phonetically and that a melodic feature cannot be realized unless it is associated with a skeletal position, Rubach (1986) argued that yers are floating melodies, feature matrices lacking an association to the skeletal tier. In this approach, yers can receive skeletal slots in certain circumstances, in which case they receive a phonetic interpretation or, in Rubach's terminology, are *vocalized*. Otherwise, they may block processes requiring adjacency on the root tier, such as j-deletion, but do not themselves appear.

Rubach's proposal has been adopted in his own work (Rubach 1986, 1993a, b; Rubach & Booij 1990a, b; Kenstowicz & Rubach 1987). Bethin (1992), also adopts this approach, although she differs from Rubach in giving the Polish yers a predictable output and denying them a role in palatalization by claiming that the only feature in the floating matrix is [- consonantal]. She also differs from Rubach in recognizing that the triggering yer must be in the *syllable* following the vocalized yer (Bethin 1992: 136), although as Rowicka (1999b: 173) points out, this is problematic given the assumption of Bethin

(and Rubach) that yers are not syllabic until they are associated with a skeletal position. This problem is avoided by Zoll (1996) who in her OT account of vowel-zero alternation in Polish treats the yers as melodic features lacking an association with a root node.

Unlike Rubach and Bethin, Zoll (1996) assumes a moraic analysis, rejecting the need for a skeletal tier, so that in her analysis yers lack not a timing slot, but a root node.¹¹⁴ More importantly, Zoll argues that yer vocalization is a response to requirements of prosodic structure rather than the presence of another yer.

In essence, Zoll argues that all latent segments, including yers, differ from full segments only in lacking a root node. If Faithfulness constraints such as MAX (28) and DEP (28) can refer not only to whole segments – as originally proposed by McCarthy & Prince (1995: 370) – but also to units smaller than a segment, MAX(SUBSEG) (74), where Subsegment is defined as an undominated F-element (a floating feature or a floating class node), will constrain any latent segment to be parsed. This parsing comes at a cost of violating other constraints, however, and is thus conditional rather than absolute. For example, parsing a latent vowel, as in Polish, causes the surface form to have an additional syllable head, which violates the constraint which militates against superfluous syllables, *STRUC(σ) (*STRUC: 23). Full vowels are always parsed in Polish, so MAX(SEG) must dominate *STRUC(σ), but latent

¹¹⁴ Rubach and Bethin both assume that yers are specified as having a root node, albeit Bethin assumes that they have only a very minimal specification.

vowels are usually not, so *STRUC(σ) must dominate MAX(SUBSEG). This is shown in (157) for the word *psa* 'dog (G.sg.)', which has a latent vowel (E) after the first consonant.

(157) MAX(SEG) >> *STRUC(σ) >> MAX(SUBSEG)

/pEsa/	MAX(SEG)	*STRUC(σ)	MAX(SUBSEG)
ps	*!		
pes	*!	*	
psa		*	*
pesa		**!	

Here, the first two candidates are ruled out because they violate highest ranking MAX(SEG) by failing to parse the full vowel /a/ – whether or not the latent vowel is parsed does not affect the outcome. The third candidate has violations of both *STRUC(σ) and MAX(SUBSEG) but it wins out over the fourth candidate because both satisfy MAX(SEG) but the fourth candidate has an extra violation of the next highest ranking constraint, *STRUC(σ). Yers can thus surface only to satisfy a well-formedness constraint dominating *STRUC(σ). Zoll (1996) does not actually specify for Polish what that constraint is, but her earlier article (Zoll 1993) and abundant references to Szypra (1992) make clear she has in mind a constraint enforcing well-formed consonant clusters. Thus, the yer which appears as the second vowel in the word *sveter* 'sweater (N.sg.)' – compare with *svetra* 'sweater (G.sg.)' – must surface in violation of *STRUC(σ) to avoid the coda *tr* with rising sonority. The fact that Polish does have words with rising codas such as *viatr* 'wind (N.sg.)' can be taken as evidence that these words do not contain a yer and that DEP(SUBSEG) (111)

dominates the constraint barring rising sonority codas.

A possible objection to Zoll's proposal, voiced by Rowicka (1999b: 174) with respect to Zoll (1993), is that it implies that any sequence of consonants in any position would have to be tolerated if no yer is present, which is not correct. The very general nature of Zoll's proposal must however be taken into consideration, and there does not seem to be any conflict between this proposal and a language-specific definition of possible onsets and codas, as is done for Russian in Zubritskaya (1995). Thus, this objection can be rejected, leaving Zoll's explanation of vowel~zero alternation option for adoption as the model to represent Kashubian yers in this dissertation.

4.2.2 Vowel-Zero Alternation in Kashubian

Vowel~zero alternation is found in a variety of contexts in Kashubian, which will be presented in the following sections with discussion and analysis. In doing so, I will focus on what each context tells us about the predictability of the Kashubian yer with respect to shape and position. Overall, the evidence seems to indicate that although there are cases where the position of the yer seems to be predictable, there are enough instances where it is not that it is necessary to assume for Kashubian, as for Polish, Russian and Slovak, that the yer is present in underlying representations in Kashubian. Kashubian has one latent segment, a melodic feature, perhaps [VPlace], which allows it to surface as the vowel, /e/ or its raised counterpart /ê/, when this is structurally convenient.

4.2.2.1 Asyllabic roots

Like other Slavic languages, Kashubian has a small number of roots which have a vowel when no desinence follows (158, left column), but lose this vowel when a vocalic desinence follows (158, centre column).

(158) a.	<i>Nom.sg.</i>	<i>Gen.sg.</i>	
	piɛ̃	pɲa	trunk
	piɛs	psa	dog
	zɛ̃ɲi	dɲa	day
	ɕɛ̃ɲ	kɲa	bush
	vies	vʂə	village
	lɛ̃v	lva	lion
	xɲɛst	xɲtu	baptism
b.	<i>Gen.pl.</i>	<i>Nom.sg.</i>	
	den	dno	bottom
	set	sto	hundred

A number of observations can be made about these forms. First, the vowel that alternates with zero is usually /e/, although forms with /ɛ̃/ are also found.¹¹⁵ The latter can be derived from the former, as shown in 4.1, and where a yer surfaces as /ɛ̃/ it is always in a raising context, but the reverse is not true: the manifestation of a yer as /ɛ̃/ is exceptional, even in raising contexts. Thus, it might be said that the yer surfaces as /e/ in Kashubian, and sporadically as /ɛ̃/ in raising contexts. It is important to distinguish this alternating /e/ from non-alternating /e/ exemplified in (159), so the question arises as to its nature. Is this alternating /e/ inserted epenthetically, or is it present in the input, perhaps as an incomplete segment?

¹¹⁵ There is some dialectal variation as to which forms, if any, realize yer as /ɛ̃/.

