Palatalization processes in Kashubian from the perspective of Lexical Phonology and Optimality Theory

Justyna Kosecka

Praca doktorska
wykonana w Instytucie Anglistyki
Wydziału Neofilologii Uniwersytetu Warszawskiego
pod kierunkiem prof. zw. dr. hab. Jerzego Rubacha

Warszawa 2020

Palatalization processes in Kashubian from the perspective of Lexical Phonology and Optimality Theory

Justyna Kosecka

A dissertation submitted
to the Institute of English Studies, University of Warsaw
in partial fulfilment of the requirements
for the degree of Doctor of Philosophy in Linguistics

Thesis supervisor: Professor Jerzy Rubach

Warszawa 2020

Preface

This dissertation examines palatalization processes of the North-Slavic language, Kashubian, spoken in East Pomerania, in Northern Poland. The investigation of the processes is framed in the theoretical context of three generative phonological theories: Lexical Phonology, Optimality Theory, and Derivational Optimality Theory. The primary goal of this dissertation is to test the operation of the theoretical frameworks on the material from Kashubian. The dissertation also aims at analysing palatalization processes active in Kashubian, especially those applying to coronals and velars. The third aim of this dissertation is to take part in the long-standing debate on the status of the vowel [ɨ] in Slavic languages, namely, whether [ɨ] is an allophone of /i/ or whether it constitutes a separate phoneme.

This dissertation is organised as follows. Chapter 1 presents the goals of the dissertation and gives a general introduction to the frameworks of Lexical Phonology and Optimality Theory, to be used throughout the dissertation.

Chapter 2 provides the basic facts regarding the Kashubian consonants and vowels that are relevant from the point of view of the dissertation. The chapter reviews the state of investigation on the vowel representations. The discussed analyses focus on central dialects of Kashubian. The final section of the chapter provides a reanalysis of Jocz's (2013) vowel system and its adaptation to a vowel chart of the present-day Kashubian vowels spoken in central Kashubia.

Chapter 3 presents an outline of phonological approaches to //ɨ// in Slavic languages. The outline provides a historical perspective on the phonemic status of the vowel [ɨ] and the arguments of contemporary phonologists for and against treating [ɨ] as an independent phoneme, with the Rydzewski's (2016, 2017) analysis of a single-phoneme approach as the latest contribution to the debate. The final section transfers to Kashubian the arguments regarding the status of //ɨ// in Slavic languages.

Chapter 4 addresses the issue of palatalization processes in the class of coronals. The rule of Coronal Palatalization has been chosen as the starting point. The theory of Lexical Phonology serves as the framework for the analysis. The initial sections provide basic generalizations and, by drawing a parallel with Labial Palatalization and Velar Palatalization, state that the presented generalizations are instances of Coronal Palatalization, whose outputs are opaque in Kashubian. The opacity consists in the fact that the outputs of the rule are hard, i.e. [+back] coronals, whereas the process itself is a softening one, i.e. deriving [−back] outputs. This phenomenon proves to be an instance of the Duke of York gambit, under which the hard input is turned into a soft intermediate segment, only to be turned into a hard segment on the surface. The subsequent sections discuss the interaction between Coronal Palatalization and Velar Palatalization as well as other rules, including Vowel Fronting, Velar Softening and Hardening. The chapter proposes underlying representations for the masculine and feminine adjectives. Three possible scenarios for the shape of the masculine adjectival ending are explored: //i//, //i// and //ɨ// allomorphs, and //ɨ// with masculine and feminine endings entering the derivation at different levels. Next, an attempt is made at analysing denominal adjectives, taking the established facts into account.

Chapter 5 analyses the same palatalization processes but this time in the framework of Optimality Theory. The initial sections present basic generalizations and introduce the mechanics of palatalization in Optimality Theory, i.e. present the constraints playing a role in evaluating instances of palatalization. Next, palatalization processes triggered by //i//, and then triggered by //ɛ// are analysed. The analysis begins with velar inputs and immediately runs into difficulty because classic Optimality Theory, even with the auxiliary theories, is unable to account for opacity. The data call for adopting a different framework, which leads to the adoption of Derivational Optimality Theory, a modification of the classic OT allowing for level distinction. The basic concepts of the Derivational Optimality Theory are presented in

the following section of this chapter. Next, the processes are successfully reanalysed in the proposed framework. The second part of Chapter 5 deals with palatalization processes affecting coronals in a manner parallel to the analysis of palatalization processes affecting velars. Derivational Optimality Theory allows for a successful account of the analysed data.

Chapter 6 summarizes the discussion and provides conclusions.

Acknowledgements

First and foremost, I would like to express my utmost appreciation for Professor Jerzy Rubach for his excellent guidance and invaluable assistance. I am particularly grateful for showing me the logic of phonology and for turning my head to the treasure of Slavic languages and the beauty of Kashubian, throughout my MA and then graduate studies. Had it not been for his encouragement and support, this dissertation would still have been incomplete.

My deepest gratitude goes also to my parents, Barbara and Ryszard Wenta. Thank you for showing me my heritage and teaching how to be proud of it. Thank you for your unconditional love and faith in me. And finally, thank you for lending me Kashubian dictionaries and cooking dinners, so that I could focus on my work.

I would also like to thank my husband, Konrad Kosecki. Thank you for standing by me in good and not so good moments. Thank you for not doubting in me when I myself doubted. Thank you for your help during writing this thesis and coping with the house and children logistics when I most needed it.

My thanks is also due to Joanna Zaleska who, especially in the last few years, has not let me lose my sense of purpose and has always encouraged and supported me in pursuing this thesis. I admire your intellectual charisma, the willingness to share your knowledge as well as ability to explain most complicated issues in the simplest way. I will always remember your help and giving answers or providing a direction to all of my phonological (and not only phonological) questions.

Thanks go to my employers, Iga Fischer and Dariusz Obrępalski, who understood the need of my finishing this project and let me stay in the office after hours to work on my dissertation.

Last but not least, I am deeply indebted to my informants from Załakowo: Sylwia Mielewczyk, Zofia Wenta, Mirosław Lejk, and Janusz Wenta. Thank you for your patience and providing answers to all of my questions.

Symbols and Abbreviations

acc. – accusative

adj. – adjective

adv. – adverb

AJK – Atlas of the Kashubian Language

aug. – augmentative

C – consonant

dat. – dative

dim. – diminutive

DOT – Derivational Optimality Theory

fem. – feminine

gen. – genitive

inf. – infinitive

instr. – instrumental

loc. – locative

LP – Lexical Phonology

masc. – masculine

neut. – neuter

nom. – nominative

OT – Optimality Theory

pej. – pejorative

pers. – personalizing

pl. – plural

SCC – Strict Cyclicity Constraint

SR – surface representation

sg. – singular

UR – underlying representation

V – vowel

verb. – verbalizing

voc. – vocative

WFR – word formation rule

* – incorrect form

* – in a tableau: constraint violation

/ / – intermediate representation

// // – underlying representation, input

[ ] – surface representation

‘ ’ – glosses

’ – palatalization

+ – morpheme boundary

– word boundary

>> – ranked higher than

! – fatal violation

☞ – winning candidate

☜ – undesired winning candidate

☹ – elimination of the desired candidate

→ – “becomes”

⊃ – includes

to my parents

and to Konrad, Alek, and Jerzyk

Table of contents

Preface

Acknowledgements

Symbols and Abbreviations

Chapter 1 Introduction 14

1.1. Goals of the dissertation 14

1.2. Lexical Phonology 14

1.3. Optimality Theory 17

Chapter 2 Kashubian Surface Inventory: Descriptive Account 19

2.1. Kashubian 19

2.2. Consonant inventory 20

2.3. Vowel inventory: state of investigation 21

2.3.1. The Atlas of Kashubian Language: description based on extensive fieldwork 22

2.3.2. Topolińska: a historical perspective 24

2.3.3. Dejna: description of Polish dialects 26

2.3.4. Treder (1981): description for learning purposes 26

2.3.5. Stone (1993): description of common Kashubian 28

2.3.6. Generative analyses: Hopkins (2001), Brzostek (2007) 28

2.3.7. Makùrôt (2016): prescriptive account 29

2.3.8. Jocz (2013): system supported by acoustic analysis 30

2.4. Pronunciation of vowels: generalizations 31

Chapter 3 Exceptional Status of [ɨ] in Kashubian 36

3.1. Phonological approaches to [ɨ] in Slavic languages 36

3.1.1. Kazan School of Linguistics: *i mutabile* 36

3.1.2. St. Petersburg School of Linguistics: [ɨ] is as a shadow of [i] 37

3.1.3. Generative phonology: continuous debate on the status of [ɨ] 37
3.1.4. Plapp (1996): [i] and [ɨ] are distinct segments 38
3.1.5. Rydzewski (2016, 2017): dismissal of a single-phoneme approach 42
3.2. Status of [ɨ] in Kashubian 47
Chapter 4 Palatalization processes in Kashubian: Lexical Phonology 50
4.1. Basic generalizations 50
4.2. Labial and Velar Palatalization in Kashubian 54
4.3. Palatalization from the Perspective of Feature Geometry 58
4.4. Duke of York derivations 60
4.5. Implicational generalization of the context 62
4.6. Palatalization of //s z// 63
4.7. Status of Coronal Palatalization: cyclic or postcyclic? 70
4.8. Interaction of Coronal Palatalization and Velar Palatalization 72
4.8.1. Overview of issues 73
4.9. Data 74
4.9.1. Underlying representation of the masculine ending 75
4.9.1.1. Hypothesis 1: //i// is the UR of the masculine ending 76
4.9.1.2. Excursus on Velar Palatalization and Velar Softening 77
4.9.1.3. Hypothesis 1 continued: Vowel Retraction scenario 79
4.9.1.4. Hypothesis 2: allomorphs in the underlying representation of the masculine nom.sg. ending 82
4.9.1.5. Hypothesis 3: //ɨ// is the UR of the masculine ending 84
4.9.2. Velar Softening in masculine and feminine adjectives 85
4.9.2.1. Absence of Velar Softening in feminine adjectives 87
4.9.3. Denominal Adjectives 92

4.9.3.1. Denominal adjectives in level phonology 100
4.10. Conclusion 103
Chapter 5 Palatalization Processes in Kashubian: Optimality Theory 106
5.1. Mechanics of palatalization in Optimality Theory 106
5.1.1. Basic generalizations 107
5.1.2. Palatalization as fronting of the consonant 108
5.1.3. Palatalization constraints 110
5.2. Palatalization of velars 113
5.2.1. Palatalization-*e* 114
5.2.2. Ban on soft dorsals 115
5.2.3. Stridency 116
5.2.4. Posteriority 118
5.2.5. Spirantization 119
5.2.6. Palatalization-e – constraint ranking 121
5.3. Palatalization-*i* 122
5.3.1. Data 122
5.3.2. Absence of Spirantization: failed evaluation 123
5.3.3. Derivational levels 128
5.3.4. Absence of Spirantization: Derivational OT analysis 129
5.3.5. Velar Fronting 132
5.3.6. Absence of palatalization in feminine adjectives 135
5.3.7. Feminine adjectives: level 3 141
5.3.8. Verbalizing morpheme: //i// or //ɛ//? 142
5.3.8.1. Infinitives: reanalysis of palatalization processes 148
5.4. Partial conclusions 150

5.5. Coronal Palatalization 151
5.5.1. Palatalization-*e* 152
5.5.2. Palatalization-*i* 159
5.5.3. Palatalization in denominal adjectives 161
5.5.4. Partial conclusions 165
Chapter 6 Conclusions 168
References 174
Appendix A: Fieldwork 183
Appendix B: List of tokens 186
Streszczenie 191

Chapter 1

Introduction

1.1. Goals of the dissertation

This dissertation addresses the issue of different approaches to palatalization of coronals and velars in three theories: Lexical Phonology (Kiparsky 1982, Rubach 1984, Booij and Rubach 1987), Optimality Theory (Prince and Smolensky 2004, McCarthy and Prince 1995), and Derivational Optimality Theory (Rubach 1997). Kashubian serves as a testing ground for the operation of these three theories.

The examination of the issues related to Kashubian palatalization processes (especially the opacity of the Coronal Palatalization) and their interaction exposes shortcomings of Lexical Phonology and calls for a modification of the theory's assumptions. The analysis is subsequently remodelled in Optimality Theory. It is argued that Kashubian phonology demonstrates that the standard, i.e. parallel, Optimality Theory is unable to cope with the data in an adequate manner. The core challenge for Optimality Theory is the opacity of the analysed processes. Due to the above, this dissertation employs Derivational Optimality Theory as an alternative to the classic Optimality Theory.

The basic concepts of Lexical Phonology and Optimality Theory are presented in the sections to follow. The mechanics of palatalization in Optimality Theory and the operation of Derivational Optimality will be discussed in Chapter 5.

1.2. Lexical Phonology

Lexical Phonology assumes the existence of lexical and postlexical components in the language system. The lexical component comprises rules operating only on the word level.

Additionally, lexical rules may have exceptions to their operation. Postlexical rules apply on the phrase level, and are exceptionless (Kiparsky 1982, Booij and Rubach 1987). According to the theory, there are three types of rules: cyclic, postcyclic, and postlexical. Cyclic and postcyclic rules operate in the word domain, whereas postlexical rules operate across the board in the sentence domain. The basic assumption, following from SPE (Chomsky and Halle 1968), is that rules are language-specific.

Lexical Phonology claims that word formation takes place in the lexicon. Moreover, word formation rules (WFR, henceforth), including inflection rules, interact with cyclic phonological rules.

I also assume Kiparsky's (1973) notion of the Derived Environment Constraint stating that the application of lexical rules is restricted to structures derived either morphologically or phonologically, by WFRs or by operation of phonological rules, respectively. The concept the Strict Cyclicity Constraint (SCC, henceforth) has been defined many times, among others by Bermùdez-Otero and McMahon (2006), as presented below.

(1) Strict Cyclicity Constraint

Stem-level rules can apply in structure-changing mode only to representations derived in the same cycle. Stem-level rules apply in derived environments.

The Strict Cyclicity Constraint governs the application of rules in cycles (Mascaró 1976, Kiparsky 1982, 1985). The Constraint encompasses the following requirements (Kenstowicz 1994: 208).

(2) Requirements of the Strict Cyclicity Constraint

a. The rule makes crucial reference to information in the representation that spans the boundary between the current cycle and the preceding cycle.

b. The rule applies solely within the domain of the previous cycle but crucially refers to information supplied by a rule operating in the current cycle[1].

Postcyclic rules on the other hand, apply across the board to words already derived, and do not interact with WFRs. They are not subject to the Strict Cyclicity Constraint.

Lexical Phonology permits the possibility that a rule does not belong to a single component, but may apply both cyclically and postcyclically, or lexically and postlexically (Kiparsky 1985). The theory also develops the notion of Structure Preservation (Kiparsky 1982) stating that structures existing at the underlying level are preserved, that is, rules cannot generate segments that are not members of the underlying inventory. Lexical rules are structure-preserving, while postlexical rules may but need not be non-structure-preserving.

Table (3) sums up the main properties of the phonological rules (Rubach 2008: 470).

(3) Properties of phonological rules

	Cyclic	Postcyclic	Postlexical
1. Interaction with WFRs	yes	no	no
2. Cyclic application	yes	no	no
3. Strict Cyclicity Constraint (derived environments)	yes	no	no
4. Word level	yes	yes	no
5. Phrase level	no	no	yes
6. Morphological conditioning	OK	OK	no
7. Lexical conditioning	OK	OK	no
8. Exceptions	OK	OK	no

[1] Cyclic rules apply only in derived environments. A derived environment may be of two types: morphologically or phonologically derived. A morphologically derived environment arises when a word-formation rule has applied. A phonologically derived environment is created by a rule applying earlier on the current cycle.

The assumptions of the theory outlined in this section together with the guidelines for the identification of rules constitute the basis for an analysis of processes affecting Kashubian coronals and velars in Chapter 4.

1.3. Optimality Theory

Optimality Theory (Prince and Smolensky 2004, McCarthy and Prince 1995) compares output forms with their input counterparts. The grammar's essence is markedness, i.e. the idea that all types of linguistic structures are either universally marked or unmarked. Unmarked structures are preferred across languages, whereby marked structures are to be avoided and used only to create contrast. For example, open syllables are unmarked, since all languages have open syllables (CV, V) and only certain languages allow closed syllables (CVC, VC). Optimality Theory builds markedness into universal output constraints. The constraints state which structures are marked or unmarked (e.g. 'no closed syllables').