(159)	<i>Nom.sg.</i>	<i>Gen.sg.</i>	
	piec	pieca	oven
	bes	besu	lilac
	dətk	dətkə	penny
	šɛɥc	šɛɥca	tailor
	cek	cek ^w u	leak
	mex	mex ^w u	moss
	mjɛx	mjɛxa	sack
	rek	reka	crab

The data in (159) seems to support an epenthesis account for (158): most stems consist of just two consonants, and when the yer surfaces, it does so between them. All lexical words of Kashubian have at least one vowel, so it might be argued that in the absence of a desinential vowel, the default vowel of Kashubian might need to be epenthesized in a vowelless or *asyllabic* stem such as /ps/ ‘dog’ in order for it to be prosodified as a Kashubian word. Accounting for the position of the yer does provide some challenges, but they can be met given a proper understanding of the well-formedness requirements for Kashubian words. Given a root /ps/, for example, epenthesis could not generate the form **eps*, as this would create an onset-less syllable, which, as shown in 2.1, Kashubian speakers would rather not have. Epenthesis could also not generate the form **pse*, as this would violate the C-final canonic form for Kashubian roots. A true challenge could be raised by roots of the form CCC and CCCC, because there would seem to be multiple possibilities for epenthesis in such forms. However, in my data there is only one such form, *xrest* ‘baptism’, and in this particular form the yer must appear where it does because if it appeared in any other position a form violating the

sonority or phonotactic restrictions would result. Of course, the pressures justifying the insertion of an epenthetic vowel equally well support an account in which a latent vowel appears in order to satisfy syllabic constraints.

The data in (159) also demonstrate the interaction of the yer vowel with the consonant preceding it. Since it is a front vowel, only the fronted (affricated) allophones of the velar stops can occur before it, thus /k/ appears as [č] and /g/ as [ǰ] – see 2.3.2.2 for more on this allophony. Affrication in the form *zèri* ‘day (N.sg.)’ might also be seen as triggered by the yer, but the lack of affrication in the pair *dno~den* ‘bottom (N.sg./G.pl.)’ gives contradicting evidence.¹¹⁶ I suggest the affrication in *zèri* is lexically determined.

4.2.2.2 Codas with rising sonority

In addition to the roots presented above which have only a vowel which alternates with zero, Kashubian also has many roots which have both a non-alternating vowel and a vowel which alternates with zero. Some of these are shown in (160), where forms with a second stem vowel are given on the left and those lacking a second stem vowel are given on the right.

(160) a.	<i>Nom.sg.</i>	<i>Gen.sg.</i>	
	čàłen	čàłna	boat
	wořèł	wořła	eagle
	méter	métra	meter
	wożer	wogra ¹¹⁷	stallion

¹¹⁶ Rubach (1984, 1986) argued that Polish has a number of yer vowels, some of which trigger palatalization and some which do not. Following this analysis, the vowel which surfaces as [e] in *zèri* would be different from the vowel which surfaces as [e] in *den*. This analysis assumes, however, that palatalization is triggered by vowels and as I have argued in section 2.3.3., that does generally not seem to be the case in Kashubian.

¹¹⁷ An alternative form *wożera*, in which the second vowel does not drop, is also found.

(160	b.	<i>Gen.pl.</i>	<i>Nom.sg.</i>	
ctd)		pasem	pasmo	strip
		sodeł	sodło	saddle
		žeber	žebro	rib
	c.	<i>Nom.sg.m.</i>	<i>Nom.sg.f.</i>	
		xtären	xtarna	which
		jeden	jedna	one
		žoden	žodna	no
	d.	<i>base form</i>		<i>derived form</i>
		hèkel	crochet hook	hèklovac to crochet
		knèzel	big nose	knèzlak man with big nose
		k ^w ozel/k ^w ozel	billy goat	k ^w ozłovi of billy goat (adj)
		f ^w uter	animal feed	f ^w utrovac to feed animals
		km ^w oter	godfather	km ^w otrovac to have a child baptised

Many of the observations made in section 4.2.2.1 also hold true of the data in (160): the vowel alternating with zero is /e/, the vowel is sporadically raised, and the affricate allophones of the velar stops appear when this vowel follows in surface forms. Furthermore, the roots in (160) arguably need an additional vowel in the absence of a suffixal vowel in order to be prosodically well-formed, just as the roots in (158) do. The problem here, however, is not the lack of a vowel to provide the sonority peak required of a lexical word in Kashubian, but the presence of an Obstruent-Sonorant coda cluster which, having rising sonority, violates the Sonority Sequencing Generalization. The regularity of a vowel appearing in Kashubian to prevent an SSG violation together with the paucity of examples where a vowel does not appear in such a context provides good evidence for epenthesis, as argued in section 3.1.1., but it does not contradict the hypothesis that the alternating vowel has at least some input specification. Indeed, the fact that Kashubian has several words

with rising sonority codas, among them *məsl* ‘thought’ (some dialects), *piępř* ‘pepper’ and *ritm* ‘rhythm’ supports, albeit weakly, the case for input specification of the yer vowel, for if yers were purely epenthetic, one might expect them to be found here too.

4.2.2.3 Suffixes

A number of Kashubian suffixes either trigger the appearance of a yer before the final consonant of the stem to which they attach or, when followed by another suffix, have a yer appear between them and the stems to which they attach. Those in the first group include the diminutive suffix *-k* (161a), the adjective forming suffix *-n* (161b), and the noun formant *-nik* (161c).

(161) a.	<i>base noun</i>		<i>diminutive</i>
	kropla	drop	kropelka
	sodło	saddle	sodełkwo
	masło	butter	masełkwo
	piismwo	writing, letter	piisemkwo
	wokno	window	woćenkwo
	stegna	path	steženka
	panna	unmarried woman	pańienka
	jōdro	kernel, core	jōderkwo
	xwuxro	weak person	xwuxerkwo
	kwurva	prostitute	kwurevka
b.	<i>base noun</i>		<i>derived adjective</i>
	serce	heart	serdečni hearty, sincere
	słońce	sun	słonečni sunny
	karčma	inn	karčemni pertaining to an inn
	kwuxrńa	kitchen	kwuxenni pertaining to a kitchen
c.	<i>base noun</i>		<i>derived noun</i>
	karčma	inn	karčemńik inn keeper
	kropla	drop	kropelńik dropper
	kwurva	prostitute	kwurevńik pimp (?)

The suffixes which have a yer appear before or within them when followed

by another suffix include the noun formant *-b* (162a), the diminutive *-k* (162b),¹¹⁸ the feminine suffix *-k* (162c), and the noun formant *-stv* (162d).

(162) a.	<i>base noun</i>		<i>derived adjective/adverb</i>	
	xvalba	praise	xvalebno	praiseworthy (adv)
	służba	service	służebny	service (adj)
b.	<i>base noun</i>		<i>diminutive</i>	<i>double diminutive</i>
	xalpa	house	xalpka	xalpečka
	karta	sheet, card	kartka	kartečka
	ksāga	book	ksōžka	ksōžečka
	pies	dog	piesk	piesečk
	pʷovrōż	rope	pʷovrōżk	pʷovrōžečk
	ptāx	bird	ptašk	ptašečk
	sin	son	sink	sinečk
	sviiria	pig	sviinka	sviinečka
	kwoło	circle, wheel	kwółkwo	kwolečkwo ¹¹⁹
	cōra	daughter	cōrka	cōrečka
	krova	cow	krōvka	krovečka
c.	<i>male</i>		<i>female</i>	<i>female (diminutive)</i>
	kašəba	Kashubian	kašəbka	kašəbečka
	kwot	cat	kwotka	kwotečka
d.	<i>base noun</i>		<i>derived noun</i>	<i>der.noun (diminutive)</i>
	pan	lord	państwo	state
				państevkwō

Many discussions of cognate examples in Polish and other Slavic languages attribute vowel~zero alternation to properties of the morphemes involved, but an explanation may also be sought in general phonological principles. Namely, for all examples in (161) and (162) the appearance of a yer vowel breaks up what would otherwise be a three or four consonant cluster. Three and four consonant clusters can be found in Kashubian, even among

¹¹⁸ When two k's come into adjacency in Kashubian, the first k is affricated to č.

¹¹⁹ The formation of the double diminutive always involves surfacing of a yer, with the exception that the double diminutive of *stół* 'table' is *stółčk*: note, however, that this same łčk cluster is broken up by a yer in *kwolečkwo* (< *kwoło*)

the examples in (161) and (162), but clusters in which a sonorant or affricate occupy a central position are not found, and it is precisely these clusters whose formation is prevented by the appearance of yers. The position of the alternating vowel is also determined, at least in part, by the phonology, since the vowel must be adjacent to the segment in danger of being trapped in order to ensure its proper prosodification. It is not, however, clear why the vowel must appear before the central affricate (č), or sonorant (v) in the case of *państeŷkwo*, for the general preference for coda simplicity in Kashubian would seem to favour the alternating vowel appearing after the trapped consonant. Thus, the position of the yer may too in this case depend on specification for a latent vowel present in the input.

4.2.2.4 Prepositions

Prepositions in Kashubian, as in other Slavic languages, form a Clitic Group (Nespor & Vogel 1986) together with the noun phrase following them, which is the domain for certain phonological phenomena including, for some dialects, stress assignment, but they are separated from these following words by a PrWd-boundary which syllabification cannot usually cross. As a result, while all consonant-final prepositions arguably have a final yer, these yers rarely surface. A sample of consonant-final prepositions in contexts where yers do not surface is given in (163).

(163)	wob	wob noc	at night
		wob šabas	on the sabbath
		wob zāmā	in the winter
	nad	nad drągō	over the other (fem)

(163 ctd)	naḍ p̄ənōcō	over a flowing (fem)
	naḍ vašim	over your (masc)
p̄eḍ	p̄eḍ nim	before him
	p̄eḍ sobō	before himself
	p̄eḍ tobō	before you
p̄wod	p̄woḍ psalmā	under Psalm...
	p̄woḍ sobō	under himself
	p̄woḍ v̄ptivā	under the influence
wod	wod zisa	from today on
	wod svwojégwo	from his own (masc)
	wod vialzi	from a great (fem)
bez	bez p̄wotřebə	without need
	bez šakwu	without skill
	bez zajācégwo	without activity
p̄zez	p̄zez p̄wole	through the field
	p̄zez wiele	through many...
	p̄zez zřešenie	through the (Kash-Pom) Association
v	v bezpiekwu	in safety
	v̄ spiikwu	in sleep
	v zemlā	in the earth
z	z daleka	from afar
	z formama	with forms
	z nieba	from the sky/heavens

There are, nevertheless, certain conditions in which the prepositional yers do appear. First, a yer surfaces after the preposition *v* 'in, into' whenever it precedes a word with an initial labiodental fricative (164a) or an initial cluster containing such a consonant (164b).¹²⁰

(164) a.	ve formje	in the form
	ve vestřōḍkwu	in the inside
	ve vāžšim	in a higher (masc)
	ve vōtpjax	in doubts
	ve vialzi	in a great (fem)

¹²⁰ Forms not conforming to this description, such as *v formje* and *v svwojim*, sometimes appear in the Kashubian literature under the influence of Polish, in which prepositional yers appear only before certain consonant clusters. Some Kashubian authors consistently follow the Polish rather than the Kashubian rules for the use of prepositional yers.

(164 ctd)	ve viečni	in eternal (fem)
	ve vprovazenim	in the introduction
	ve vštāpnim	in the initial (masc)
	ve vštātcix	in all...
b.	ve svwojim	in his own (masc)

Similarly, a yer appears after the preposition *z* 'from; with' whenever it precedes a word with an initial sibilant (165a) or an initial cluster containing a sibilant (165b).¹²¹

(165)	a.	ze serca	from the heart
		ze sidła	from the bag
		ze sobō	with himself
		ze sōdā	with the court
		ze sferā	from the sphere
		ze skřāniō	with a box
		ze słowā	with a word
		ze sp ^w osobā	with a manner
		ze strax ^w u	of fright
		ze svjata	from the world
		ze svwoji	from his own (fem)
		ze ščārim	with sincere (masc)
		ze zapitanim	with enquiry
		ze zārnof	from the grains
		ze zemji	from the ground
		ze zb ^w ožėgwo	from the grain
		ze zvākama	with sounds
		ze žādo ^v šci	from a Jewish (fem)
	b.	ze vštātcix	of all
		ze vzglādu	with respect

Beyond these I have found one other case of a yer surfacing to separate like consonants in the expression *p^wode drogō* 'under/below the road', but this is the only case encountered of a yer surfacing between a d-final preposition and

¹²¹ Expressions found violating these rules, probably because of Polish interference, include *z zastrzegō* 'with a warning' and *z žācėgwo* 'from life'.

word with an initial like consonant.

It seems significant that prepositional yers appear regularly and consistently with only the two prepositions consisting of a single consonant. The prepositions *nad*, *před*, *přod*, *wod*, *bez* and *přez* can be prosodified as well-formed syllables and can thus constitute independent Prosodic Words, but *v* and *z* cannot. A solution to this problem is to have *v* and *z* prosodified into the onset of the following word. I suggest this is indeed what happens, however, it is important that the prepositions remain clearly identifiable for the sake of semantic interpretability. Thus, they cannot be prosodified into an onset containing a like consonant because assimilation processes – in particular voicing assimilation, which applies across word boundaries – would obscure their identity, so another means of prosodifying the prepositions must be found. This is accomplished by having the prepositional yer appear.

There is one other context for the appearance of a prepositional yer. Before words starting with a sonorant-initial cluster, such as *mnō* ‘me (Ins)’ (166a) and *ṽšətćim* ‘all (Ins)’ (166b), a prepositional yer regularly appears. Before the word *mie* ‘me (Gen/Acc)’ (166c) a prepositional yer can also appear, although this is probably a result of interference from the Polish cognate *mnie*, which, like *mnō*, has an initial cluster with two nasal sonorants.

- (166) a. *nade mnō* above me
 pʷode mnō under me
 přede mnō in front of me
 ze mnō with me
 b. *přede ṽšətćim* above (lit. before) all

- (166) c. *compare with*
 p̛eze mie through me nad mie (to) above me
 ve mie in me wod mie from me

This too seems a case of phonologically conditioned yer appearance. As seen in section 3.1.2, Kashubian allows misalignment of the Prosodic Word with the initial syllable allowing trapped sonorants¹²² to surface, but it improves the PrWd-syllable alignment by prosodifying a trapped sonorant into a preceding syllable when such a syllable is available within the same Clitic Group. Adopting Zoll's hypothesis about the nature of latent vowels, the interaction of constraints producing the surfacing of prepositional yers in (166) could be represented as in (167).