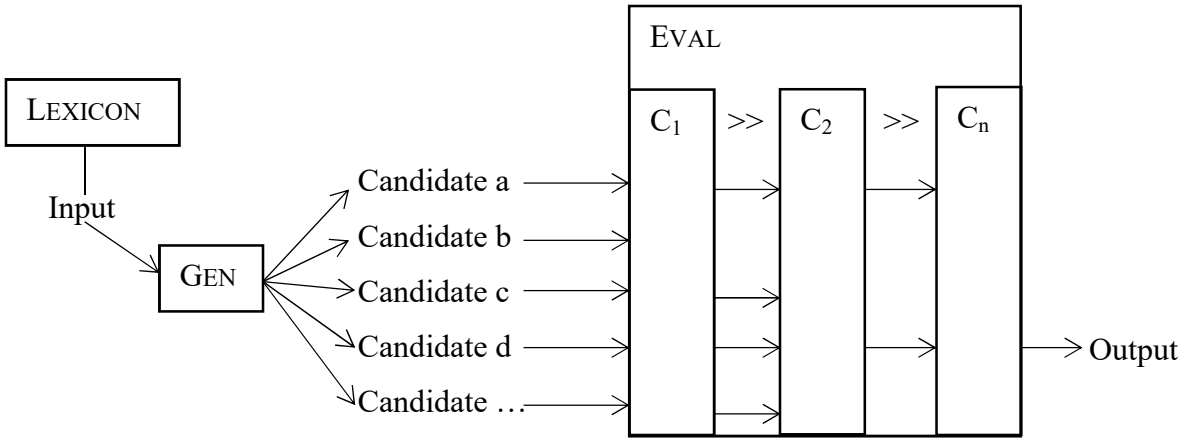
However, since languages tolerate marked structures to a certain extent. Constraints must be violable rather than absolute. The best output of the grammar is the form that contains the least costly violations of the constraints.

Differences between languages are due to differences in the rankings of the universal constraints. All violations are costly, but a violation of a higher-ranked constraint is more costly than violation of a lower-ranked constraint. The winner is the form whose violations are least costly.

Obedience to markedness constraints comes at the cost of violating faithfulness, which requires that lexical contrasts be preserved. A faithfulness constraint militates against any discrepancy between the input and the output. The candidates that have introduced changes with respect to the input form are penalized. Faithfulness constraints control markedness constraints.

The output of a constraint evaluation becomes optimal when it incurs the least serious violations of the language's set of constraints (ordered in a ranking). The grammar generates a potentially infinite number of output candidates for a given input. It is the task of the evaluation procedure to select the optimal candidate, i.e. the actual output. The procedure is presented schematically in (4), adapted from Kager (2004).

(4) Mapping of input to output in OT grammar



LEXICON stores input forms and feeds underlying strings into GEN. GEN generates a set of candidates that are possible outputs for the submitted input. The candidates proceed to EVAL, where universal constraints, ranked on a language specific basis, evaluate whether the candidates satisfy the constraint hierarchy. The candidate that incurs least serious violations becomes the optimal output and is chosen as the output form. As the name suggests, the optimal output will never be perfect. Every form will violate some of the constraints.

To sum up, Optimality Theory encompasses the notion that constraints are universal for all languages of the world. The universal constraints are violable and are ranked differently in different languages.

Chapter 2

Kashubian Surface Inventory: Descriptive Account

This chapter presents the basic facts from the phonology of Kashubian. Section 2.1 presents the background information on Kashubian. Section 2.2 and 2.3 focus on the description of historical and current accounts of the consonantal and vowel systems, respectively. Section 2.4 aims at establishing the vowel inventory for Kashubian.

2.1. Kashubian

Kashubian is a Slavic language. It belongs to the group of languages spoken in the North, referred to sometimes as the subgroup of Lechitic languages, together with Polabian, and Polish. Kashubian is a language of approximately 108,000 speakers,[2] spoken in the North of Poland, in the area of about 2,500 square kilometres, enclosed by the Baltic Sea from the North, the Lower Vistula from the East, and by the borders of Polish dialects from the other sides. Officially, Kashubian is regarded as a regional language, thus having a status higher than a dialect, but lower than a fully recognized autonomous language. Kashubian is usually regarded by linguists as a system separate from other Polish dialects (Stone 1993, Olbracht-Prondzyński 2007). This is also the position adopted in this dissertation. Nowadays, virtually all Kashubs are bilingual, sharing the knowledge of Kashubian and Polish.

Lorentz (1927–1937) in his fieldwork identified as many as 76 distinct dialects of Kashubian. Many of them are still spoken. The dialects can be grouped into six regions (AJK): South-East, South-West, East Central, West Central, North-East, and North West. Of these, the Northern dialects are considered the most archaic, i.e. having the most distinct system. The Southern dialects share the most common features with Polish, whereas the

[2] https://stat.gov.pl/cps/rde/xbcr/gus/LUD_ludnosc_stan_str_dem_spo_NSP2011.pdf

Central dialects have the greatest number of speakers and constitute the basis for the literary variant of Kashubian. This dissertation will focus on the West Central dialects of Kashubian, and, specifically, on the Sierakowice and Sulęczyno dialect.

2.2. Consonant inventory

The Kashubian surface consonantal inventory consists in 26 segments. The consonants are presented in the table below.

(1) Kashubian consonantal system

	bilabial	labio-dental	dental	retroflex	alveolar	post-alveolar	prepalatal	palatal	velar
stops	p b		t d						k g
affricates					ʦ ʣ	ʧ’ ʤ’			
fricatives		f v		ʂ ʐ	s z	ʃ’ ʒ’			x
nasals	m		n				ɲ		
laterals					l				
approximants									
rolled					r				
semi-vowels								j	w

Consonant [ʐ] is marked in spelling with *rz*. Consonant [ʂ] is its voiceless counterpart. In some dialects the retroflex fricative is replaced with hard [ʒ] (and [ʃ], respectively). Jocz (2014) distinguishes two more consonants: [ɣ] and [ŋ]. The voiced velar fricative is marginal in the system and its occurrence is restricted mainly to foreign words. The occurrence of [ŋ] is restricted to the context of a following velar stop, as in *wiãkszi* [ŋk] ‘bigger’ or *kąkel* [ŋk] ‘corn cockle’ and therefore can be treated as an allophone of [n] resulting from nasal

assimilation.[3]

For the purpose of this dissertation, the following facts of the Kashubian consonantal inventory are relevant.

i. Coronal consonants include dental stops [t d], fricatives [s z], affricates [ʦ ʣ] and soft postalveolars, namely, [ʃ’ ʒ’ ʧ’ ʤ’]. The postalveolars in Kashubian do not have their hard counterparts (Breza and Treder 1981: 63–68). The system includes also a hard retroflex coronal [ʐ] denoted in the spelling as *rz*. This consonant is always hard and as such stands in opposition to soft [ʒ’] (Jocz 2014: 23), as in, for example, *mòrze* [mwɛʐɛ] ‘sea’ vs. *mòże* [mwɛʒ’ɛ] ‘maybe’.

ii. There are no soft prepalatal [ʦ̟ ʣ̟ ɕ ʑ] in the consonantal system of Kashubian, although these segments are assumed to be historically present in the consonant inventory (Dejna 1973, Breza and Treder 1981). The consonants can appear in the speech of some speakers, but it is hard to establish whether this indicates a phenomenon of re-entering of this sequence into the consonantal system or whether it results from code-switching, or whether this reflects the influence of the neighbouring Polish. The most recent research does not support treating [ʦ̟ ʣ̟ ɕ ʑ] as a separate class in the Kashubian inventory (Jocz 2014: 31).

iii. Velar segments include [k g x] (Breza and Treder 1981: 68–69, Jocz 2014: 9).

2.3. Vowel inventory: state of investigation

Due to a large variety of local sub-dialects of Kashubian, there is no single standard of the Kashubian vowel system. I present below the historical description of the Kashubian vowel

[3] Jocz (2014) notes that nasal assimilation is not always present where it would be expected, as for example, in *rynku* [nk] ‘market’ (gen.sg.). Here, the nasal is followed by a velar stop, and yet no assimilation occurs. This is true, but that does not disprove the allophonic nasal assimilation. My assumption is that the assimilation is blocked by a yer, present in the UR and deleted at some stage of the derivation. However, the discussion of yers and their blocking effects is beyond the scope of this dissertation. For a discussion of yers in Polish, see e.g. Rubach (1984, 2016).

system focusing on the dialects of central Kashubia, and in particular on the Sierakowice and Sulęczyno dialect, which constitutes the testing ground for the phonological theories presented in Chapter 4 and Chapter 5.

The data gathered in the fieldwork described in the existing literature come mostly from the 1950s (AJK 1964–1978). There has been no major fieldwork conducted since then, with Jocz (2013, 2014), supported with an acoustic analysis, being the sole exception.

The first phonetic descriptions of Kashubian come from the 19th and early 20th centuries and include Prejs (1840), Hilferding (1862) and Ceynowa (1879) and, most notably, Lorentz (1927–1937). However, none of these works is specifically devoted to phonetic or phonological description.

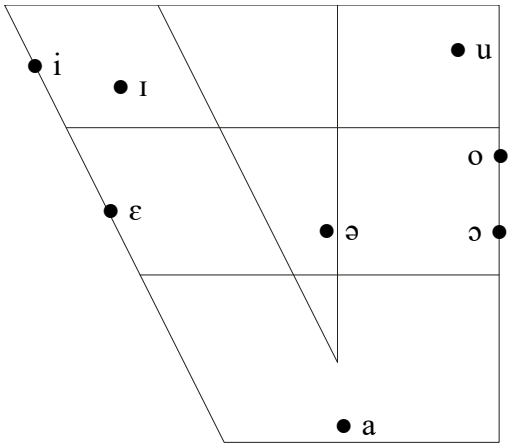
The following sections focus on the descriptions of major significance in the literature which are treated as state-of-the-art. I attempt at transcribing the presented vowel systems in the IPA convention. The descriptions focus on the central Kashubian dialects, with the dialect spoken in the area of Sierakowice, that is in the Western part of central Kashubia, being of the core interest.

2.3.1. The Atlas of Kashubian Language: description based on extensive fieldwork

The Atlas of Kashubian Language (AJK, henceforth), a monumental publication, is an effect of extensive linguistic fieldwork conducted by a team of researchers from the 1950s to the 1970s under the supervision of Zdzisław Stieber and Hanna Popowska-Taborska (Popowska-Taborska 2004). The results of the research were published in 15 volumes between 1964 and 1978. Since this dissertation focuses on the Sulęczyno and Sierakowice dialect, the description below is restricted only to the dialects denoted as Kashubian in the Atlas, and especially to the area focused on the research point no. 57, which is the village of

Sierakowice. The chart below presents phonetic realizations of historical vowels in the village of Sierakowice.

(2) Sierakowice vowel system (AJK)



Kashubian spoken in the area of Sierakowice is argued to be composed of eight vowels: three front vowels [i e ɛ] and three back vowels [u o ɔ], low [a] and the mid vowel [ə], which can also be realised as [ʌ]. The chart shows only the pronunciation of particular vowels and does not cover diachronic vowel developments.

The vowel written as *é*, was pronounced by the informants of AJK as [ɛ] in words such as *brzég* 'shore', *korzéń* 'root', and *łeb* 'head' and as [i] in words *wiész* 'you know' and *sniég* 'snow'. The lexeme *len* 'linen' was pronounced either with [ɛ] or [e]. Schwa, transcribed as [ʌ] and [ə], is pronounced in words such as *mësz* 'mouse' and *lës* 'fox'.

The Atlas of the Kashubian Language states that the vowel system does not contain [ɨ] at all. The variant possible in some area is rather a lax [ɪ]. Unfortunately, the map devoted to the historical development of [ɨ] is based on the lexeme *mësz* 'mouse', in which the vowel is realized as [ʌ] (denoting schwa) or [ɛ] for most speakers. Synthetic map no.13 presents the occurrence of [ɨ] only in non-Kashubian parts covered by the fieldwork. In the comments to the map describing diachronic change *ɨ* → *i*, the authors state that the vowel [ɨ] can appear in

words such as *syn* ‘son’ or *dim* ‘smoke’, in particular in the Western part of central Kashubia.

The vowel [a] appears in words such as *piszę* [ʃ’+a] ‘I write’ and in the 3rd person of preterite feminine verbs.

The back high vowel [u] appears in words such as *dłuto* ‘chisel’, *wąsko* ‘narrow’, *ząb* ‘tooth’, *gorączka* ‘fever’, and *drapią* [um] ‘they scratch’.

The Atlas describes [o] as a vowel pronounced between [ɔ] and [u]. The vowel is denoted by the phonetic symbol *ȯ* and is described as appearing side by side with [u] in the same area, even in the same lexemes.

According to the Atlas, the Kashubian vowel system contains also two diphthongs: [u̯u] in words such as *umrzeć* ‘to die’ and [ue] in words such as *konie* ‘horses’. The occurrence of diphthongs is widespread in onsets (some of which are described as prothetic onsets) and is rare in codas.

The nasalised vowels are reported to decompose in most parts of West Kashubia.

2.3.2. Topolińska: a historical perspective

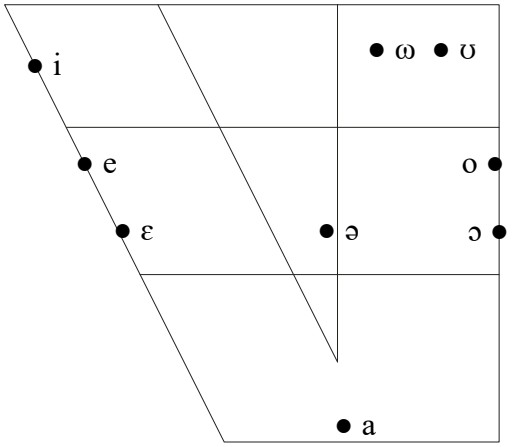
Topolińska (1974) accounts for the historical development of Kashubian. In her description of diachronic changes in the vowel system, she arrives at two variants of the system common for the central Kashubian dialects, containing nine oral vowels, with central vowels paired according to what can be understood as the tense–lax axis. Thus, the system contains tense [e o] and lax [ɛ ɔ], next to high back rounded [ʊ ω], high front [i], and central [ə a]. Kashubian nasal vowels are argued to have lost their nasalization. The system contains also the diphthong [ue].

The vowel [ɨ], not included in the vowel matrix, is pronounced by the speakers in free variation with [e] and [i], giving rise to a single ending of the nominative sg. case of adjectives, as in the adjective ‘good’ in *dobrô baba* [dobre baba] ‘good woman’ (fem.), *dobri*

chłop [dobre xwɔp] ‘good man’ (masc.), *dobro dzewczą* [dobre ʤefʧɑ̃][4] ‘good girl’ (neut.) (Topolińska 1974: 94). The vowel [ə] is in free variation with [e] when unstressed.

The system can be interpreted to look as in (3).

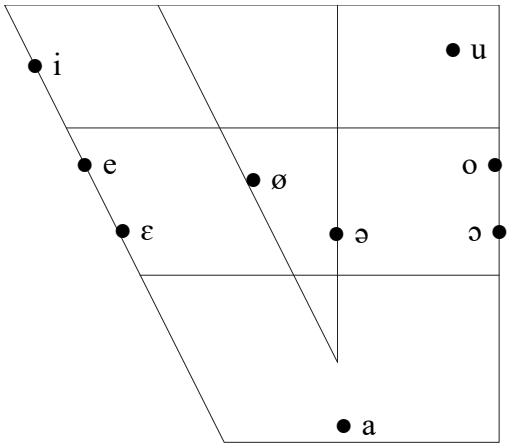
(3) Common central Kashubian vowel system (Topolińska 1974: 93)



The system can be also interpreted to include [u] instead of [ʊ] and [ʉ] instead of [ω] and an additional vowel in the central area, namely [ø] (Topolińska 1974: 130).

In her description of the Mirachowo vowels, representing central Kashubian dialects, Topolińska (1982) assumes nine vowels, translated into the vowel chart in (4).

(4) Mirachowo vowel system (Topolińska 1982: 46)



[4] I reproduce Topolińska’s transcription in these examples.