- (167) SSG >> *STRUC(σ) >> MAX(SUBSEG)

/zE mnō/	SSG	*STRUC(σ)	MAX(SUBSEG)
zmnō	*!	*	*
ẓem.nō		*	

The first candidate satisfies the constraint requiring minimal syllabic structure, *STRUC(σ) (23), and thereby violates both the constraint requiring the parsing of all features specified in the input, MAX(SUBSEG) (74), and the constraint requiring that all onsets be well-formed, the SSG (55). The first violation is of no significance, because *STRUC(σ) dominates MAX(SUBSEG) in

¹²² It is not clear that the initial consonant of either *mnō* or *ṽšətćim* actually is a trapped sonorant. First, the version of the SSG adopted in this dissertation allows for a sonority plateau, and there is no independent evidence that /m/ has a higher sonority than /n/ in Kashubian. Second, /v/ does not consistently act as a sonorant and “trapping” it does not lead to the surfacing of a prepositional yer in, for example, *p̛wod ṽp̛ivā* ‘under the influence’. The use of a prepositional yer in *p̛ede ṽšətćim* may, however, simply be in analogy with *ve ṽšətćix* and *ze ṽšətćix*, where the yer separates like consonants.

Kashubian, but the second violation renders the form unacceptable, since the SSG dominates *STRUC(σ). The second candidate violates *STRUC(σ), but is evaluated as optimal because it satisfies dominating SSG.

4.2.2.5 Prefixes

Kashubian prefixes are similar in form to prepositions, and have the same structural relationship to their stems as prepositions do to the noun phrases following them. It is thus not surprising that their behaviour is also similar to that of prepositions with respect to the appearance of yers.

Like the preposition *z*, the prefix *z-* is sensitive to the nature of the following consonant. As shown in (168), a prefixal yer often appears when the prefix *z-* is attached to a stem with an initial sibilant.¹²³

(168)	<i>ze+sela</i>	send out (3s.pr.im)
	<i>ze+stařec sã</i>	get old (infin.pf)
	<i>ze+stãviã</i>	take down, put together (3s.pr.im)
	<i>ze+stõpji</i>	descend (3s.pr.pf)
	<i>ze+šlaxwovac sã</i>	make alike (infin.pf)
	<i>ze+špacac</i>	???
	<i>ze+štivriãli</i>	become stiff (m.ppa)
	<i>ze+štrařwovwõni</i>	punish (m.ppp)
	<i>ze+žgřec</i>	devour (infin.pf)

As with the prepositions *v* and *z*, I suggest the appearance of the prefixal yer in (168) can be accounted for by the fact that the prefix *z-* needs to remain distinct from the stem to which it attaches and so cannot be prosodified into

¹²³ The evidence for appearance of a yer to avoid assimilation is much less abundant for the prefixes than it is for the prepositions, and the number of counterexamples greater. Gořabek (1993), for example, uses *zsela* as well as *zesela* (both mean 'send out (3s.pr.)') and Ramuřt (1893) includes five verbs with initial *zs-* and three verbs with initial *zř-*. Such examples are, however, far fewer than the examples with prefixal yer, and may be artifacts of literacy - Kashubian is reluctant to tolerate long consonants of any kind.

an onset with a like consonant. Thus, it creates a syllabic nucleus for itself by filling out its yer to a full vowel. It can only do this by violating *STRUC(σ) which means that *STRUC(σ) must be dominated by the Faith constraint requiring explicit representation of the prefix, EXPREP (169).

(169) EXPLICIT REPRESENTATION (EXPREP)

Each morpheme must have an explicit (phonemic, graphemic, etc) representation in the output.

This interaction of constraints is shown in tableau (170) for the example *zestōpi* 'descend (3s.pr.pf)'.

(170) EXPREP >> *STRUC(σ) >> MAX(SUBSEG)

/zE+stōpi/	EXPREP	*STRUC(σ)	MAX(SUBSEG)
zstōpi	*!	*	*
<u>z</u> estōpi		*	

The first candidate here satisfies *STRUC(σ) but is ruled out because it violates EXPREP, which dominates *STRUC(σ), by not giving a (sufficiently) explicit representation to the prefix *z-*. The second candidate violates *STRUC(σ), but is considered optimal because it satisfies EXPREP.

The appearance of prefixal yers is also found in association with certain stems, as shown in (171) where the prefixal yers are underlined.

<i>verb</i>		<i>prefixed form</i>	
brac	to take	wod <u>e</u> +brac	to pick up
		z <u>e</u> +brat	collect up (3s.m.pt)
mscæc	to avenge	z <u>e</u> +mšcā sā	take revenge (1s.pr)
isc	to go	wob <u>e</u> +nīc	to go around
		nad <u>e</u> +nīc	to come
		p <u>w</u> od <u>e</u> +nīc	to approach
		wod <u>e</u> +nīc	to go away

(171 ctd)		rozé+ńc	to disperse	
		wę+ńc	to enter	
		wzē+ńc	to go up	
		zē+ńc	to go down	
	pxac	to push	wode+pxlə	push away (3p.mp.pt)
			zē+pxli	push away (ppa)
	řnōc	to cut	wobe+řnōc	to cut up
	rvac	to tear	wode+rvac	to tear off
			zē+rvac	to rip, tear
	slac	to send	roze+stələ	distribute (3p.m.pt)
			wode+slac	to send back
	tknōc	to touch	pwode+tknōc sã	to stumble
			zē+tnōc	to touch, contact
	cōc	to cut	wode+tni	cut off (imp)
	v√stavac	to set up	wode+vstavac	to take down
	zdřec	to look	vē+zďřať	look in (3s.m.pt)
	zvac	to call	vē+zvať	call (3s.m.pt)
			wode+zvať	answer (3s.m.pt)

Much has been written about the supposed interaction between prefixal yers and root yers in the cognates of these words in other Slavic language, but as far as Kashubian is concerned, whatever interaction there was has now been lexicalized, so that while the 3s.pr. form of *zebrać* 'to collect' in Polish is *zbieře*, the 3s.pr. form of its Kashubian cognate (*zebrac*) is *zebieře*. Aside from lexical exceptions such as this, it seems that prefixal yers in Kashubian now vocalize if a root has no full vowel of its own, like *ńc* 'to go' and *px* 'to push', or begins with a particularly heavy cluster, as in *vstavac* 'to set up'. This can be seen as yet another manifestation of the dominance of the SSG over *STRUC(σ) already exemplified in tableau (167): if an abnormal onset can be made more normal through the vocalization of a prefixal yer, it will happen.

4.2.2.6 Derived imperfective stems

In all the examples examined so far, the yer has manifested itself in Kashubian as the vowel /e/ or its raised counterpart /é/. In derived imperfective forms, however, Kashubian yer can also manifest itself as /ə/ or its raised counterpart /i/, as shown in (172).

(172)	<i>perfective</i>	<i>derived imperfective</i>	
	p ^w o+rvac	p ^w orivac	to kidnap
	sp ^w o+tkac	sp ^w otəkac	to meet
	za+mknōc	zaməkac	to close

Rowicka & v.d.Weijer (1994) have proposed an analysis of similar facts in Polish¹²⁴ according to which the derived imperfective stem has a minimality condition imposed on it: the root and DI suffix must minimally form a binary foot. To meet this condition, roots lacking a full vowel – the roots found in (172) constitute a proper subset of the roots before which a prefixal yer appears in (171) – must add an epenthetic vowel which is the least sonorous one in the inventory, the high front vowel (usually in its non-raised version: ə).¹²⁵ Not all derived imperfectives of roots lacking a full vowel insert a high vowel, however: an independently motivated phonotactic constraint results in the insertion of /e/ before /r/, so that the derived imperfective corresponding to the perfective verb *zebrac* 'to collect' is *zbierac*.

¹²⁴ The facts are not exactly the same, for lacking a distinction between raised and non-raised high vowels, Polish uses the high front vowel /i/(phonetically [i]) in DI forms.

¹²⁵ Thus, in this analysis /e/ is not the default vowel of Polish (or Kashubian). This is in keeping with the GP analysis (Rowicka, p.c.) that in being licensed the yer gains prominence and therefore appears as a vowel with more than minimal sonority. Mid and low vowels are considered (Blevins 1995) more sonorous than high vowels.

These data suggests that the quality of the latent vowel which appears here under pressure of a morphologically motivated constraint on root structure is sufficiently underspecified to allow some variation. Its input feature specification might include the feature Coronal, but it does not include an aperture feature: [-high] is supplied by default, with [+high] being assigned instead in (172) as required by the morphology.

4.3 Minor syllables

In addition to the vowel raising described in 4.1 and the vowel - alternation described in 4.2, there is yet one other case of vowel alternation in Kashubian, exemplified in (173).

(173)	Nom. sg.	Gen.sg.	
	brev	brəvji	brow
	krev	krəvji	blood

The vowels in the right column are unusual in Kashubian in that they are very fleeting (shorter than phonemic ə), may appear to the right (in all data I have examined and as represented in (173)) or (reportedly) to the left of the liquid, and cannot be stressed, even in dialects which otherwise stress the first syllable of each word (phonemic schwa is stressable here).

This brief, unstressable vowel can be found in other words, where it does not alternate with e, as shown in (174).

(174)	pləvac	to spit (inf)
	drəži	to shake (3s.pr.)
	břəmji	to sound (3s.pr.)
	gřəmji	to strike lightning (3s.pr.)

Comparing (173) and (174), it would seem there is a clear phonotactic context

for the appearance of this brief vowel. It appears whenever a liquid (l, r or ř) is trapped in an onset to a full vowel between an onset and an obstruent or sonorant of lower sonority. I thus suggest that the phonetic qualities of this brief, unstressable ə can be accounted for if it is merely an excrescent vowel, inserted to ease the pronunciation of a trapped liquid: the right hand forms in (173) are then actually instances of vowel ~ Ø alternation comparable with those in (158). Syllabicity of liquids is not generally allowed in Kashubian, but is permitted in this context to prevent a severe SSG violation, one where not only a single sonorant is trapped beyond the normally syllabifiable onset and the PrWd edge (as discussed in 2.1) but there is also another consonant to the left of this otherwise unsyllabifiable sonorant. By allowing the sonorant to become syllabic, a minor syllable is formed in which the extra consonant to the left can take the onset position. This minor syllable cannot be stressed: this is apparently because only full vowels can be stressed in Kashubian.

4.4 Chapter Summary

This chapter discusses three kinds of alternation in the vowel system. In 4.1, it was seen that vowel raising is the result of morphological restrictions on the one hand and the need to preserve a mora associated with certain stem-final consonants. In 4.2, vowel ~ zero alternation was seen to be the result of a latent vowel appearing under duress to create syllabic structures which are otherwise intractable. Finally, section 4.3 showed that a brief vowel can be used in Kashubian to ease the pronunciation of a syllabic liquid.

Appendix¹

The Kashubian Syllable: Experimental Evidence

1. Introduction

Although the linguistic literature is rich in descriptions of the dialectal distribution and historical development of the sounds of Kashubian, there has been little description of the collocation of phonemes in Kashubian.² Studies of syllabification in various Slavic languages have shown many similarities, yet there are some differences, so that assuming Kashubian to follow the same rules of syllabification as even its closest relative, Polish, extensively described in Gorecka (1988), Rubach & Booij (1990a, b) and, particularly, Bethin (1992), cannot be done without verification.

Patterns of syllabification can be determined in two ways: by examining the intuitions of native speakers through various tests and by identifying patterns of phonological variation which can be correlated with various positions within the syllable. The goal of this study is to show what the intuitions of native speakers tell us about the syllable structure of Kashubian.

2. Method

Data was collected from informants by means of a questionnaire (attached), which asked informants to divide a list of Kashubian words into syllables; only one copy of each word was provided with spacing, but informants were invited to write in additional forms if they felt a given word

¹ This paper was written in April 1998 on the basis of data collected by means of a questionnaire distributed in Gdańsk in the summer of 1997 by my wife, Maria Hopkins, and as well as one filled in by a Kashubian visiting Canada five months later. As the paper was not published, it is appended to my thesis as supplemental information for interested readers. Minor changes have been made, including the orthography of examples from IPA to the Kashubian orthography used elsewhere in this thesis.

² Judging by its title, Ročlawski (1983) may be useful in this respect, but I have not been able to obtain a copy of it. In any case, since it is a purely statistical study based on the texts in Topoliriska (1967), it is unlikely to contain information on syllabification.

could be syllabified in more than one way.

The words given to the informants to syllabify were selected on the basis of their suitability for testing certain hypotheses about Kashubian syllable structure. These hypotheses were developed on the basis of comparison with related languages, in particular Polish, and are discussed in sections 3 to 5.

All informants were adults who had learned Kashubian as children. All were also fluent in standard Polish, which was inevitable given the written nature of the task – although a few schools do allot some time for the instruction of Kashubian spelling and literature, standard Polish has been the only language of instruction in all schools of the Kashubian-speaking region since the end of the WW II. Although the informants were not all equally familiar with the Kashubian orthography,³ this seems not to have influenced the results. It was anticipated that dialectal variation with respect to stress might affect syllabification, which was controlled for by asking some informants to underline the stressed syllable in each word, but the effects of dialectal variation were found only in the syllabification of /f/ (cf. section 4.1).

Unfortunately, I was able to collect data only from nine informants, and some of these did not complete the questionnaire. For this reason, these results cannot be considered statistically reliable. Nevertheless, in as far as results obtained are consistent with those found in other Slavic languages, they can be said to confirm or cast doubt on initial hypotheses.

3. Complex segments

The iotation of labial obstruents in Kashubian has produced complex segments with lesser overlap between the obstruent gesture and the glide gesture than in Polish. This phonetic reality might lead one to suppose that

³ Most of the informants were, however, active in the Kashubian cultural movement and three had numerous publications written in Kashubian.

the palatalized labials have decomposed into two phonemes. However, it is also possible that palatalized labials continue to function as units and remain impervious to the insertion of a syllable boundary. Table (1), where the numbers in parentheses indicate the number of informants supporting each option, supports the hypothesis that a /vj/ cluster remains an indivisible unit – this unit will hereafter be represented as /vi/.

(1) ⁴			.vj	v.j
bawienie	'playing'	ba.vieŋe (9)	bav.jeŋe (0)	
odpowiescë	'answer'	wodp ^w o.viescä (7)	wodp ^w ov.jescä (1) ⁵	
zadrëdzewiali	'rusted'	zadräze.viali (7)	zadräzev.jali (0)	

The prepalatal /ɲ/ created by the iotization of n is also indivisible, although, following Polish orthography, Kashubian represents it as <ni> before a vowel other than /i/. All informants give the syllabification [bavie.nie] for *bawienie* 'playing' and [maŋglar.ɲä] for *maŋglarniö* 'cleaners'.