The system contains nine oral and two nasal vowels: [ɑ̃ ɔ̃]. As the phonemes are not illustrated with actual examples of pronunciation in words, there is no possibility to establish whether the vowels presented in the chart could be pronounced in a different way and, most notably, whether any of the phonemes could be pronounced as [ɨ].

2.3.3. Dejna: description of Polish dialects

According to Dejna (1973), [ə] appears in words such as *lës* 'fox', *sëny* 'grey', *rëbë* 'fish', and *lëst* 'letter'. The vowel [i] is pronounced, for example, after [ʧ' ʤ' ʃ'] in words such as *nodżi* 'legs', *drëdżi* 'second', *taczi* 'such', and *bic* 'to beat', and *niwa* 'field'. The vowel system contains also the vowel [ɛ]. The vowel [e] is described as distinct from [i] and [ɨ]. The vowel [u] appears in words such as *lud* 'people' and *dług* 'debt'.

Dejna explicitly states that there is no [ɨ] in the system. The perceived difference in pronunciation comes from the preceding consonant. If the consonant is soft, the vowel is perceived as 'clear' [i], if the consonant is hard, more of an [ɨ] quality on the following vowel may be perceived by the listener. This applies to pairs such as *bic* [b'i] 'to hit' and *bëc* [bi] 'to be' and *dimi* 'smokes' [m'+i] (3rd person sg.) and *dimë* 'smoke' [m+i] (pl.) (Dejna 1973).

The vowel transcribed as *ô*, derived from the historic long [a:], is placed by Dejna (1973) on the chart as unrounded *ö* [o̜] or as front non-labialized *ê*. The exact quality of the sound cannot be deciphered based on the description.

The diphthong [uo] appears in accented syllables in words such as *oko* 'eye', *woda* 'water'. In some areas, it can appear as [ue]: *woda* 'water', *pole* 'field'.

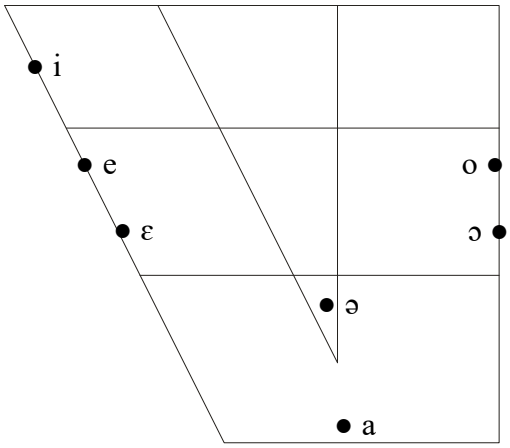
Kashubian has two nasal vowels denoted in the spelling as *ę* and *ą* (Dejna 1973).

2.3.4. Treder (1981): description for learning purposes

Treder (Breza and Treder 1981) describes two vowel systems present in central Kashubia: the

Kartuzy system and the Sulęczyno and Sierakowice system. The latter is presented in (5).

(5) Sulęczyno and Sierakowice vowel system (Breza and Treder 1981: 33)



The system, based on the Atlas of the Kashubian Language and Lorenz's research, contains seven vowels: front [i e ɛ], central [ə], back [o ɔ] and low [a]. Apart from these vowels, the inventory contains also two nasal vowels: [ɑ̃] and [ɔ̃]. According to Treder, the system does not contain the central vowel [ɨ].

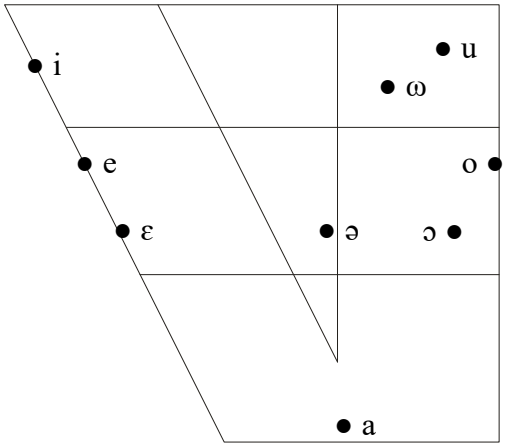
After hard coronals, the vowel is pronounced as [i], as in words *syn* [si] 'son', *zymk* [zi] 'castle', *cyrk* [ci] 'circus'. The orthographical symbol *y*, denoting [ɨ] e.g. in Polish, serves only to mark the consonant hardness. However, later Treder admits that the pronunciation of [ɨ] is possible in unstressed final syllables, in words such as *prosysz* [prɔsɨʃ˺] 'ask' (2nd-person sg.).

The vowel spelled *ô* is pronounced most often as [ɛ] in the Western central dialects, as in *wôga* [vɛga] 'weight'. Pronouncing the vowel as [e], [ɨ] or [i] is common in the area of Sierakowice, as in *stôri* [steri] 'old' (masc.). The vowel denoted in writing by *ô* is also pronounced as [i] or [ɨ] in adjectival endings, as in, for example, *szerokô droga* [ʃ˺ɛrɔkɨ drɔga] 'wide road' in central Kashubia (Breza and Treder 1981: 41). To conclude, Kashubian *ô* can have the quality of all non-low vowels, that is [ɛ e i ɨ] in central Kashubia.

2.3.5. Stone (1993): description of common Kashubian

Stone (1993) bases his description of the Kashubian segment inventory on secondary sources, mostly on Breza and Treder (1981) and The Atlas of Kashubian Language. He claims that the Kashubian vowel inventory contains nine oral and two nasal vowels. All dialects, especially with regard to vowels, are collapsed into one system. The oral vowels are presented in the chart below.

(6) Kashubian vowel system: all varieties (Stone 1993: 763)



The vowel [ω] denotes a segment midway between [o] and [u], as in *żót* [ʒ'ωt] 'stomach'. The vowel spelled as *ô* is pronounced [ɔ], as in *dôka* [dɔka] 'fog' (Stone 1993: 763). Further, Kashubian has a process of prothetic glide insertion word-initially, after labials, and after velars, as in e.g. *pòle* [pwɛle] 'field' or *koza* [kwɛza] 'goat' in the place of [o] and [u].

2.3.6. Generative analyses: Hopkins (2001), Brzostek (2007)

Both Hopkins (2001) and Brzostek (2007) analyse Kashubian in the framework of Optimality Theory. However, both of these analyses are based on secondary data. Hopkins gathers his data mostly from Gołąbek (1992, 1997), Sobierajski (1964), and Topolińska (1967). Central Kashubian dialects are taken as the basis of the research and the main focus is put on primary

and secondary stress, as marked in these sources. The data are complete with the division into syllables based on the intuitions of Hopkin's informants. The data gathered in the fieldwork are of supporting character and the sample is too small to conduct statistical research.

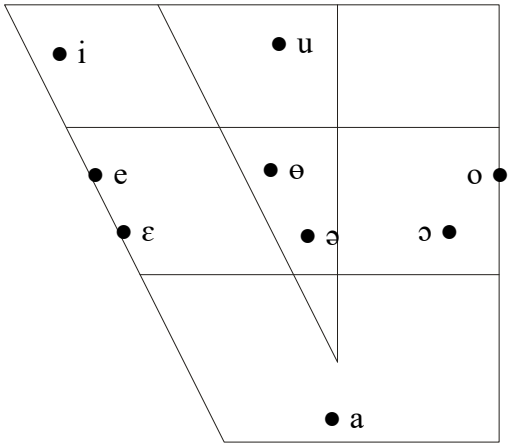
Brzostek (2007) anchors her analysis primarily in the descriptive sources of Ramułt (1893, 2003), Breza and Treder (1981, 1984), Gołąbek (2005), Wosiak-Śliwa and Cybulski (1992, 2001), Sychta (1967), Popowska-Taborska and Boryś (1994), Labuda (1988), and Trepczyk (1994), as well as Bobrowski and Kwiatkowska (2000). The sources include both descriptive and prescriptive literature. Like these sources, Brzostek focuses in her analysis on the central dialects of Kashubian.

As both Hopkins' and Brzostek's analyses are based on secondary sources, I will not repeat vowel charts specific for these dissertations. The vowel system presented in Hopkins (2001) appears to be adapted from the maximum vowel system presented in Topolińska (1967) with nine oral and two nasal vowels. The system does not contain the back vowel [ɨ]. The vowel system adapted in Brzostek (2007) corresponds to the vowel system of Breza and Treder (1981). It does not contain surface [ɨ]. However, Brzostek assumes that the vowel is present in the underlying representation of Kashubian.

2.3.7. Makùrôt (2016): prescriptive account

Makùrôt (2016) presents the Kashubian vowel inventory of literary Kashubian, that is, of the variant which is not native to Kashubs but rather aims at unifying the written and spoken language for literary and teaching purposes. The literary variant of Kashubian is based mostly on the central dialects. The graph in (7) presents the vowel chart.

(7) Literary vowel system (Makurat 2016: 18)



She adds that, the system, apart from the nine oral vowels presented on the chart, contains also two nasal vowels: [ɑ̃] and [ɔ̃]. Makurat describes the central vowel spelled *ô* as having the quality between [ɛ] and [ɨ], which would indicate schwa. The vowel is close to [ɔ] in some areas, as in the words *gôdô* [gɵdɵ] 'speaks' (3rd pers.sg.) or *terô* [tɛrɵ] 'now', which I transcribe as a rounded schwa.

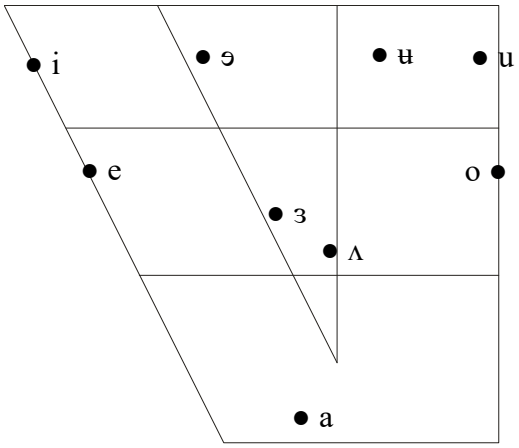
According to Makurat (2008), the system does not recognise the back vowel [ɨ]. The difference that may be perceived as the alternation [i] – [ɨ] resulting from the fact that the [i] developed diachronically from [ɨ] and does not trigger surface palatalization.

2.3.8. Jocz (2013): system supported by acoustic analysis

The vowel system presented by Jocz (2013) is supported with an extensive fieldwork and an acoustic analysis of the gathered data. The Western central dialects contain nine oral vowels. Nasal vowels are subject to decomposition in virtually all instances and thus they do not constitute separate phonemes in the vowel inventory. The segments presented in the chart below are conditioned historically and are of symbolic nature. The entries have different pronunciation variants, thus they do not fully reflect the phonetic state of affairs (Jocz 2013: 158). The chart in (8) presents Jocz's system. Placing the vowels on the chart was based on

the distinctive features and the phonetic matrix in Jocz (2013).

(8) Western central vowel system (Jocz 2013: 161)



The system presents the conclusions of the conducted research, supported with diachronic developments of vowels. It contains front [i], central [ɘ], which are [+high], and [e ɜ], which are mid and central vowels. The back vowels include high [ʉ u] and central [ʌ o]. The phonetically back vowels are [+round]. The low vowel [a] does not have its pair in the system.

2.4. Pronunciation of vowels: generalizations

Jocz's detailed descriptions of the vowels presented in chart (8) indicate that the presentation is to a large extent of symbolic character and is derived from the historical developments of specific vowels. Different realisations of the given phonemes are possible, if not common.

I present below a possible interpretation of the Western central vowel system based purely on current pronunciation of the phonemes included in the chart. The interpretation is supported by my fieldwork conducted in the village of Załakowo with 5 informants (3 men and 2 women). My fieldwork is of secondary value to the material presented in Jocz (2013,

2014) and as such will not be discussed in the following sections[5]. My research focused on testing the pronunciation variants of certain vowels, with primary focus on front and central vowels. In my interpretation below, I focus only on the vowels occupying the front and central areas in the vowel chart because establishing the status of these vowels is important for the phonological analysis that I present in the following chapters.

Jocz (2013: 19) states that in the pronunciation of the vowel represented orthographically as *i*, apart from [i], the vowel [ɨ] regularly appears in the system. In some instances the phoneme may be extracted as separate from [i] and in some instances there is a free variation (even within a single idiolect). The occurrence of [ɨ] is determined by the left hand side context, although there are single words which being with [ɨ], such as *uwò* [ɨwɛ] 'here'.[6] Thus, [ɨ] can appear after labials and appears almost always after [r]. The [+back] vowel appears also after [n] as well as after hard coronals [t d s z ʦ ʣ][7] competing here with [i], whereas the systemic occurrence of [ɨ] applies significantly more often in the Western part of central Kashubia. The vowel following soft [ʃ' ʒ' ʧ' ʤ'] as well as [ɲ] and [j] is always realized as [i]. The context of velars is more complex: [k g] are almost always followed by [i] whereas [x] can be followed by both [i] and [ɨ]. After [w] both [i] and [ɨ] are attested. To conclude, high unrounded vowels can be pronounced as [i ɨ][8] in Kashubian, whereby the variant [ɨ] is much more common in the Western part of central Kashubia. The variant appears in many contexts, in some of which very regularly. I shall transfer both [i] and [ɨ] to the vowel system proposed in (9).

The vowel represented in the spelling as *é* and transferred to chart (8) as [ə] is pronounced as non-labialized [ɨ] in most instances, as in words *délów* [dɨluf] 'beam' (gen.), *zédżer* [zɨʤ'ɛr] 'clock', *codzéń* [ʦɔʣiɲ] 'every day', and as [i] after soft consonants, for

[5] Appendices 1 and 2 provide the description of my experiment and the list of most important analyzed tokens.
[6] This instance comes from my own fieldwork.
[7] The variation is between [ɨ] and [ɪ] (Jocz 2013: 37).
[8] The lax vowel [ɪ] is also a possible variant in this context.

instance in *né* [ɲi] ‘no’ or *zbiéróm* [zbʲirum] ‘I gather’. The vowel is concluded unambiguously to be pronounced as [ɨ] in its basic variant. I shall also transfer the segment as [ɨ] into the vowel chart.

The vowel transcribed in Jocz (2013) as [e] indicates [ɛ]. I shall thus transcribe the mid front vowel as [ɛ] in the remainder of this dissertation in order not to confuse it with tense [e].[9] The mid front vowel may be pronounced as [ɛ], but also as a slightly higher [ɛ̝] in words such as *przedtim* [pʃɛ̝t:ɨm][10] ‘before’ or retracted [ə], as in *serce* [sərtsɛ] ‘heart’. I shall reduce [ɛ] and [ɛ̝] to a single representation of [ɛ] and retain [ə], as it is also present in the system.

The orthographical symbol denoting schwa (*ë*), and transcribed as [ʌ] in chart (8), is realised in the area restricted by points [ɜ]–[ɐ]–[ʌ]–[ə]. I shall reduce these realizations to a single representation: [ə].

Problematic for an analysis is the segment denoted by the letter *ô*, represented by Jocz as [ɵ] for Eastern and intermediary central dialects and as [ɜ] for Western central dialects. Jocz (2013) derives this segment historically from [a:] and states that in the Western part of central Kashubia, the segment is realised as [ɨ] in most instances in his data, as, for example, in *nôbarżi* [nɨbarʒ’i] ‘the most’, *môsz* [mɨʃ’] ‘you have’, or *czekô* [ʧ’ɛkɨ] ‘(s)he waits’. Feminine adjectives, such as *sëvô* ‘grey’ can be pronounced, according to Jocz (2013), only as [səvɨ]. The segment denoted by *ô* can also be realised as [ɛ] in words such as *nôprzód* [nɛpʃut] ‘firstly’, *dlô* [dlɛ] ‘for’, and *jô* [jɛ] ‘me’[11]. The third attested vowel is [i], as in *lepszô* [lɛpʃ’i] ‘better’ (fem.), *nômłodszô* [nɨmwɔdʃ’i] ‘the youngest’ (fem.). To conclude, I shall transcribe the vowel represented orthographically as *ô* as [ɨ], [i], or [ɛ], depending on its actual pronunciation.

The back vowels are represented by two symbols: [o] and [u] in Jocz (2013). The

[9] Similarly, I shall transcribe the symbol [o] used in Jocz (2013) to denote [o] and [ɔ] as [ɔ] in this dissertation.
[10] I mark the voiceless counterpart of the hard [ʒ] as [ʃ]. These phonemes are marked by Jocz as [ʒ̨] and [ʂ] respectively.
[11] Jocz (2013) also recognizes the pronunciation as [ɵ] in the speech of some speakers.

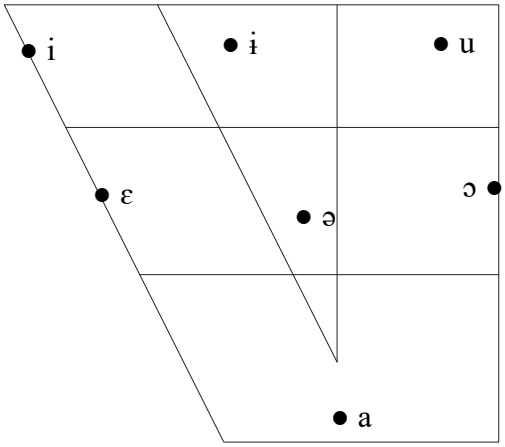
vowel represented in the chart as [o] is spelled as *ò* or *o* in the Kashubian alphabet. The vowel is most often pronounced as [ɔ] and is described by Jocz as more rounded than Polish having the quality of the Russian [ɔ] (Jocz 2013: 97).

In specific positions, namely, in the onset and after labials and back vowels, vowels denoted in the spelling as *ò* or *ó* often become diphthongs, namely [wɛ], [wɨ] or [wɔ], as for example in *òn* [wɛn] 'he', *gòrszi* [gwɛrʃʾi] 'worse' (masc.), *óws* [wufs] 'oat' or *ògródk* [wɛgrutk] 'garden' (dim.). For some speakers, the diphthongization appears to be facultative. I will not discuss the nature of the diphthongs in this dissertation. Whether the [w] provides a prothetic onset or whether it occurs for a different reason remains an open question. I shall arbitrarily treat the diphthongs as optional and not include them in the vowel chart proposed below.

The vowel transcribed as *u* or *ù* in the spelling and transferred into a chart as [u] by Jocz is pronounced as [u ʏ y] or as unlabialized [i ɪ ɨ] by his speakers. Again, diphthongs can appear after labials and back vowels, as in *(sã) ùczëc* [wɨʧʾɛʦ] 'to study' or *rogù* [rɔgwɨ] 'horn' (acc.). The chart in (9) reduces the phonemes to [u] and [i ɨ], respectively. The remaining rounded variants are most probably individual preferences or are a result of vowel place assimilation, an issue that requires further investigation.

The vowel transcribed in Jocz as [a], marked in the spelling as *a*, is generally assumed to be a correspondent of the Polish vowel [a]: a low central vowel with more retracted variants in the speech of some speakers. I analyse vowel [a] as [+low] and [+back] and transfer it to the vowel chart. With these generalizations in mind, Kashubian surface inventory as shown in (9).

(9) Western central vowel system: front and central vowels



I conclude that the vowel system of the Western area of central Kashubian dialects consists of seven vowels. The surface inventory includes two front and two central vowels. The vowels [i] and [ɛ] described as [+front] are analysed here as [−back] in terms of the standard generative distinctive feature systems. The central vowels include [ɨ] and [ə]. Following the accepted parlance, I shall describe both of them as [+back] phonologically. The vowels [i ɨ] are [+high], whereas [ɛ ə] are [−high]. Back high vowels include rounded [u] and [ɔ]. The area of low vowels contains one element: [a].

I assume after Jocz that Kashubian nasal vowels, marked in the spelling as *ã* [õ] and *ą* [ã], undergo full denasalization on the surface. Hence, the Kashubian surface inventory does not contain nasal vowels.

To conclude, I assume the system presented in (9) to be the surface inventory of Kashubian and adopt it in the following chapters of this dissertation.

Chapter 3

Exceptional Status of [ɨ] in Kashubian

The aim of this chapter is to review the literature regarding the long-standing debate on the phonological status of [ɨ] in Slavic languages (Section 3.1). Section 3.2 attempts at adapting the presented arguments to Kashubian. My analysis supports the view that [ɨ] belongs to the Kashubian vowel inventory and is present both on the surface and in the underlying representation.

3.1. Phonological approaches to [ɨ] in Slavic languages

Determining whether [i] and [ɨ] are separate underlying morphemes or allophones of the single morpheme //i// is one of the central debates in the phonology of Slavic languages.

3.1.1. Kazan School of Linguistics: *i mutabile*

The problem of the phonemic status of [ɨ] in Slavic languages dates back to the turn of the 19th and 20th centuries and the debate between the Kazan School of Linguistics and the St. Petersburg School of Linguistics. Jan Baudouin de Courtenay (1894: 26), the main advocate of the former, argues that in Polish [i] in nominal plural endings is always preceded by a soft segment, whereas [ɨ] is preceded by a hard segment. Thus the phoneme in Polish is a single vowel [i] that has two phonetic realizations (referred to as i_1 and i_2). The evidence, according to Baudouin de Courtenay, lies in rhymes of pairs such as *pychy* [pɨ] 'pride' (gen.) – *cichy* [tɕi] 'quiet' and *były* [bɨ] 'they were' – *miły* [m'i] 'nice' (Baudouin de Courtenay 1984: 157). Such construed segment is called *i mutabile* (i_m) and can be represented as two sides of the

same coin. However, the phonemes argued for as being *i mutabile* in the aforementioned examples lay in the initial syllables of the words and not in the rimes. The initial vowels in the pair *były – miły*, [bɨ] – [m'i], do not rhyme. They are of different quality.

3.1.2. St. Petersburg School of Linguistics: [ɨ] is as a shadow of [i]

On the other hand, Lev Ščerba, Baudouin de Courtenay's student and the main proponent of the St. Petersburg School, claims that although the distribution of [ɨ] is restricted to certain word positions in Russian, the vowel should be regarded as a separate phoneme. The first criterion is the distinctive feature of a sound (Ščerba 1912: 3), namely whether the sound decides on the difference between two words whose other sounds are the same. The second criterion is the possibility to pronounce the sound in isolation (Ščerba 1912: 5), that is independently of the surrounding context. The sound [ɨ] fulfils both of these criteria and thus is a phoneme separate from [i]. Yet, the phoneme [ɨ] "[…] remain(s) in an intimate relationship with [the phoneme] *i*, of which it is something of a shadow."[12] (Ščerba 1912: 50).

3.1.3. Generative phonology: continuous debate on the status of [ɨ]

The discussion concerning the status of [ɨ] is also present in the modern phonology of Polish. Generative phonology adopts the view that [i] and [ɨ] are separate phonemes (Gussmann 1980, Rubach 1984, Rydzewski 2014). Treating the two segments as allophones would be in fact disadvantageous from the point of view of the theory (Rubach 1984). If [ɨ] were an allophone of [i], the occurrence of these sounds in words such as *bił* [b'iw] 'he hit' and *był* [bɨw] 'he was' would require the assumption that there are [b] and [b'] are separate phonemes in the system. With this assumption, the division among the soft and hard consonants would have to apply to virtually all consonants. Hence, in words such as *riksza* 'rickshaw' or *risotto*

[12] Translation mine.

'risotto', [r'] would be the initial phoneme. The problem is that soft [r'] is limited to a handful of words, all of which are borrowings. Further, the sequence [r'i] in these words easily restructures to [rɨ]. The understanding that [ɨ] is not a phoneme would render a restructuring *r'i* → *rɨ* impossible to account for. Contrariwise, if the system contains two separate phonemes [i] and [ɨ], the situation becomes straightforward. The phoneme [r] in words such as *grill* [gr'il] 'barbecue' is palatalized before [i]. The restructuring to [grɨl] takes place due to an independently motivated rule of Retraction.[13]

Not everybody agrees that [ɨ] is a phoneme: Czaykowska-Higgins (1988) and Gussmann (2007) claim that [ɨ] is an allophone of [i]. The arguments for such stance are that the distribution of [i] is limited to the immediate context of soft consonants and the distribution of [ɨ] – to the immediate context of hard consonants. Their contexts are mutually exclusive. Other Polish vowels, that is [a ɛ ɔ u], do not obey such restrictions (Gussmann 2007). As the vowels are in complementary distribution, [ɨ] cannot be a phoneme independent of [i].

3.1.4. Plapp (1996): [i] and [ɨ] are distinct segments

Plapp (1996) provides numerous arguments that /i/ and /ɨ/ are distinct underlying segments in Russian, drawing evidence from two kinds of interactions of processes: between Consonant Fronting and Vowel Backing and between Velar Palatalization and Surface Palatalization. In Russian, the vowel [ɨ] does not appear word-initially (apart from a few exceptions). In fact, the occurrence of [ɨ] is restricted to hard, i.e. velarized consonants. The common claim is that [ɨ] is an allophone of [i]. The feature [+back] spreads from the preceding consonant onto the vowel via Vowel Backing, as in //bit'//[14] → [bit'] 'to be'. In

[13] I discuss the rule of Retraction in Chapter 4.

[14] Following the time-honoured Slavic tradition front consonants are marked with an apostrophe while hard consonants remain unmarked.

contrast, the feature [−back] spreads from //i// to the preceding consonant via Consonant Fronting, as in //bit'// → [b'it'] 'to beat'. The rules are schematically stated in (1).

(1) Vowel Backing and Consonant Fronting in Russian

a. Vowel Backing

i → ɨ / C —

b. Consonant Fronting

C → C' / — i

Plapp presents her analysis of the two processes based on the words *gotovij* [v+ɨj] 'ready' (Adj.) and *gotovit'* [v'+i+t'] 'get ready'. Attempts at an analysis based on a single underlying vowel //i// are shown in (2). I will present only the facts that are relevant to this discussion.

(2) Schematic derivations of *gotovij* 'ready' and *gotovit'* 'to get ready'

a. The underlying stem-final fricative is soft

UR	goto//v'+ij//		goto//v'+i+t'//	
	v'+ij	WFR /-ij/	v'+i	WFR /-i/
	-		-	Vowel Backing: i → ɨ / C —
	v'+i		v'+i	Consonant Fronting: C → C' / — i
SR	*[v'ij]		[v'i]	

b. The underlying stem-final fricative is hard

UR	goto//v+ij//		goto//v+i+t'//	
	v+ij	WFR /-ij/	v+i	WFR /-i-/
	v+ɨj		v+ɨ	Vowel Backing: i → ɨ / C —
	-		-	Consonant Fronting: C → C' / — i
SR	[vɨj]		*[vɨ]	

The underlying stem-final fricative is the same in both *gotovij* and *gotovit'*. If it was underlyingly hard in *gotovij* and underlyingly soft *gotovit'*, the generalization about root consonants would be lost. When //v'// is assumed to be the stem-final consonant, there is no context for Vowel Backing to apply. Consonant Fronting, triggered by the fricative, produces the correct result for [gɔtəv'it'], but the wrong result for *[gɔtəv'ij]. On the other hand, when //vˠ// is assumed to be the stem final consonant, Vowel Backing, but not Consonant Fronting, applies. The rule generates *[gɔtəvˠɨt'] and [gɔtəvˠɨj], respectively. Either way, the analysis produces the wrong results. The absence of //ɨ// in the system makes it impossible for the correct analysis to be constructed.

Plapp (1996) supports her assumption with the analysis of the interaction between Surface Palatalization and Velar Palatalization in Russian in the words *muki* [k'i] 'agony' and *muchit'* [ʧ'+i+t'] 'to torment'.

(3) Schematic derivations of *muki* and *mučit'*: only //i//

a. Velar Palatalization ordered before Surface Palatalization

UR	muk//k+i//		mu//k+i+t'//	
	k+i	WFR /-i/	k+i	WFR /-i-/
	ʧ'+i		ʧ'+i	Velar Palatalization: k → ʧ' / — i
	-		-	Surface Palatalization: C → C' / — i
SR	*[ʧ'i]		[ʧ'i]	

b. Surface Palatalization ordered before Velar Palatalization

UR	muk//k+i//		mu//k+i+t'//	
	k+i	WFR /-i/	k+i	WFR /-i-/
	k'+i		k'+i	Surface Palatalization: C → C' / — i
	-		-	Velar Palatalization: k → ʧ' / — i
SR	[k'i]		*[k'i]	

When Velar Palatalization applies before Surface Palatalization, the derivation produces the correct result for [muk'i] but not for [muʧ'it'], as the derived output is *[muk'it']. If the order of the rules is reversed, the derivation correctly predicts [muʧ'it'], but gives the wrong result for [muk'i] that comes out as *[muʧ'i]. The conundrum cannot be resolved assuming only //i// in the underlying representation.

Plapp's argument is that when the system admits two underlying vowels, the situation becomes straightforward: in *muki* [k'i] 'agony', //-ɨ// is the UR of the plural marker. The back vowel fronts in the context of //k// via Velar Fronting. Next, Surface Palatalization applies fronting *k → k'*. In *mučit'* [ʧ'+i+t'] 'to torment', the verbalizing morpheme //-i// triggers Velar Palatalization *k → ʧ'*.

Plapp concludes that two underlying high unrounded vowels, //i// and //ɨ//, are needed in order to produce a derivational analysis of Russian palatalization.

3.1.5. Rydzewski (2016, 2017): dismissal of a single-phoneme approach

The most recent contribution to the debate about the phonological status of [ɨ] is Rydzewski's (2014, 2016, 2017) response to Pagett's (2003, 2010) single-phoneme approach. The distribution of [i] and [ɨ] in Russian is complementary. As noted earlier, [i] appears after palatalized segments, whereas the distribution of [ɨ] is restricted to the context of non-palatalized segments. The observation, supported by an acoustic analysis of the data gathered from Russian speakers, led Padgett (2003) to assume that the vowel [ɨ] is a reflection of a velarization of the preceding consonant and not a separate phoneme. According to Padgett, the cluster [Cɨ] should be interpreted as [C$^{\gamma}$i], where [ɨ] is a segment absent from the vowel system of Russian. Rydzewski (2016, 2017) translated Padgett's arguments into the system of Polish and analysed phonological consequences of the single-phoneme approach, i.e. the presence of only [i] in the phonetic inventory. Rydzewski shows that if the phonemic status of [ɨ] is not awarded for Polish, palatalization processes lose their generalizations and their analysis becomes erratic.

Rydzewski's argumentation is shown below on the example of Surface Palatalization and Velar Fronting in Polish. The analysis is first presented assuming that //ɨ// is the underlying segment and, then, assuming that there is no //ɨ// in the underlying representation of Polish.

Polish uses the vowels [i] and [ɨ] in the formation of masculine plural nouns. The distribution of the allomorphs resides in the semantic properties in of the root: //i// is added to virile while //ɨ// to non-virile nouns. As the data in (4) illustrate, the distribution of the suffixes is further obscured by the processes they trigger.

(4) Virile and non-virile plural formation in Polish

	masc.nom.sg.	*masc.nom.pl*	*gloss*
a.	chłop [p]	chłop+i [p'i]	'peasant'
	Kaszub [p]	Kaszub+i [b'i]	'Kashub'
b.	lep [p]	lep+y [pɨ]	'glue'
	grab [p]	grab+y [bɨ]	'hornbeam'
c.	strach [x]	strach+y [xɨ]	'fear'
	hak [k]	hak+i [k'i]	'hook'
	brzeg [k]	brzeg+i [g'i]	'shore'

The virile nouns in (4a) take [i] as their plural ending. What is more, the vowel triggers Surface Palatalization, namely, softening of the preceding consonant. The rule, applying across the board in Polish, is given schematically in (5).

(5) Surface Palatalization in Polish

C → C' / — i

The non-virile nouns in (4b) take [ɨ] as their plural ending. The suffix does not cause any changes. Set (4c) obscures the hitherto analysis. The velar fricative [x] takes [ɨ] as its plural ending, while the velar stops [k g] take [i] as their plural endings. One explanation of this behaviour of suffixes would be to assume that there are two allomorphs: //i// is added to velar stops and //ɨ// is added to the velar fricative. However, if this were true, the high front vowel would trigger Velar Palatalization and generate forms such as **haczy* [ɣ+ɨ] and **brzedży* [ʤɨ], unattested in the system. If the nom.pl. suffix is //ɨ//, the opacity between the underlying and the surface form can be explained by the process called Velar Fronting, providing for the shift from [+back] to [−back] of the high vowel preceded by /k g/. Schematically:

(6) Velar Fronting in Polish

ɨ → i / k g —

The derivation will now run as in (7).