The voiced dental (ʒ) and prepalatal (ʒ̣) affricates of Kashubian represent another kind of complex segment whose status as single phonemes might be questioned. Like the corresponding voiceless affricates (c and č), they both are derived by iotation from simple stops, but unlike /c/ and /č/, they are treated by the orthography of Kashubian (and Polish) as composites. Data supporting the hypothesis that /ʒ/ and /ʒ̣/ are both indivisible units is given in (2).

(2)			.ʒ/.ʒ̣	d.z/d.ż
błędzëc	'to err, wander'	błō.ʒac (8)	błōd.zac (0)	
rozsôdzac	'to plant apart'	rossa.ʒac (6)	rossad.zac (0)	
zadrëdzewiali	'rusted'	zadrä.zeviali (3)	zadräd.zeviali (0)	
dłudzi	'long'	dłu.ʒi (8)	dłud.zi (0)	

⁴ In this and later examples, forms in the leftmost column are given in the standard Kashubian orthography used in the questionnaire.

⁵ The one informant who indicated a division between w and i in *odpowiescë* also drew a stronger line before the <wi>, thus it is possible that no-one really divides a vj cluster.

This discussion presumes, of course, that /v/ and /d/ **can** appear in a coda – clearly, if Kashubian does not allow them to occur in a word-internal coda, then the fact that /vi/, /ʒ/ and /ʒ/ are not divisible says nothing about their phonemic status. Thus, the next section will examine the status of codas in Kashubian.

4. Codas in Kashubian

An examination of the range of word-final clusters in Kashubian, which can be easily extracted from Ročlawski's (1991) index, shows that Kashubian allows not only single consonants word-finally, but also consonant clusters, which may not, however, rise in sonority.⁶ Nevertheless, given the possibility of extrametricality, it is not possible to conclude that these word-final consonants are truly within the syllable rime. Thus, it is necessary to examine word-internal consonant clusters.

Experiments examining the intuitions of Polish speakers with respect to word-internal syllabification, conducted by Rubach (Rubach & Booij 1990a, b) and Bethin (1992), as well as experiments examining the intuitions of Slovak speakers (Rubach 1993), show that speakers of these two languages have a much stronger preference for including sonorants in the coda than obstruents. For this reason, potential sonorant codas will be examined separately from potential obstruent codas.

4.1 Sonorant-initial Clusters

Like speakers of Polish and Slovak, speakers of Kashubian apparently prefer sonorant codas, as seen in the examples below. Table (3) shows that where the first element of a medial cluster is a liquid, this segment is almost always syllabified with the preceding vowel.

⁶ As Gorecka (1988) shows, this is largely true of Polish as well, which only has a small number of native lexical items with final consonant clusters showing rising sonority: the corresponding stems in Kashubian all require an epenthetic vowel.

(3)		V.RC	VR.C	other
bĕlny	'noble'	bə.lni (6)	bəl.ni (5)	
koscelny	'church (adj)'	kʷosce.lni (2)	kʷoscel.ni (7)	
kwartalny	'quarterly'	kwarta.lni (0)	kwartal.ni (6)	
pospólny	'common'	pʷospʷó.lni (1)	pʷospʷól.ni (7)	
białka	'woman'	bia.łka (0)	biał.ka (8)	
stółcznik	'carpenter'	stó.łčnik (0)	stół.čnik (6)	stółč.nik (1)
żółtĕchny	'yellowish'	ža.łtəxni (0)	żał.təxni (6)	
karczma	'inn'	ka.rčma (0)	kar.čma (9)	karč.ma (2)
kwartalny	'quarterly'	kva.rtalni (2)	kvar.talni (7)	
manglarniô	'cleaners'	maŋgla.rniá (1)	maŋglar.ná (8)	
nôskwarny	'bothersome'	náskva.rni (1)	náskvar.ni (6)	
osmenórtowi	'octagonal'	wosmenó.rtovi (1)	wosmenór.tovi (5)	
starszĕzna	'seniority'	sta.ršəzna (1)	star.šəzna (6)	
szportowno	'jokingly'	špʷo.rtovno (1)	špʷor.tovno (7)	špʷort.ovno (1)
cerzpnac	'grow numb'	ce.řpnōc (0)	ceř.pnōc (8)	ceřp.nōc (1)
urznac	'to cut off'	wu.řnōc (2)	wuř.nōc (4)	wur.znōc (1)

The data for *gburzci* 'agricultural' and *zmiarznac* 'to freeze' also follow a similar pattern, although here dialectal diversity hinders interpretation. The addition of the morpheme *sk* to *gbur* causes stem-final /r/ to palatalize and merge with the s of *sk* to produce /řk/, but in many dialects /ř/ has decomposed into /rž/ ([ř] before /k/). For this reason, it is not clear whether the syllabification <r(s)z.k> indicated by four informants⁷ is indicative of a simple sonorant coda or a complex coda. For *zmiarznac*, two variant pronunciations were found, /zmiarñōc/ and /zmiarznōc/: thus, it is certain that the four informants who gave the syllabification <r.z> prefer a simple sonorant coda, but it cannot be determined with certainty whether the three informants who gave the syllabification <rz.n> prefer a simple sonorant coda or a complex coda.

Table (4) shows that where the first element of a medial cluster is a nasal, this segment is also usually syllabified with the preceding vowel. This

⁷ The other five informants placed a syllable boundary immediately after <r>, so that it is clear that most informants prefer a simple sonorant coda in this word.

preference seems not as strong as with the liquids, although this may be partly explained by the fact that in *omglaŕi* and *zemsta* the nasal is preceded by a prefix (cf. section 5).

(4)		V.NC	VN.C	other
omglaŕi	'faint(ed)'	wo.mglaŕi (1)	wom.glaŕi (6)	
rozēmny	'reasonable'	rozə.mni (3)	rozəm.ni (4)	
zamszowi	'chamois'	za.mšovi (3)	zam.šovi (5)	
zemsta	'revenge'	ze.msta (3)	zem.sta (3)	
manglarniô	'cleaners'	ma.ŋglarniá (0)	maŋ.glarniá (8)	
kunštôrz	'artist'	ku.nštař (0)	kun.štař (5)	kunš.tař (3), kunšt.ář (1)
prziŋdze	'will come'	při.niže (1)	přiŋ.že (7)	

Table (5) shows the syllabification where the first element of a medial cluster is a glide. Given its behaviour in other Slavic languages and its being confounded with the labial onset glide in some dialects, /v/⁸ is grouped here with /j/, although in some words it seems less preferred as a coda than the other sonorants.

(5)		V.GC	VG.C
spokójny	'calm'	sp ^w ok ^w o.jni (1)	sp ^w ok ^w oj.ni (7)
dzéwczā	'girl'	zė.včā (4)	zėv.čā (7)
dzywny	'strange'	zi.vni (6)	ziv.ni (4)
ówsny	'oat (adj)'	wó.vsn̩i (1)	wov̩.sni (7)
szportowno	'jokingly'	šp ^w orto.vno (5)	šp ^w ortov.no (3)

4.2 Obstruent-initial Clusters

Rubach (1993, with Booij 1990a, b) has found that speakers of Polish and Slovak may syllabify the initial obstruent of a medial cluster with the preceding vowel, although they rarely put more than one consonant in a coda. In addition, he found a significant, although not overwhelming,

⁸ Word-finally and before a voiceless consonant |v| devoices to /f/, but here – as in other tables – evaluation of consonants for purposes of syllabification is based on their underlying form and not their surface manifestation.

preference for no coda at all on the part of the Poles.⁹ This preference is, however, dependant to a certain extent of the nature of the obstruent – cluster-initial sibilants are more likely to be put in the coda of the preceding syllable than other obstruents.