(7) Schematic derivation of *haki* ‘hooks’

UR	ha//k+ɨ//	
	k+ɨ	WFR nom.pl. /-i/
	k+i	Velar Fronting: ɨ → i / k g —
	k’+ɨ	Surface Palatalization: C → C’ / — i
SR	[k’i]	

The nom.pl. suffix //ɨ// fronts to [i] after a velar stop. The rule must be ordered after Velar Palatalization, otherwise there would be no stopping of *k* → *ʧ*. Surface Palatalization applies at later stages of the derivation, giving rise to the attested from [k’i].

To conclude, two underlying segments, //i// and //ɨ//, facilitate capturing the generalisations and describing interactions between the processes affecting velars.

In a single-phoneme approach, the vowel [ɨ] does not exist (Padgett 2001, 2003). The suffix containing palatalizing //i// must be marked as such in order to be distinguished from the suffix containing non-palatalizing //i//. The plural formation of nouns will now look as follows.

(8) Virile and non-virile plural formation in Polish (no [ɨ] in the inventory)

	masc.nom.sg.	*masc.nom.pl*	*gloss*
a.	chłop [p’]	chłop+i [p’i]	‘peasant’
	Kaszub [p’]	Kaszub+i [b’i]	‘Kashub’
b.	lep [p]	lep+y [pi]	‘glue’
	grab [p]	grab+y [bi]	‘hornbeam’
c.	strach [x]	strach [xi]	‘fear’
	hak [k’]	hak+i [k’i]	‘hook’
	brzeg [k’]	brzeg+i [g’i]	‘shore’

The data were redesigned in order to accommodate Padgett’s assumption that [ɨ] is merely an illusion following from the velarization of the preceding consonant. The data pose three problems. First, the examples in (8c) have all the same suffix, which causes allophonic palatalization of [k g] but not of [x]. Second, sets (8b) and (8c) are non-virile nouns. In some instances the suffix causes palatalization, i.e. after [k g], and in others it does not, as in the words *lepy* and *graby*. In all of the cases, the morpheme is the same vowel [i]. Third, the suffix in set (8a) should be different, as this [i] triggers palatalization, yet on the surface, it is the same vowel [i] as in sets (8b) and (8c). The question arises how to distinguish, for example, the [i] in *Kaszubi* from the [i] in *graby*. In the scenario that is ultimately rejected, Rydzewski (2017) proposes to mark the virile and the non-virile suffixes as //$i_{[pal]}$// and //i//. The first allomorph will cause Surface Palatalization, whereas the second will not. The rule of Surface Palatalization is presented schematically in (9).

(9) Surface Palatalization in Polish (no [ɨ] in the inventory)

$C \rightarrow C' / \_\_ i_{[pal]}$

However, now the UR of *strachy* is //strax+ $i_{[pal]}$// ‘fears’ and of *haki* is //xak+i// ‘hooks’. Since the surface representations are [straxi] and [xak’i], the system has two non-virile suffixes. Such assumption shows that the palatalization in velar stem nouns is an accident and can be resolved by assigning a diacritic. The generalization captured by Velar Fronting has been lost.

To make the issue more complicated, Polish allows for adding non-virile suffixes to virile nouns. The plural form of nouns construed in such way usually has a derogative meaning. This is shown in (10).

(10) Non-virile plural suffixes added to virile nouns in Polish (no [ɨ] in the inventory)

	masc.nom.sg.	*masc.nom.pl*	*gloss*
a.	chłop [p]	chłop+y [pi]	‘peasant’ (pej.)
	tramp [p]	tramp+y [pi]	‘tramp’
	Szwab [p]	Szwab+y [bi]	‘German’ (pej.)
	snob [p]	snob+y [bi]	‘snob’ (pej.)
	cham [m]	cham+y [mi]	‘lout’
b.	Polak [k’]	Polak+i [k’i]	‘Pole’ (pej.)
	bied+ak [k’]	bied+ak+i [k’i]	‘poor man’ (pej.)
	warszawi+ak [k’]	warszawi+ak’+i [ki]	‘Varsovian’ (pej.)

The plural suffix in (10a) does not cause palatalization, just as is the case with non-virile nouns. The data in (10b), however, exhibit Surface Palatalization. To distinguish between these two suffixes, the palatalizing suffix must be marked with a [pal] diacritic. The system then would contain //$i_{[pal]}$// and //i//. But, these two suffixes already exist in the system and apply to virile nouns: //$i_{[pal]}$// applies to velar-stem nouns and //i// to other nouns. The virile palatalizing and non-palatalizing suffixes must be distinguished from the non-virile

palatalizing and non-palatalizing suffixes in a different way. Let us mark the palatalizing suffixes as: //$i_{[\text{virile pal}]}$ // and //$i_{[\text{pej. pal}]}$ // in contrast to the non-palatalizing suffixes that are marked as //$i_{[\text{virile}]}$//, //$i_{[\text{non-virile}]}$//, and //$i_{[\text{pej.}]}$ //. This way, the system has five different suffixes marking plural nouns. In addition to that, the system must have different palatalizing rules, given schematically in (11).

(11) Surface Palatalization in Polish (no [ɨ] in the inventory)

a. Virile Surface Palatalization: C → C' / — $i_{[\text{virile pal}]}$

b. Pejorative Surface Palatalization: C → C' / — $i_{[\text{pej. pal}]}$

Thus, the system has five different plural noun suffixes and two palatalization rules, if we take into account Surface Palatalization. However, when we add Coronal and Velar Palatalization to the puzzle, the system becomes extremely complicated. Diacritics proliferate and are added to different kinds of plural nominators and rules capturing different morphological and semantic contexts. Rydzewski rejects the approach not recognizing //ɨ// as an underlying segment of Polish and concludes that both //i// and //ɨ// are underlying segments in Polish.

3.2. Status of [ɨ] in Kashubian

For Kashubian, the widely accepted view is that the language does not have [ɨ] as a separate phoneme. The additional parlance is that instances of [+back] vowel appearing in pronunciation are merely a result of reflecting the backness of the preceding consonant (Dejna 1973, Breza and Treder 1981). When the consonant is soft, the vowel is perceived as [i], whereas after a hard consonant, the listener will hear the high front vowel with more of [ɨ] qualities. This is exemplified by the pair of words *bic* [b'i] 'to hit' and *bëc* [bi] 'to be' (Dejna 1973).

The vowel [ɨ] was also assumed to appear in certain context or in certain, restricted areas (AJK, Topolińska 1974). A point to note is that it has always been considered an allophone or a free variant of [i], and never as a separate phoneme.

In Kashubian, similarly to Polish, the distribution of [ɨ] is restricted to the immediate context of hard consonants, as in the words *dzys* [dzɨs] 'today' and *syn* [sɨn] 'son'. The vowel [i] appears elsewhere. The complementary distribution of the two vowels can be explained coherently in another way than by assuming that [i] retracts when preceded by [+back] consonants and that the [i] which developed diachronically from [ɨ] does not trigger surface palatalization of the preceding consonant (Makurat 2016). The lack of [ɨ] at the beginning of words can be treated as an accidental gap. Kashubian speakers are able to pronounce the high back vowel [ɨ] in isolation. What is more, the speakers in my fieldwork pronounced the word *uwò* 'here' as [ɨwe], with the high back vowel in the initial position. Thus, the vowel fulfils Ščerba's (1913) criteria for recognizing segments as separate phonemes.

If we assume that Kashubian has a single underlying phoneme //i//, the analysis of palatalization processes runs into serious difficulties and becomes highly complex. The following chapters support the view that [i] and [ɨ] constitute separate phonemes. It can be expected that arguments parallel to those presented in Plapp (1996), Rubach (1984), and Rydzewski (2014) will follow in Kashubian.

Plapp's and Rydzewski's arguments for admitting two underlying high unrounded vowels in the system cannot be fully transferred into Kashubian because Kashubian does not exhibit Surface Palatalization in a reliable way[15]. However, Plapp's (1996) argument regarding the rule ordering paradox can also be applied to Kashubian. These issues are discussed in detail in Chapter 4.

To conclude, if [i] and [ɨ] were allophones of //i// in Kashubian, the distribution of the

[15] For many speakers Surface Palatalization is optional or does not exist.

vowels would require that virtually all consonants in the underlying representation are divided along the soft–hard axis. The words *riksza* ‘rickshaw’ or *risotto* ‘risotto’ are borrowings not only in Polish but also in Kashubian. If Kashubian had only //i// as the underlying high unrounded vowel, //r’// would have to be the initial phoneme in words such as *riksza*. The sequence [ri] in these words, when adapted to Kashubian, easily restructures to [r$^{\gamma}$i]. The restructuring *ri* → *r*$^{\gamma}$*i* is impossible to account for if //r’// is assumed as the underlying segment in *riksza* and so forth. In contrast, with two separate phonemes //i// and //ɨ//, the situation becomes straightforward. The phoneme //r’// is adapted to the system as [r]. Next, [i] in words such as *grill* [gril] ‘barbecue’ becomes retracted after [r] via an independently motivated rule of Retraction.

To conclude, this dissertation argues that //ɨ// is a segment present in the underlying inventory of Kashubian.

Chapter 4

Palatalization processes in Kashubian: Lexical Phonology

This chapter looks at palatalization processes in Kashubian from the perspective of Lexical Phonology. Since the basic generalizations are rather complex, the coverage of the facts is restricted to the class of coronals, where coronals are either inputs (Coronal Palatalization) or outputs (Velar Palatalization) of a process. Only [t d], [s z], and [k g] are investigated in detail. The coronals //t d// are argued to undergo palatalization and change into [ʦ ʣ] at later stages of the derivation. Also, //s z// are palatalized to /s' z'/ and later changed into [s z] via Hardening. Coronal Palatalization and the accompanying processes constitute a Duke of York gambit. Velar [k g] undergo two processes: //k g x// change into [ʧ' ʤ' ʃ'] via Velar Palatalization and //k g// change into [ʧ' ʤ'] via Velar Softening. Rules are stated schematically, not in terms of features. The gathered data call for utilising a modified version of the theory, allowing for restricting the application of rules and the addition of morphemes to designated derivational levels.

4.1. Basic generalizations

Kashubian [t d] alternate productively with [ʦ ʣ] in, for example, the nom. – loc. declension. The data from my fieldwork in (1) exemplify this phenomenon.

(1) Declination of nouns with stem-final coronals

nom.sg.	*nom.pl.*	*loc.sg.*	*gloss*
bòt [t]	bòt+ë [tə]	bòc+e [ʦɛ]	‘shoe’
kòt [t]	kòt+ë [tə]	kòc+e [ʦɛ]	‘cat’
brat [t]	brat+ ë [tə]	brac+e [ʦɛ]	‘brother’
rëmòt [t]	rëmòt+ë [tə]	rëmòc+e [ʦɛ]	‘piece of junk’
gwiôzd+a [da]	gwiôzd+ë [də]	gwiôzdz+e [ʣɛ]	‘star’
arbat+a [ta]	arbat+ë [tə]	arbac+e [ʦɛ]	‘tea’
żakét [t]	żakét+ë [tə]	żakéc+e [ʦɛ]	‘jacket’
sąsôd [t]	sąsôd+ë [də]	sąsôdz+e [ʣɛ]	‘neighbour’
Weńt+a [ta]	Weńt+ë [tə]	Weńc+e [ʦɛ]	Kashubian surname

As shown in (1), there are two kinds of alternations appearing in the data: [t] – [ʦ], and [d] – [ʣ]. That is, hard, [+back], stops alternate with hard, [+back], affricates. A question arises whether it is [t d] or [ʦ ʣ] that are in the UR. The data in (2) answer this question.

(2) Declination of *kòt* ‘cat’

Kashubian	*gloss*
kòt+a [ta]	‘cat’ (gen.sg.)
kòt+ë [tə]	‘cat’ (nom.pl.)
kòt+u [tu]	‘cat’ (dat.sg.)
kòt+ka [tk]	‘cat’ (fem.)

Here, [t] appears in the context of non-front vowels, as in *kòta* [t+a], word-finally, as in *kòt* [t], and before consonants, as in *kòtka* [t+k]. So, [t d] appear in many disparate contexts and hence constitute the ‘elsewhere’ case. I therefore conclude that the underlying segments

are //t d// and that they undergo a change in the context of the mid-front vowel [ɛ]. If assumed to be a one-stage process, the rule should read as in (3).

(3) Coronal Palatalization (preliminary)

t d → ʦ ʤ / — ɛ

Since, as a result of the applied rule, coronal stops change into hard affricates, the process resembles affrication rather than palatalization. However, positing a rule such as (3) for Kashubian is *ad hoc*. Slavic languages are well known for their palatalization processes, some of which have similar, if not the same, inputs and contexts as the rule described in (3). Let us look at this issue from a broader perspective.

In Standard Polish, a language closely related to Kashubian, coronal //s z t d n// change into prepalatal [ɕ ʑ ʨ ʥ ɲ] before front vowels. This process, known as Coronal Palatalization, was broadly discussed by for example Rubach (1984: 31, 59–75; 2003b). In (4), I look at examples affecting coronal //t d// in Polish.

(4) Declension of nouns with stem-final coronals in Polish

nom.sg.	*loc.sg.*	*gloss*
but [t]	buci+e [tɕɛ]	‘shoe’
kot [t]	koci+e [tɕɛ]	‘cat’
brat [t]	braci+e [tɕɛ]	‘brother’
gniazd+o [dɔ]	gnieździ+e [dʑɛ]	‘nest’
gwiazd+a [da]	gwieździ+e [tɕɛ]	‘star’
herbat+a [ta]	herbaci+e [tɕɛ]	‘tea’
żakiet [t]	żakieci+e [tɕɛ]	‘jacket’
sąsiad [t]	sąsiedzi+e [dʑɛ]	‘neighbour’
Went+a [t]	Wenci+e [tɕɛ]	Kashubian surname

Hard [t d] alternate with soft [tɕ dʑ]. In (4), soft coronals occur only before the front vowel [ɛ], whereas [t d] are found elsewhere, e.g. at the end of the word, as in *kot* [t], before a back vowel, as in *kota* [t+a], and before a consonant, as in *kotka* [t+k] ‘cat’ (fem.). Thus, it is clear that it is soft coronals that are derived from hard coronals, and not the reverse. The alternations exemplified in (1), as in *kòt – kòce* ‘cat’ (nom.sg – loc.sg.), are parallel to the inputs and outputs of Coronal Palatalization in Standard Polish.

The occurrence of palatalization effects before [ɛ] is not limited to obstruents, as the following data show. Kashubian coronal nasal [n] alternates productively with prepalatal [ɲ], e.g. in the loc.sg. formation, as exemplified in (5).

(5)	*nom.sg.*	*loc.sg.*	*gloss*
	zwó<u>n</u> [n]	zwó<u>ni+e</u> [ɲɛ]	‘bell’
	ka<u>n+a</u> [na]	ka<u>ni+e</u> [ɲɛ]	‘can’ (container)
	bara<u>n</u> [n]	bara<u>ni+e</u> [ɲɛ]	‘ram’
	zbó<u>n</u> [n]	zbó<u>ni+e</u> [ɲɛ]	‘pitcher’
	glë<u>n+a</u> [na]	glë<u>ni+e</u> [ɲɛ]	‘clay’

Here, the process of Coronal Palatalization is transparent: n → ɲ / — ɛ.

The segments /t d n/ belong to the class of coronals. It would be a stipulation to break up this natural class, given the fact that they all undergo the same change in the same context of a front vowel. To conclude, the presented palatalization process affects underlying //t d n//.

4.2. Labial and Velar Palatalization in Kashubian

Brzostek (2007: 163–164) provides numerous arguments for considering the process presented in (1) to be palatalization. Palatalization is an active process in Kashubian, which affects, among others, labials and velars. There is robust evidence for the palatalization of labials, but it is masked by the fact that the surface effect of Labial Palatalization is the sequence of [j] preceded by a hard labial, as in *bab+a* [ba] – *babi+e* [bjɛ] ‘old woman’ (nom.sg. – loc.sg.).

Brzostek argues that the sequence [pj] in words such as *piôsk* ‘sand’ (nom.sg.) is derived from the underlying soft //p’//.

(6) Schematic derivation of *piôsk* ‘sand’ (nom.sg.)

UR	//p’əsk//	
	pj	Decomposition: p’ → pj / — V
SR	[pj]	

The fact that [p] is hard in the surface representation is a natural consequence of the assumption that the underlying soft labial is subject to a decomposition process. Under decomposition, the underlying characteristics of the soft segment are represented on two segments on the surface. Here, labiality resides on [p] and palatalization resides on [j]. Consequently, [p] is hard on the surface.

Similar is the case with the palatalization of labials effected by a rule, as in *baba* [b+a] – *babie* [bj+ɛ]. The process is presented schematically in (7).

(7) Schematic derivation of *babie* ‘old woman’ (loc.sg.)

UR	ba//b+ɛ//	
	b+ɛ	WFR loc.sg. /-ɛ/
	b’+ɛ	Labial Palatalization: p b f v → p’ b’ f’ v’ / — ɛ
	bj+ɛ	Decomposition: p’ b’ f’ v’ → pj bj fj vj / — ɛ
SR	[bjɛ]	

Although Labial Palatalization is somewhat obscured by the accompanying decomposition of labials, the soft /b’/ resulting from palatalization is present, albeit deeper in the derivation.[16]

Palatalization in the context of /ɛ/ is transparent in the case of Velar Palatalization in Kashubian, for example, in verb formation [N – V]:[17] *wrzesk* [k] ‘shout’ – *wrzeszczec* [ʧ’+ɛ]

[16] Kashubian has two sets of labials in the UR: hard and palatalized. Soft labials are prohibited on the surface in most contexts. See Brzostek (2007).

[17] Actually, the verb formation here is a much more complicated issue, as it involves the process of lowering of

'to shout'. The examples[18] below illustrate verb formation.

(8) Verb formation of roots with stem-final velars

Kash.	*gloss*	*verb*	*gloss*
wôg+a [ga]	'weight'	wôż+ë+c [ʒ'ɛ]	'to weight'
wrzesk [k]	'shout'	wrzeszcz+e+c [ʧ'ɛ]	'to shout'
drog+ô[19] [gɨ]	'expensive' (fem.)	pò+dro+ż+e+c [ʒ'ɛ]	'to become expensive'
strach [x]	'fear'	strasz+ë+c [ʃ'ɛ]	'to haunt'

The data show that the rule of Velar Palatalization changes the velars //k g x// into soft [ʧ' ʒ' ʃ'] in the context of the verbalizing marker /-ɛ/. The rule is formulated schematically as follows.

(9) Velar Palatalization (1st approximation)

k g x → ʧ' ʒ' ʃ' / — ɛ

The question is why the [−continuant] //g// changes into [ʒ'], which is [+continuant], and further, whether this change should be subsumed under Velar Palatalization.

A parallel problem appearing in Polish was described in detail by Rubach (1984, 2003b). The issue is illustrated in (10).

---

the underlying verbalizing marker //-i-// to [ɛ] in the context of soft stridents. I will discuss this issue in more detail in the following chapter. For compactness, I will assume at this stage of the discussion that /ɛ/ is the verbalizing marker in Kashubian.

[18] The examples come from (Brzostek 2007) and from my own fieldwork.

[19] The fem. adj. endings are pronounced differently, depending on the dialect of Kashubian. The pronunciation may vary from [i] to [ɐ], or even [a] where the influence of Polish is strong (Breza and Treder 1981: 41). The speakers in my fieldwork pronounced the fem. nom.sg. endings as [i] or [ɨ], depending on the preceding consonant. I will transcribe the endings as they were pronounced by my speakers.

(10) Operation of Velar Palatalization in Polish

Polish	*gloss*	*verb*	*gloss*
mózg [sk]	‘brain’	móżdż+ek [ʒdʒɛ]	‘brain’ (dimin.)
drobiazg [sk]	‘detail’	drobiażdż+ek [ʒdʒɛ]	‘detail’ (dimin.)
drąg [ɔŋk]	‘pole’	drąż+ek [ɔnʒɛ]	‘pole’ (dimin.)
wilg+ot+ny [lgɔ]	‘moist’	z+wilż+y+ć [lʒɨ]	‘to moisten’
drog+a [ɔga]	‘expensive (fem.)’	po+dro+ż+e+ć [ɔʒɛ]	‘to become expensive’

In some instances, the affricate [dʒ] appears instead of [ʒ] on the surface when Velar Palatalization has applied. This happens in words such as *mózg* [sk] ‘brain’ – *móżdżek* [ʒdʒ] (dimin.) or *drobiazg* [sk] ‘detail’ – *drobiażdżek* [ʒdʒ] (dimin.). The affricate surfaces only when preceded by an obstruent. In other instances, the fricative [ʒ] appears on the surface, namely, when preceded by a vowel (*droga* [ɔg] ‘expensive’ – *podrożeć* [ɔʒ] ‘to become expensive’), a nasal (*drąg* [ɔŋk] – *drążek* [ɔnʒ] ‘pole’), or a liquid (*wilgotny* ‘moist’ [lg] – *zwilż+y+ć* [lʒ] ‘to moisten’). However, it is the affricate that is the product of Velar Palatalization. Spirantization is an independent step.

(11) Spirantization in Polish

dʒ → ʒ / [+sonor] —

The context of the rule is identical in both Polish and Kashubian. However, in Kashubian the soft postalveolar is both the input and the output: since the output of Kashubian Velar Palatalization is the soft [dʒ’], Spirantization will by *force majeure* produce soft [ʒ’].

To sum up, Kashubian has a rule of Velar Palatalization changing underlying velar //k g x// into soft coronal [ʧ’ dʒ’ ʃ’]. The process is accompanied by Spirantization. Both rules are stated schematically in (12).

(12) Velar Palatalization and Spirantization in Kashubian (2nd approximation)

a. Velar Palatalization

k g x → ʧʼ ʤʼ ʃʼ / — ɛ

b. Spirantization

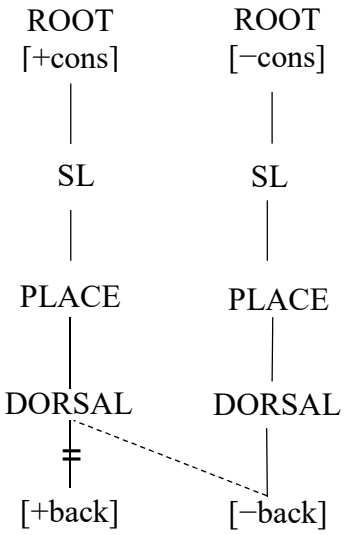
ʤʼ → ʒʼ / [+sonor] —

Since the same context as in (1), that is /-ɛ/, triggers the palatalization of coronal //n//, in words such as *zwòn – zwònie* 'bell' (nom.sg. – loc.sg.), as shown in (5), as well as labials (*baba – babie* 'woman'(nom.sg. – loc.sg.)) and velars (*wôga – wôżec* 'weight' (N – V)), as shown in (7) and (8), the parallel process affecting //t d// may be subsumed under the same rule. In view of these facts, the examples in (1) can be assumed to document a process of Coronal Palatalization. The details ensue in the next section.

4.3. Palatalization from the Perspective of Feature Geometry

Although the rule in (3), according to which t d → ʦ ʣ / — ɛ, makes the correct prediction, it is a stipulation to state that //t d// change into hard segments as a result of palatalization. According to the Articulatory Model of Feature Geometry (Sagey 1986, Halle 1992), palatalization is a process spreading the feature [−back] from the vowel to the consonant. Since Kashubian has hard, that is [+back], consonants, palatalization is a 'spreading *cum* delinking' operation, as visualised in (13).

(13) Spreading of [−back] in the Sagey−Halle model of Feature Geometry[20]:



The outputs of the palatalization process exemplified in (1), in words such as *bòt* [t] – *bòce* [ʦ+ɛ] 'shoe' (nom.sg. – loc. sg.), are hard, that is [+back] rather than [−back] consonants. Since hard segments cannot be the immediate result of a palatalizing process, there must be more than one process involved in the change. In addition, the affrication change (stops → affricates) calls for a separate operation. This is so because the model does not permit spreading stridency, since the vowel is not specified as [+strid]. Thus, let us assume the actual change is //t d// → /t' d'/, yielding complex segments, i.e. palatalized coronals, specified with the Coronal node for the primary place of articulation and with the Dorsal node for the secondary place of articulation, namely, palatalization. In order to derive the attested surface forms, the process must be accompanied by spell-out rules: Stridency Spell-out and Hardening. Stridency Spell-out is the rule changing the intermediate /t' d'/ to /ʦ' ʣ'/ (Rubach 2003b, 2006). It adds [+strid] to the outputs of Coronal Palatalization.

[20] The DORSAL node on the consonant denotes that the consonant is hard.

(14) Coronal Palatalization and Affrication (1st approximation)

a. Coronal Palatalization

t d → t’ d’ / — ɛ

b. Stridency Spell-out

t’ d’ → ʦ’ ʣ’

Stridency Spell-out in Kashubian is not context dependent, since it results from the system’s prohibition of soft coronal stops [t’ d’] in the surface representation. As is typical for spell-out rules, Stridency Spell-out is an arbitrary operation that does not follow from Feature Geometry.

4.4. Duke of York derivations

It should be noted that Kashubian does not have soft /ʦ’ ʣ’/ in its surface representation (Jocz 2014: 34–35). This ban put on the phonetic inventory may be expressed by yet another process accompanying palatalization. Namely, on the next stage of derivation, soft /ʦ’ ʣ’/ undergo a process of hardening to [ʦ ʣ].

(15) Hardening (1st approximation)

ʦ’ ʣ’ → ʦ ʣ

The operation of the rules discussed so far is summarised by the following sample derivation of *bòce* ‘shoe’ (loc.sg.).

(16) Schematic derivation of *bòce* ‘shoe’ (loc.sg.)

UR	//t+ɛ//	
	/t’ɛ/	Coronal Palatalization (14a)
	/ts’ɛ/	Stridency Spell-out (14b)
	/tsɛ/	Hardening (15)
SR	[tsɛ]	

The chain of derivations: *t d* → *t’ d’* → *ʦ’ ʣ’* → *ʦ ʣ* constitutes a Duke of York gambit, as I clarify below.

To explain the mechanism of the Duke of York gambit, first described in Pullum (1976), let us look at the following example from Polish (Rubach 2003a).

(17) Schematic derivation of *trud zarobkowania* ‘the hardship of earning money’

UR	//d # z//	
	t # z	Final Devoicing: d → t / — #
	d # z	Voice Assimilation: t → d / — z
SR	[d # z]	

Example (17) demonstrates the interaction of Voice Assimilation and Final Devoicing in a phrase. The final voiced obstruent //d// in the word *trud* ‘hardship’ undergoes Final Devoicing before a word boundary, but when followed by a voiced obstruent in the following word *zarobkowania* ‘earning money’, it assimilates to /z/ in terms of voicing. The result is the sequence of voice changes: *d* → *t* → *d*. The change seems to be redundant, adding unnecessary complexity. Yet, in the rule framework, there is hardly an alternative. To avoid Duke-of-York steps, Final Devoicing would have to carry a restriction that it does not apply if the next word begins with a voiced obstruent. Such restriction is impossible to build into the

rule.[21]

Returning to Kashubian, the rules of Coronal Palatalization, Stridency Spell-out, and Hardening are motivated independently, and are well-known across Slavic languages, so what I am proposing here is not an *ad hoc* solution. The process of hardening accompanies, for example, Polish 1st Velar Palatalization, where intermediate soft postalveolar affricates [ʧʲ ʤʲ ʒʲ] harden to [ʧ ʤ ʒ] on the surface, as in *krzyk* [k] – *krzyczeć* [ʧ+ɛ] 'scream' (N – V). Schematically:

(18) Schematic derivation of *krzyczeć* 'to scream' in Polish

UR	//k+ɛ//	
	ʧʲɛ	1st Velar Palatalization: k g x → ʧʲ ʤʲ ʃʲ / — ɛ
	ʧɛ	Hardening: ʧʲ ʤʲ ʃʲ→ ʧ ʤ ʃ
SR	[ʧɛ]	

As a result of 1st Velar Palatalization, Polish hard //k g x// undergo softening to /ʧʲ ʤʲ ʃʲ/, in order to become [ʧ ʤ ʃ] via Hardening. This sequence of changes, hard → soft → hard, constitutes a Duke of York gambit.

4.5. Implicational generalization of the context

Although only [ɛ] appears in the data in (1), in words such as *kòce* [ʦ+ɛ] 'cat' (loc.sg.) or *bòce* [ʦ+ɛ] 'shoe' (loc.sg.), it is typologically impossible for a mid front vowel [ɛ] to be the context for palatalization, to the exclusion of [i] (Chen 1973). According to the implicational generalization proposed by Chen (1973)[22], triggers of palatalization spread along the

[21] In contrast, Optimality Theory has no trouble accommodating this restriction: informally, the constraint called Voice Assimilation is ranked higher than the constraint called Final Devoicing. The result is that in cases of conflict, it is the former that prevails.

[22] See also Rubach (2003b).

dimension of height from /i/ to /æ/, depending on the language. Every language has a cut-off point on the scale of palatalizing vowels. Palatalization before /æ/ entails palatalization before /ɛ/, /e/, and /i/. Palatalization before /ɛ/ entails palatalization before /e/ and /i/, and palatalization before /e/ entails palatalization before /i/. Since the mid vowel /ɛ/ is the context of palatalization in Kashubian, /e i/ must also be the triggers of the process. Thus, it is /ɛ e i/ that constitute the context for Coronal Palatalization in Kashubian. Similar is the case with Velar Palatalization. It is impossible for /ɛ/ to be the context for the change to the exclusion of /i e/, as in e.g. *błësk – błëszczëc* 'shine' (N – V). Given the implicational generalizations, the rules should be stated as in (19).

(19) Coronal and Velar Palatalization (2nd approximation)

a. Coronal Palatalization

t d → t' d' / — i e ɛ

b. Velar Palatalization

k g x → ʧ' ʤ' ʒ' / — i e ɛ

Note that tense //e//, in the investigated dialect of Kashubian realized as [i], is also proposed as a context for the rule. Although no examples of palatalization in the context of /e/ have been presented thus far, it is typologically impossible for /i/ and lax /ɛ/ to cause the change, and, at the same time, for tense /e/ to be excluded.

4.6. Palatalization of //s z//

Coronal Palatalization in Kashubian has been shown to be a process parallel to that of Coronal Palatalization in other Slavic languages. Section 4.1 has demonstrated that the palatalization of //t d// in Kashubian is a process parallel to the palatalization of //t d// in Polish. However,

Polish Coronal Palatalization affects not only //t d// but also the continuants //s z//, giving [ɕ ʑ] in the output, as in *las* [s] – *lesie* [ɕ+ɛ] (nom.sg. – loc.sg.) ‘forest’, or *zaraza* [z+a] – *zarazie* [ʑ+ɛ] (nom.sg. – loc.sg.) ‘plague’.

A question can be asked whether Kashubian //s z// also undergo a similar process. The data in (20) come from my fieldwork.

(20) Declension of nouns with stem-final [s z]

nom.sg.	*nom.pl.*	*loc.sg.*	*gloss*
la<u>s</u> [s]	la<u>s+ë</u> [sə]	le<u>s+e</u> [sɛ]	‘forest’
lë<u>s</u> [s]	lë<u>s+ë</u> [sə]	lë<u>s+e</u> [sɛ]	‘fox’
wãp<u>s</u> [s]	wãp<u>s+ë</u> [sə]	wãp<u>s+e</u> [sɛ]	‘long, loose jacket’
gu<u>z</u> [s]	gu<u>z+ë</u> [zə]	gu<u>z+e</u> [zɛ]	‘button’
kò<u>z+a</u> [za]	kò<u>z+ë</u> [zə]	kò<u>z+e</u> [zɛ]	‘goat’
bli<u>z+a</u> [za]	bli<u>z+ë</u> [zə]	bli<u>z+e</u> [zɛ]	‘lighthouse’

The examples in (1), such as *kòt* – *kòtë* ‘cat’ (nom.sg. – nom.pl.), show that the stems of masculine nouns ending in //t d// take /-ə/ as their plural marker. The data in (20) present that also stems of masculine nouns ending with //s z// take /-ə/ as their plural marker. Looking at a broader set of data, an observation can be made that Kashubian has in fact two paradigms for different kinds of stems. For example, masculine nouns may take *ë* or *e* as their plural endings.