As prefixes and morphemes bound together in compounds have been argued to constitute separate domains for various phonological processes, including syllabification, in Polish (Czaykowska-Higgins 1988, Rubach & Booij 1990b), Russian (Yearly 1995) and Slovak (Rubach 1993), Kashubian syllabification at the prefix-root boundary and compound boundary will be examined separately in section 5, while other obstruent-initial clusters will be examined in this section.

Table (6) suggests that Kashubians prefer to put a syllable boundary before the initial stop of a medial cluster, although this preference is much less marked than their preference for syllabifying a cluster-initial sonorant with the preceding vowel.

(6)		V.TC	VT.C	other
chłopszczi	'male'	xłɔ.psɕi (2)	xłɔp.sɕi (5)	xłɔps.ɕi (1)
dobrze	'well (adv)'	do.bʁe (6)	dob.ʁe (3)	
ubrzątwiony	'imaginary'	wubʁõ.tvioni (4)	wubʁõt.vioni (3)	
bawidło	'toy'	bavii.dłɔ (7)	bavii.d.łɔ (2)	
biédny	'poor'	biè.dni (5)	biéd.ni (2)	
obkłódka	'cover (n)'	wɔɓkłá.ɔka (3)	wɔɓkłáɔ.ka (4)	
westrzédny	'central, middle'	vestřé.dni (3)	vestřéd.ni (4)	

Table (7), showing the syllabification of medial clusters beginning with a fricative, is difficult to interpret. With some words, the informants generally agree that the syllable boundary should fall before the fricative, with others they agree it should fall after the fricative, and with still other words they are divided.

⁹ According to Rubach (1993), Slovaks prefer to syllabify the first obstruent of a medial cluster with the preceding vowel.

(7)		V.SC	VS.C
tôfla	'(black)board'	tā.vla (4)	tāv.la (2)
głosny	'loud'	gło.sni (4)	głos.ni (5)
koscielny	'church (adj)'	kwo.scelni (3)	kwos.celni (5)
nôskwarny	'bothersome'	nā.skvarni (5)	nās.kvarni (2)
odpowiescë	'answers'	wodp ^w ovie.scə (4)	wodp ^w ovies.cə (2)
osmenórtowi	'octagonal'	wo.smenórtovi (1)	wos.menórtovi (4)
obrózkama	'pictures (Inst.)'	wobrá.żkama (1)	wobraz.kama (7)
starszëzna	'seniority'	staršə.zna (6)	staršəz.na (0)
wëcmanizna	'team'	vəcmani.zna (3)	vəcmaniz.na (3)
ksążkownica	'bookstore'	ksō.żk ^w ovnica (0)	ksōż.k ^w ovnica (7)
zôltëchny	'yellowish'	żältə.xni (1)	żältəx.ni (5)

4.3 Medial clusters with trapped sonorants

As has been pointed out by Rubach & Booij (1990b) and Bethin (1992), a medial cluster with a high sonority consonant flanked by two consonants of lesser sonority cannot be syllabified without violating the Sonority Sequencing Generalization (SSG) that requires onsets to rise in sonority and codas to fall in sonority. Since syllabifying such a trapped sonorant as coda or onset is equally bad, it is predicted that speakers will either avoid such clusters or give equal preference to syllabifying a trapped sonorant with the preceding or with the following consonant: data collected from Polish speakers bears out this prediction.

A comparison of Polish words having trapped sonorants with their Kashubian cognates shows that Kashubian often avoids trapping sonorants, usually by vowel epenthesis or using alternate morphology, but it does have some words with trapped sonorants: their syllabification is exemplified in (8).

(8)		T.RC	TR.C	other
bezmëslny	'thoughtless'	bezməs.lni (5)	bezməsl.ni (5)	
ochrzęc	'christen'	wox.řcəc (4)	woxř.cəc (1)	wo.xřcəc (2)
powitrzny	'day after tomorrow'	p ^w ovjiit.řni (0)	p ^w ovjiitř.ni (2)	p ^w ovji.třni (5)
strzëbrzny	'silver (adj)'	střeb.řni (2)	střebr.žni (2)	stře.břni (4)
witrznica	'dawn'	viit.řnica (2)	viitř.nica (4)	vji.třnica (2)

While Kashubians show the predicted split in the syllabification of a trapped /l/, the syllabification of words with a “trapped” /r/ seems to be determined by the cluster-initial consonant: where the cluster-initial consonant is a stop, the syllable-boundary tends to fall before it, and where this consonant is a fricative, the boundary tends to fall after it. This distinction between /l/ and /r/ may be a result of /r/ being realized as a fricative, in whole or in part, in modern Kashubian.

4.4 Summary

With some exceptions which need to be examined more closely, the data presented in this section indicates that, like speakers of standard Polish and Slovak, Kashubians avoid syllabifying words with sonorant-initial medial clusters such that an onset cluster with falling sonority – a violation of the SSG – is created. This is not true of low-sonority obstruents, so that whereas cluster-initial sonorants are almost always syllabified with the preceding vowel, cluster-initial obstruents may be syllabified in the onset to the following vowel and indeed, this is apparently preferred when that obstruent is a stop.

In the syllabification of medial clusters with a sonorant flanked by obstruents, SSG violation is unavoidable. The available evidence suggests that Kashubian, like Polish, does not have a clear preference for syllabifying trapped sonorants as onset or coda, although this may not be true for /r/, which has taken on properties of a fricative.

5. Prefixes and Compounds in Kashubian

Slavic prefixes have been argued to constitute a separate domain distinct from that constituted by a root with suffixes, a domain in which certain phonological processes apply (Czaykowska-Higgins 1988), among these, syllabification (Rubach & Booij 1990a,b, Rubach 1993). The presence of this

phonological boundary isomorphic with the prefix-root morphological boundary constrains prefix-final obstruents from being syllabified in the onset of the following vowel and constrains a root-initial sonorant from being syllabified as the coda of a preceding prefixal vowel.¹⁰ The effects of the prefix-root boundary on syllabification are lacking only in words where lexicalization – as a result of semantic change – has erased this boundary, as in the Polish word *rozumieć* ‘to understand’ (< *roz* + *umieć* ‘to know’).

The data in (9)¹¹ indicate that the prefix-root boundary in Kashubian seems to affect syllabification of prefixes as intact units in the same way it does in Polish, Russian and Slovak, but it does not significantly constrain the syllabification of a root-initial sonorant or fricative with the preceding vowel of a prefix. The example of *rozëmny* (a derivative of the Kashubian cognate of *rozumieć*) shows that here too the prefix-root boundary may be invisible to syllabification in lexicalized forms.