(21) Plural formation of nouns

	nom.sg.	*nom.pl.*	*gloss*
a.	kòt̲ [t]	kòt̲+ë [tə]	‘cat’
	sąsôd̲ [t]	sąsôd̲+ë [də]	‘neighbour’
	las̲ [s]	las̲+ë [sə]	‘forest’
	guz̲ [s]	guz̲+ë [zə]	‘button’
	zwón̲ [n]	zwón̲+ë [nə]	‘bell’
b.	tidzéń̲ [ɲ]	tidzéni̲+e [ɲɛ]	‘week’
	kòsz̲ [ʃ’]	kòsz̲+e [ʃ’ɛ]	‘basket’
	krziż̲ [ʃ’]	krziż̲+e [ʒ’ɛ]	‘crucifix’

The data show that there is a correlation between the type of stem (hard – soft) and the type of ending (ə – ɛ). The distinction between hard and soft stems lies in the stem-final consonant. The final segments in (21a) are [+back], whereas those in (21b) are [−back]. The stem-final segments must be [−back] in the underlying representation, since they appear as [−back] also in the context of non-front vowels, i.e. in the context that does not warrant palatalization, as shown in (22).

(22) Declination of soft-stem nouns

nom.sg.	*gen.sg.*	*gloss*
tidzéń̲ [ɲ]	tidzéni̲+a [ɲa]	‘week’
kòsz̲ [ʃ’]	kòsz̲+a [ʃ’a]	‘basket’
krziż̲ [ʃ’]	krziż̲+a [ʒ’a]	‘crucifix’

An important fact to be noted here is that the nom.pl. markers /-ə/ and /-ɛ/ are not allophonic versions of the same phoneme. They cannot be derived from one common underlying

representation and thus constitute underlying allomorphy. If one of the marker forms were derivable from the other, the applicable rules would have produced the wrong results. For instance, if the [+back] marker /-ə/ were to be derived from underlying //-ɛ//, the whole set of instr.sg. cases, where hard stems are followed by /-ɛm/, as in *bratem* [t+ɛm] would have been impossible to account for. Thus, the conclusion is that //-ə// and //-ɛ// are separate URs.

Some cases of opaque derivations involving palatalization processes may be resolved with the help of morphology and the behaviour of hard and soft stems in the language. Let us briefly look at the case of Velar Palatalization in Polish, which process is obscured by the fact that all postalveolars are [+back] on the surface. The examples in (23) show the inflectional paradigms for hard and soft stems (Rubach 2003a). Hard stems take /-ɨ/ as the nom.pl. marker whereas soft stems take /-ɛ/.

(23) Plural formation of hard- and soft-stem nouns

	nom.sg.	*nom.pl.*	*gloss*
a.	but [t]	but+y [tɨ]	'shoe'
	nos [s]	nos+y [sɨ]	'nose'
	dzwon [n]	dzwon+y [nɨ]	'bell'
b.	śledź [tɕ]	śledzi+e [dʑɛ]	'herring'
	łoś [ɕ]	łosi+e [ɕɛ]	'moose'
	koń [ɲ]	koni+e [ɲɛ]	'horse'

The key fact to be noted is that postalveolar [ʧ ʤ ʃ ʒ], although [+back] on the surface, align themselves with the class of soft stems, as shown in (24).

(24) Plural formation of soft-stem nouns

	nom.sg.	*nom.pl.*	*gloss*
a.	łoś [ɕ]	łosi+e [ɕɛ]	‘moose’
	śledź [tɕ]	śledzi+e [dʑɛ]	‘herring’
	kosz [ʃ]	kosz+e [ʃɛ]	‘basket’
b.	bicz [ʧ]	bicz+e [ʧɛ]	‘whip’
	garaż [ʃ]	garaż+e [ʒɛ]	‘garage’
	brydż [ʧ]	brydż+e [dʒɛ]	‘bridge’

The data in (24) indicate that the phonetic [ʧ dʒ ʃ ʒ] derive from the underlying soft //ʧʼ dʒʼ ʃʼ ʒʼ// by Hardening, a process applicable in a systemic manner to all stridents present in the inventory of Polish.

Returning to the Kashubian data in (21) and (22), the crucial fact to be noted is that the underlyingly hard //t d s z n// in the declension follow the same pattern, namely, they all take /-ə/ as their plural marker. Thus, it cannot be unambiguously stated that any of the coronals are [−back] in the underlying representation. In the loc.sg. //n// undergoes palatalization to [ɲ] in a transparent manner. The change of //t d// is visible, mostly because of affrication, whereas //s z//, fricatives, remain seemingly unchanged on the surface.

However, it would be a stipulation to say that //t d n// undergo Coronal Palatalization, while //s z// are excluded from the process. The segments //t d s z n// form a natural class: they are [+anterior] coronals and [+back]. One possibility is to exclude //s z// from palatalization by assuming that Coronal Palatalization does not apply to segments that are [+strid].

Yet, there is another solution to this problem. It is reasonable to assume that //s z//, being members of the Kashubian coronal inventory, also undergo Coronal Palatalization. Bearing in mind that palatalization is a softening process, Coronal Palatalization in Kashubian would now be formulated as follows.

(25) Coronal Palatalization (3rd approximation)

t d s z n → t’ d’ s’ z’ ɲ / — i e ɛ

In (25), soft segments appear as the output of Coronal Palatalization. As stated in section 4.4, Coronal Palatalization in Kashubian is accompanied by a process of Hardening stated segmentally in (15). Since there are no soft [ʦ’ ʣ’] in the surface representation and Hardening applies context-freely, soft /s’ z’/ can be assumed to also undergo this process. The input of the spell-out rule of Hardening should then be broadened to include all anterior stridents, as shown in (26).

(26) Hardening (2nd approximation)

ʦ’ ʣ’ s’ z’ → ʦ ʣ s z

It might seem that postulating a rule which changes //s z// → /s’ z’/ → [s z] complicates the grammar. However, it is a reasonable solution, since //s z//, which constitute a natural class with //t d n//, are not excluded from the process of Coronal Palatalization. The process mirrors the one affecting //t d//, namely, the derivation changing //t d// → /t’ d’/ → /ʦ’ ʣ’/ → [ʦ ʣ]. The rules change a [+back] segment into a [−back], only to turn it into a [+back] consonant at later stages of the derivation. To conclude, the palatalization of //s z// and the accompanying changes constitute, just as is the case with the palatalization of //t d//, a Duke of York gambit.

To summarize, Coronal Palatalization affects a natural class of sounds: //t d s z n//. Pulling the various pieces of the discussion together, the rules read as follows.

(27) Coronal Palatalization, Stridency and Hardening in Kashubian (4th approximation)

a. Coronal Palatalization

t d s z n → t’ d’ s’ z’ ɲ / — i e ɛ

b. Stridency Spell-out

t’ d’ → ʦ’ ʣ’

c. Hardening

ʦ’ ʣ’ s’ z’ → ʦ ʣ s z

The Duke-of-York gambit is shown in the derivations of the words *bòce* ‘shoe’ (loc.sg.) and *lese* ‘forest’ (loc.sg.).

(28) Derivation of the words *bòce* ‘shoe’ (loc.sg.) and *lese* ‘forest’ (loc.sg.)

UR	bò//t+ɛ//	la//s+ɛ//	
	t+ɛ	s+ɛ	WFR: loc.sg. /-ɛ/
	t’+ɛ	s’+ɛ	Coronal Palatalization (27a)
	ʦ’+ɛ	-	Stridency Spell-out (27b)
	ʦɛ	sɛ	Hardening (27c)
SR	[ʦɛ]	[sɛ]	

As shown in (28), the loc.sg. phoneme induces Coronal Palatalization, which creates the input to Stridency Spell-out. Next, the context-free Hardening applies and derives the attested surface forms.

To sum up, a rule of Coronal Palatalization postulated for Kashubian affects //t d s z//.[23] The process is accompanied by spell-out rules of Stridency and Hardening. Since there are no soft [ʦ’ ʣ’ s’ z’] in the phonetic inventory of Kashubian coronals, Hardening is surface-true.

[23] The rule includes also //n// → [ɲ].

4.7. Status of Coronal Palatalization: cyclic or postcyclic?

Looking at the data in (1), e.g. at words such as *bòt* [t] – *bòce* [ʦ+ɛ] ‘shoe’ (nom.sg – loc.sg.), and in (29) below, Coronal Palatalization can be assumed to apply before front vowels, irrespectively of the existence of a morpheme boundary between the input and the trigger. In (29), the rule appears to apply within one morpheme, whereas in (1), in words such as *kòt* [t]– *kòce* [ʦ+ɛ] ‘cat’ (nom.sg. – loc.sg.), Coronal Palatalization applies also across a morpheme boundary. If this were the case, the rule, not restricted by the derived environment, would have to be postcyclic. This conclusion seems to be supported by the following examples.

(29) Words with sequences [ʤɛ] and [ʦɛ]on the surface

Kashubian	*gloss*
dzec+ë [ʤɛ]	‘children’
dzedz+ë+c [ʤɛ]	‘heir’
dzeł+o [ʤɛ]	‘masterpiece’
cepł+o [ʦɛ]	‘hot’
cela [ʦɛ]	‘cell’
cencz+i [ʦɛ]	‘thin’

However, other data contradict the assumption that Coronal Palatalization in Kashubian is a postcyclic rule. Consider the examples in (30).

(30) Loc.sg. formation of nouns with stem-final coronals

nom.sg.	*loc.sg.*	*gloss*
debiut [dɛ] [t]	debiuc+e [dɛ] [ʦɛ]	‘debut’
dekad+a [dɛ] [da]	dekadz+e [dɛ] [ʣɛ]	‘decade’
test [t] [t]	tesc+e [tɛ] [ʦɛ]	‘test’
temperament [t] [t]	temperamenc+e [tɛ] [ʦɛ]	‘temperament’

In all of these examples, initial [t d] do not palatalize, even though the appropriate context for the rule is met. It might appear that the words are exceptions to Coronal Palatalization. However, the loc.sg. forms of the very same examples contradict the assumption. If these words were exceptions to the rule, the predicted form would have produced the incorrect result with endings such as *[-tɛ] or *[-dɛ]. On the other hand, if the rule were postcyclic, and applied both within morphemes and across morpheme boundaries, the word would be pronounced with initial *[ʦɛ-] or *[ʣɛ-]. For example, the word *debiut* ‘debut’ in the loc.sg. form would have to be pronounced as *[dɛbjutɛ] or *[ʣɛbjutsɛ], accordingly. Thus, there must be some restriction on the application of Coronal Palatalization. Since, as is generally assumed, lexical features such as those marking exceptions, reside on morphemes, not on individual segments, the word *debiut* and other words where coronals behave similarly, prove that the application of the rule is restricted to morpheme boundaries, hence the rule is cyclic.

Stridency Spell-out operates independently of the context and across the board. Thus, given the theory’s assumptions, the rule must be postcyclic. The vital thing is that Stridency Spell-out operates on soft coronals and as such has to be ordered before Hardening.

Since there is no soft [ʦ’ ʣ’] in the surface representation of Kashubian, the conclusion is that the rule of Hardening accompanying Coronal Palatalization applies in a spell-out manner. The rule should also account for the possible underlying soft //ʦ’ ʣ’//, and, therefore, it must apply across the board, irrespective of the presence of the derived

environment. Consequently, the rule must be postcyclic.

The hitherto discussion is summarized by the derivations of the words *bòce* [ʦ+ɛ] 'shoe' (loc.sg.) and *lese* [s+ɛ] 'forest' (loc.sg.).

(31) Derivation of the words *bòce* 'shoe' (loc.sg.) and *lese* (loc.sg.)

UR	bò//t+ɛ//	le//s+ɛ//	
	t+ɛ	t+ɛ	WFR: loc.sg. /-ɛ/
	t'+ɛ	s'+ɛ	Coronal Palatalization (27a)
Postcyclic	t'+ɛ	s'+ɛ	
	ʦ'ɛ	-	Stridency Spell-out (27b)
	ʦɛ	sɛ	Hardening (27c)
SR	[ʦɛ]	[sɛ]	

In sum, the conclusion is that Kashubian Coronal Palatalization, like its equivalent in Polish, is a cyclic rule, namely, it applies only in derived environments. Stridency Spell-out and Hardening in Kashubian are postcyclic, that is, they apply across the board. Hardening bleeds Stridency Spell-out. Thus, in order to be able to operate, Stridency Spell-out must be ordered before Hardening.

4.8. Interaction of Coronal Palatalization and Velar Palatalization

This section discusses non-transparent cases of palatalization processes affecting velars in adjectives such as *dłudżi* [ʤ'+i] 'long' (masc.) and *długô* [g+ɨ] 'long' (fem.) and the interaction of the said processes affecting velars with Coronal Palatalization and its accompanying rules. I propose the final version of Coronal Palatalization and state the rules of Velar Fronting and Velar Softening. I also establish the underlying representations of the

feminine and the masculine endings of adjectives and propose an analysis involving derivational levels. I employ a modified version of Lexical Phonology prompted by my analysis.

4.8.1. Overview of issues

Kashubian exemplifies a pattern of alternations in the class of adjectives involving velar and coronal stems. The alternations are attested also in the masculine nominative singular endings.

(32) a. The masculine nom.sg. morpheme appears in two shapes: [i] and [ɨ]. The ending [i] appears after velar stems such as *drodżi* [ʤ'+i] 'expensive', whereas the ending [ɨ] occurs after coronal stems, as in, for example, *bògati* [t+ɨ] 'rich'.

b. The masculine and the feminine endings occur in one shape, as [ɨ], in most cases. There is one exception: after velar stems, the masculine ending surfaces as [i], in words such as *drodżi*, and the feminine ending surfaces as [ɨ], in words such as *drogô* 'expensive'.

c. In some instances, Coronal Palatalization applies to adjectives and in some other instances it does not, as in for example, the pair of *bògati* [t+ɨ] 'rich' – *kòcy* [ʦ+ɨ] 'cat' (masc.nom.sg.).

In the following sections, I explore three possible scenarios for an analysis of the masculine ending: (i) //-i// is the UR of the masculine adjective, (ii) there is underlying allomorphy involving the masculine adjectival ending, where, the underlying //-i// occurs after stem-final //k g// while //-ɨ// occurs elsewhere; (iii) //-ɨ// is the UR of the masculine adjective and Kashubian derivation takes place at two levels. I argue that the masculine and the feminine adjectival endings have the same UR, namely //-ɨ//. Crucially, nominal, verbal and adjectival

derivation takes place on level 1 and adjectival inflection takes place on level 2.

4.9. Data

Kashubian has a productive process that palatalizes velars before the high front vowel [i]. This is exemplified by the data in (33a).

(33) Masculine and feminine formation of adjectives

	fem.nom.sg.	*masc.nom.sg.*	*gloss*
a.	drog+ô [gɨ]	drodż+i [ʤ'i]	'expensive'
	dług+ô [gɨ]	dłudż+i [ʤ'i]	'long'
	cenk+ô [kɨ]	cencz+i [ʧ'i]	'thin'
	dzëk+ô [kɨ]	dzëcz+i [ʧ'i]	'wild'
	lëdzk+ô [kɨ]	lëdzcz+i [ʧ'i]	'human'
b.	bògat+ô [tɨ]	bògat+i [tɨ]	'rich'
	młod+ô [dɨ]	młod+i [dɨ]	'young'
	zmiart+ô [tɨ]	zmiart+i [tɨ]	'thin'
	ostatn+ô [nɨ]	ostatn+y [nɨ]	'last'
	grëb+ô [bɨ]	grëb+i [bɨ]	'fat'
	głup+ô [pɨ]	głup+i [pɨ]	'stupid'

The first observation concerns the shape of the masculine nom.sg. morpheme. The ending surfaces as [i] after velar stems in words such as *drodżi* [ʤ'+i], and as [ɨ] after coronal stems in, for example, *bògati* [t+ɨ]. The second issue raised by the data in (33) is that the masculine and the feminine endings surface in the same shape, that is, as [ɨ], after coronals and labials, but not after velar stems.

The mystery of the endings is further magnified by the data in (34).