(9)		MB=SB	MB≠SB
bez+měslny	‘thoughtless’	bez.məslni (9)	be.zməslni (0)
ni+gdze	‘nowhere’	ni.gze (5)	nig.ze (2)
o+mglati	‘faint(ed)’	wo.mglati (1)	wom.glati (6)
ob+jachac	‘to ride around’	wob.jaxac (5)	wo.bjaxac (2)
ob+ktōdka	‘cover’	wob.ktāḍka (6)	wø.ḅktāḍka (1)
od+powiescë	‘answers’	wod.p ^w oviescə (5)	wod.p ^w oviescə (2)
po+spólny	‘common’	p ^w o.spólni (3)	p ^w os.pólni (4)
po+zdrzatk	‘view’	p ^w o.zdřatk (1)	p ^w oz.dřatk (5), p ^w od.řatk (1)
pod+częc	‘eavesdrop’	p ^w od.čęc (7)	p ^w o.dčęc (0)
przi+ńdze	‘will come’	při.ńze (1)	při.ńze (7)
roz+ëmny	‘reasonable’	roz.əmni (1)	ro.zəmni (6)

¹⁰ Rubach & Booij do not claim that a root-initial sonorant is **never** syllabified with a preceding prefix vowel, merely that variation in the syllabification of such sonorants is found, whereas **other** cluster-initial sonorants are consistently syllabified with the preceding vowel.

¹¹ In this and the following table, a plus sign in the orthographic word marks the prefix-root and root-root boundaries. MB = morphological boundary, SB = syllable boundary.

(9 contd)

roz+sôdzac	'to plant apart'	ros.sazac (6)	ros.ażac (1)
u+brzątwniony	'imaginary'	wu.břōtvioni (5)	wub.řōtvioni (2)
u+rznąc	'to cut off'	wu.řnōc (2)	wuř.nōc (4), wur.žnōc (1)
we+strzędny	'central'	ve.středni (5)	ves.tředni (1), vest.ředni (2)
za+drędzewiaći	'rusted'	za.drędzewiaći (6)	zar.ədzewiaći (1)
ze+msta	'revenge'	ze.msta (3)	zem.sta (3)

Just as the prefix-root boundary constitutes a boundary between domains of syllabification for many Slavic languages, so too does the boundary between lexical morphemes in a compound. This is shown to be the case for Kashubian in (10).

(10)		MB=SB	MB≠SB
na+těch+stopach	'at once'	natəx.stopax (7)	(0)
osme+nórtowi	'octogonal'	wosme.nortovi (5)	(0)
szesc+razowi	'six times (adj)'	šesc.razovi (6)	(0)
węc+manizna	'team'	vəc.manizna (7)	və.cmariizna (1)

6. Conclusion

Although further data need to be collected in order to determine whether the contradictions found here are aberrations or require further explanation, it seems that, in general, Kashubian syllabification follows the patterns established for Polish.

In particular, it seems that cluster-initial sonorants are almost always syllabified in the coda of the preceding syllable, while cluster-initial stops are usually syllabified in the onset of the following syllable, while cluster-initial fricatives may be syllabified in either the preceding or the following syllable.

Both the boundary between a prefix and the following root, as well as that between compounded morphemes, affects syllabification, although the requirement that onsets not have falling sonority may bridge these boundaries more frequently in Kashubian than in Polish.

Nazwisko _____ Imię _____

Ile lat ma pan/i? mniej niż 30 lat 30 – 50 lat więcej niż 50 lat

Gdzie pan/i dotąd mieszkał/a i jak długo? (Proszę podać nazwę każdego miasta / każdej wsi i ile lat pan/i tam mieszkał/a) 1. _____ (___ lat) 2. _____ (___ lat)

W jakich okolicznościach uczył/a się pan/i języka kaszubskiego? _____

Proszę podzielić kreską następujące kaszubskie słowa na zgłoski. Jeżeli zna pan/i więcej możliwości podziału na sylaby danego wyrazu, proszę je przedstawić obok podanej formy.

(Kaszubskie słowa są tu pisane według Słownika Polsko-Kaszubskiego Trepczyka. Jeżeli pan/i wymawia dane słowo inaczej niż tu przedstawiono, proszę je napisać - dzieląc na zgłoski - według pańskiej wymowy obok podanej formy.)

Prykłady: cëbula 'cebula' c ë / b u / l a
maszina 'maszyna' m a / s z i / n a

<u>kaszubski</u>	<u>polski</u>	<u>podział</u>	<u>alternatywy</u>
baran	'baran'	b a r a n	
bawic	'bawić'	b a w i c	
bawienie	'bawienie'	b a w i e n i e	
bawidło	'bawidełko'	b a w i d ł o	
bëlny	'porządny'	b ë l n y	
bezmëslny	'bezmyślny'	b e z m ë s l n y	
białka	'kobieta'	b i a ł k a	
biédny	'biedny'	b i é d n y	
błádzëc	'błądzić'	b ł a d z ë c	
cerzpnąc	'cierpnać'	c e r z p n a c	
chłopsczi	'męski'	c h ł o p s c z i	
dłudzi	'długi'	d ł u d ż i	
dobrze	'dobrze'	d o b r z e	
dzëwczã	'dziewczyna'	d z e w c z a	
dzywny	'dziwny'	d z y w n y	
gburzczi	'gospodarczy'	g b u r z c z i	
głosny	'głośny'	g ł o s n y	
karczma	'karczma'	k a r c z m a	
koscelny	'kościelny'	k o s c e l n y	
ksążkownica	'księgarnia'	k s a ż k o w n i c a	
kuńszôrz	'sztukmistrz'	k u Ń s z t ô r z	
kwartalny	'kwartalny'	k w a r t a l n y	
manglarniô	'maglarnia'	m a n g l a r n i ô	
natëchstopach	'natchmiast'	n a t ë c h s t o p a c h	

nigdzie	'nigdzie'	n i g d z e
nôskwarny	'natrętny'	n ô s k w a r n y
obrôzkama	'obrazkami'	o b r ô z k a m a
objachac	'objechać'	o b j a c h a c
obkłodka	'okładka'	o b k ł ô d k a
ochrzęc	'ochrzcić'	o c h r z c ě c
odpowiescë	'odpowiedzi'	o d p o w i e s c ě
omglałi	'omdlały'	o m g l a ł i
osmenórtowi	'ośmiokątny'	o s m e n ó r t o w i
ówsny	'owsiany'	ó w s n y
podczęc	'podstuchać'	p o d c z ě c
pospólny	'wspólny'	p o s p ó l n y
pozdrzatk	'pogląd'	p o z d r z a t k
powitrzny	'pojutrzejszy'	p o w i t r z n y
przińdze	'przyjdzie'	p r z i ń d z e
rozëmny	'rozsądny'	r o z ě m n y
rozsôdzac	'rozsadać'	r o z s ô d z a c
spokójny	'spokojny'	s p o k ó j n y
starszëzna	'starszeństwo'	s t a r s z ě z n a
stółcznik	'krześlarny'	s t ó ł c z n i k
strzébrzny	'srebrny'	s t r z é b r z n y
szescrazowi	'sześciokrotny'	s z e s c r a z o w i
szportowno	'żartobliwie'	s z p o r t o w n o
tôfla	'tablica'	t ô f l a
ubrzątwniony	'urojony'	u b r z ą t w i o n y
urznąc	'urznąć'	u r z n ą c
westrzédny	'środkowy'	w e s t r z é d n y
wëcmanizna	'spółka'	w ě c m a n i z n a
witrznica	'jutrenka'	w i t r z n i c a
zadrëdzewiałi	'zardzewiały'	z a d r ě d z e w i a ł i
zamszowi	'zamszowy'	z a m s z o w i
zemsta	'zemsta'	z e m s t a
zmiarznąc	'zmarznąć'	z m i a r z n ą c
zôłtëchny	'żółciuchny'	z ô ł t ě c h n y

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