(34) Denominal adjective formation

N nom.sg.	*Adj. fem.nom.sg.*	*Adj. masc.nom.sg.*	*gloss*
kòt [t]	kòc+y [ʦɨ]	kòc+ô [ʦɨ]	‘cat’
niast+a [ta]	niasc+y [ʦɨ]	niasc+ô [ʦɨ]	‘woman’
kret [t]	krec+y [ʦɨ]	krec+ô [ʦɨ]	‘mole’
robot+a [ta]	roboc+y [ʦɨ]	roboc+ô [ʦɨ]	‘work’

The data in (34) raise issue number three: [ɨ] is in the representation of the masculine adjectival ending. The examples exhibit an alternation [t] – [ʦ], which suggests the operation of a process parallel to that of Coronal Palatalization presented in the noun declension in (1), e.g. in *kòt* [t] – *kòce* [ʦɛ] ‘cat’ (nom.sg. – loc.sg.). The context for the change appears on the surface as a phonologically back vowel [ɨ].[24] If the rule is indeed that of Coronal Palatalization, the context triggering the process is opaque. This adds complexity to the issue regarding the shape of the UR of the masculine and the feminine endings of adjectives, if it is these endings that trigger the process.

4.9.1. Underlying representation of the masculine ending

The first issue raised by the data in (33) is that the masc.nom.sg. ending surfaces as [i] in the examples in (33a), such as *drodži* [ʤ’+i] ‘expensive’, and as [ɨ] in the examples in (33b), such as *bògati* [t+ɨ] ‘rich’ and *grëbi* [b+ɨ] ‘fat’. In other words, there is an alternation [i] – [ɨ] in these examples. The question is whether the alternation can be reduced to a single underlying representation or whether we are looking at two underlying allomorphs here. The [−back]

[24] This classification follows from the fact that phonologically central vowels align themselves with back rather than with front vowels. For the existence of /ɨ/ in the inventory, see Chapter 3.

ending appears after //k g//, whereas the [+back] ending occurs elsewhere.

Below, I analyse three possible solutions to the question of the UR of the masculine ending of adjectives: (i) //i// is in the UR; (ii) the UR has two allomorphs: //i// is chosen after velars and //ɨ// is chosen elsewhere; (iii) //ɨ// is in the UR.

4.9.1.1. Hypothesis 1: //i// is the UR of the masculine ending

Let us assume that //i// is the underlying representation of the masculine morpheme. This assumption works for velar-stem adjectives such as *drodżi* [ʤ'+i] 'expensive', but poses a significant problem for coronal-stem adjectives such as *bògati* [t+ɨ] 'rich'. The problem is that the addition of //i// creates, incorrectly, a context for Coronal Palatalization to apply, which is exemplified in (35).

(35) Derivation of *bògati* 'rich' and *drodżi* 'expensive' with //-i// as the masc.nom.sg. marker

UR	bòga//t+i//	dro//g+i//	
	t+i	g+i	WFR: masc.nom.sg. /-i/
	t'+i		Coronal Palatalization (27a)
		ʤ'+i	Velar Palatalization (19b)
		ʒ'+i	Spirantization (12b)
Postlexical	t'+i	ʒ'+i	
	ʦ'+i		Stridency Spell-out (27b)
	ʦi	-	Hardening (27c)
SR	*[ʦi]	*[ʒ'i]	

The rule and its associated processes yield *bògaci* *[tsɨ] on the surface. In the stem *drog-*, Velar Palatalization sets in, feeding Spirantization and producing *drożi* *[ʒ'i]. The analysis

requires modification.

4.9.1.2. Excursus on Velar Palatalization and Velar Softening

In order to discuss changes in stem-final velars of adjectives, we need to address the apparent incompatibility in the hitherto analysis. Velar Palatalization proposed in Section 4.2 for words such as *wôga* [g+a] – *wôżëc* [ʒ'+ɛ] 'weight' (N –V) stands in opposition to the examples in (33a), namely, the adjectives such as *drodżi* [ʤ'+i] 'expensive' or *ubodżi* [ʤ'+i] 'poor'.

In the analysis of *wôżëc* [ʒ'+ɛ] 'to weigh' or *pòdrożec* [ʒ'+ɛ] 'to become expensive', I argued that Velar Palatalization of //g// is followed by Spirantization, changing the output of Velar Palatalization: *ʤ' → ʒ'*. If this analysis were true also for the adjectives exemplified in (33a), the derivation, repeated here for convenience, would be as follows:

(38) Derivation of *wôżëc* and *drodżi*: Velar Palatalization

UR	wô//g+ɛ[25]+ʦ//		dro//g+i//	
	g+ɛ	WFR: V /-ɛ-/	g+i	WFR: masc.nom.sg. /-i/
	ʤ'+ɛ		ʤ'+i	Velar Palatalization (19b)
	ʒ'+ɛ		ʒ'+i	Spirantization (12b)
SR	[ʒ'ɛ]		*[ʒ'i]	

Velar Palatalization applies, triggering Spirantization in both words, which is correct for verbs but not for adjectives.

I will assume, after Brzostek (2007), that Kashubian has two separate rules affecting velars: one rule is triggered by both /i/ and /ɛ/ and the other rule is triggered solely by /i/. The first rule is Velar Palatalization, as described earlier, affecting //k g x// and accompanied by

[25] Actually //-i// is the UR verbalizing maker which lowers after soft stridents at later stages of the derivation. I will discuss the verb formation and the accompanying processes in the following chapter. For clarity of presentation, //-ɛ// is assumed to be the verbalizing marker here.

Spirantization. The second rule is Velar Softening. It fronts the underlying velars //k g// to soft postalveolar stridents [ʧʼ ʤʼ] in the context of /i/. The rule is formulated in (39).

(39) Velar Softening

k g → ʧʼ ʤʼ / — i

The assumption that the Kashubian system contains the rule of Velar Softening, stated as in (39), follows from two independent facts. First, the soft palato-alveolar [ʤʼ], the output from //g//, does not spirantize to [ʒʼ], as in the word *drodżi* [ʤʼ+i] 'expensive'. This happens counter to what the rules of Velar Palatalization and Spirantization require. Second, the stem-final velar [x] remains unchanged on the surface, as exemplified in (40).

(40) Masc.nom.sg. adjectives with stem-final [x]

Adj. nom.masc.sg.	*gloss*
lëch+y [xɨ]	'bad'
cëch+y [xɨ]	'quiet'
głëch+y [xɨ]	'deaf'

The voiceless velar /x/ does not constitute an input to the rule of Velar Softening. On the other hand, the stem-final //x// undergoes Velar Palatalization, as in *strach* [x] 'fear' – *straszëc* [ʃʼ+ɛ] 'to haunt'.

I conclude that Velar Palatalization and Velar Softening are separate rules. The former affects //k g x// and applies in the context of /i e ɛ/, whereas the latter affects //k g// and applies only in the context of /i/. Under the Elsewhere Condition (Anderson 1969, Kiparsky 1973), if the system contains two entailed rules, the rule which is more specific should apply before the rule that is more general. Thus, I can state that Velar Softening

precedes Velar Palatalization in the derivation. Given the ordering of the rules, Velar Softening is predicted to belong to the cyclic component, because it precedes Velar Palatalization, which is cyclic.

4.9.1.3. Hypothesis 1 continued: Vowel Retraction scenario

Let us return to the issue of the underlying representation of the masculine adjectival ending and Hypothesis 1. Adding Velar Softening to the system allowed for salvaging the analysis with respect to velar stems. This is exemplified in (41).

(41) Application of Velar Softening to masc.nom.sg. adjectives

UR	*dro*//g+i//	
	g+i	WFR nom.sg. /-i/
	ʤ’+i	Velar Softening (39)
Postcyclic	ʤ’+i	
SR	[ʤ’i]	

The high front vowel /-i/ of the adjectival ending triggers Velar Softening, changing the stem-final //g// into [ʤ’].

Let us now look at how Coronal Palatalization would operate if //i// is assumed to be the UR of the masculine ending.

(42) Application of Coronal Palatalization to masc.nom.sg. adjectives

UR	bòga//t+i//	
	t+i	WFR nom.sg. /-i/
	t'+i	Coronal Palatalization (27a)
Postcyclic	t'+i	
	ʦ'+i	Stridency Spell-out (27b)
	ʦ+i	Hardening (27c)
SR	*[ʦi]	

The derivation produces the wrong result in coronal-stem adjectives: the word-formation rule has created a context for Coronal Palatalization and the accompanying rules to apply, yielding the wrong result: *bògaci* *[ʦ+i].

Postulating a rule of vowel retraction seems to be a solution to the problem of why Coronal Palatalization does not apply in coronal-stem masculine adjectives such as *młodi* [d+ɨ] 'young' and *bògati* [t+ɨ] 'rich'. Let us assume that Kashubian prohibits high front vowels in adjacency to non-palatalized (i.e. hard) consonants. Thus, segment clusters such as *[di], *[ti] must be excluded. This could be implemented through Vowel Retraction.

(43) Vowel Retraction

i → ɨ / C —

The rule retracts underlying //i// in the context of //t d// in masculine adjectives. The process accounts for the surface-attested sequences of [tɨ] and [dɨ] in adjectives such as *młodi* 'young' and *bògati* 'rich'.

(44) Derivation of *bògati* ‘rich’ (masc.nom.sg.)

UR	*bògat<u>i</u>* //t+i//	
	t+i	WFR nom.sg. /-i/
	t+ɨ	Vowel Retraction (43)
	-	Coronal Palatalization (27a)
Postcyclic	t+ɨ	
	-	Stridency Spell-out (27b)
	-	Hardening (27c)
SR	[tɨ]	

Vowel Retraction bleeds Coronal Palatalization. It is a cyclic rule because it is ordered before Coronal Palatalization, which is cyclic.

Labial stems of adjectives such as *grëbi* [b+ɨ] ‘fat’ and *głupi* [p+ɨ] ‘stupid’ seem to pose a problem for this analysis. Since the rule predicts that underlying //i// retracts after hard consonants, there should be no forms with a hard consonant followed by the high front vowel. Yet, there are numerous examples for the clusters [pi] and [bi] in the surface representation: *lepic* [p+i+ʦ] ‘to glue’ and *robic* [b+i+ʦ] ‘to do’, to give a few. The verbalizing [-i] is present on the surface, although the context for Vowel Retraction is met.

Labials are problematic. Section 4.2 has adopted Brzostek’s (2007) argument for the existence of soft and hard labials in the underlying inventory of Kashubian. Underlying soft labials, namely //p’ b’ f’ v’// never surface as [−back]. Instead they decompose into hard labials followed by [j] when followed by a vowel. Identifying whether the labial is hard or soft underlyingly by looking at its surface representation can sometimes be difficult, if not impossible. The first step would be to look at different forms of the word. In the masc.gen.sg. forms of the analysed adjectives, namely *głupègo* [p+ɛ] ‘stupid’ and *grëbègo* [b+ɛ] ‘fat’, the labials are not followed by [j]. This means that they are [+back] underlyingly. Otherwise, they

would decompose to [pj] and [bj], respectively.

To conclude, the context in (43) cannot be assumed to include underlyingly hard, i.e. [+back] labials. [p b] present in the verbs *lepic* 'to glue' and *robic* 'to do' are underlyingly hard, but they do not decompose and surface as **lepjic* [pji] or **robjic* [bji].

The data in (45) provide yet another argument against the vowel retraction scenario.

(45) 3rd person preterite verb formation of labial and coronal stems

coronal and labial stems	*Verb*	*gloss*
zvòn [n] (N)	zvòn+i+ł [ɲiw]	'bell'
lep [p] (N)	lep+i+ł [piw]	'glue-paper'
dëm [m] (N)	dëm+i+ł [miw]	'smoke'
za+baw+a [va] (N)	baw+i+ł sã [viw]	'play'

In the 3rd person preterite form of the verb, underlying //i// surfaces transparently as the verbalizing morpheme. If Vowel Retraction existed as a rule, the verb forms would surface with [ɨ]: *lepył* *[pɨw], *dëmył* *[mɨw], and *bawył sã* *[vɨw]. The argument against Vowel Retraction is made stronger by *zvòn – zvònił* [ɲiw]. What we see is palatalization, *n* → *ɲ*, rather than Vowel Retraction, *i* → *ɨ*. I conclude that Vowel Retraction is not a rule of Kashubian.

Consequently, the hypothesis that //i// is the underlying representation of the masculine ending cannot be salvaged in any way and must be rejected.

4.9.1.4. Hypothesis 2: allomorphs in the underlying representation of the masculine nom.sg. ending

Postulating two underlying allomorphs for the masc.nom.sg. ending seems to be a better way

to account for to the problem of the absence of palatalization in stem-final coronals of adjectives, such as *młodi* [d+ɨ] 'young' and *bògati* [t+ɨ] 'rich'. Hard stems, such as *młodi* 'young' and *głupi* 'stupid', take //-ɨ// as the masculine marker, whereas soft stems and velar stems, such as *drodżi* [dʒ'+i] 'expensive', take //-i// as the masc.nom.sg. marker. With two different URs of the masc.nom.sg. endings, the analysis becomes straightforward, as shown by the derivation in (46).

(46) Derivation of masculine adjectives: allomorphy

UR	dro//g+i//		bòga//t+ɨ//	
	g+i	WFR nom.sg. /-i/	t+ɨ	WFR nom.sg. /-ɨ/
			-	Coronal Palatalization (27a)
	dʒ'+i			Velar Softening (39)
SR	[dʒ'i]		[tɨ]	

The stem *drog-* takes //-i// as its masc.nom.sg. marker. Velar Softening applies in the cyclic component, yielding the desired output *drodżi.* The adjectival stem *bògat-* ends with a hard coronal and takes the [+back] allomorph //-ɨ// as its masc.nom.sg. marker. The input does not undergo any processes and appears on the surface in an unchanged form, namely as *bògati.*[26]

The analysis works. It will also work initially in Optimality Theory, because the URs of *drodżi* 'expensive' and *bògati* 'rich' will have the allomorphs //-i// and //-ɨ//, respectively, and the constraint *kɨ gɨ, corresponding to Velar Fronting, will pick the //-i// allomorph in *drodżi* and the //-ɨ// allomorph in *bògati*. The choice of //-ɨ// after coronals is a less costly solution, because it involves fewer changes. In other words, //-ɨ// would be the default choice and //-i// would be chosen only under duress.

However, postulating allomorphy in the underlying representation of the adjectival

[26] The Kashubian tradition is to spell the adjectival ending as *i*, even though the pronunciation is [ɨ].

masculine marker should be treated as the last resort. Ever since SPE (Chomsky and Halle 1968), default solutions employ phonology. The following sections attempt to resolve the issues of masculine and feminine adjectival endings with the help of the tenets of Lexical Phonology.

4.9.1.5. Hypothesis 3: //i̶// is the UR of the masculine ending

The third hypothesis is that //i̶// belongs to the UR of the masculine ending. When //-i̶// is added to the stem *bògat-*, no palatalization applies, as the ending is a phonologically [+back] phoneme. The problem is that in the velar-stem adjectives, the derivation gives the wrong result, as shown in (47).

(47) Derivation of *bògati* 'rich' and *drodži* 'expensive' – wrong results

UR	bòga//t+i̶//	dro//g+i̶//	
	t+i̶	g+i̶	WFR: masc.nom.sg. /-i̶/
	-		Coronal Palatalization (27a)
		-	Velar Softening (39)
SR	[ti̶]	*[gi̶]	

The addition of a back vowel to the velar stem produces the sequences *[ki̶ gi̶], unattested in the masculine adjective.

There must be a rule that repairs the undesired sequences. I assume that the rule is Velar Fronting, changing the vowel place of articulation from [+back] into [−back] when preceded by //k g//.

Velar Fronting is robustly supported typologically: it is known to exist in, for example, Polish and Russian (Rubach 1984, Plapp 1996).

(48) Velar Fronting

ɨ → i / k g —

Given Velar Fronting, the ending of the nom.sg. can be simply //ɨ//. It is fronted to [i] after velars and remains unaffected elsewhere, as documented by the following derivation (49).

(49) Derivation of *bògati* 'rich' and *drodżi* 'expensive' with //-ɨ// as masc.nom.sg. marker

UR	*bòga*//t+ɨ//	*dro*//g+ɨ//	
	t+ɨ	g+ɨ	WFR: fem.nom.sg. /-ɨ/
	-		Coronal Palatalization (27a)
		g+i	Velar Fronting (48)
		ʤ'+i	Velar Softening (39)
SR	[tɨ]	[ʤ'i]	

The word-formation rule has added /-ɨ/ to the stem *bògat-*. Since /ɨ/ is a phonologically back segment, there is no context for Coronal Palatalization. The adjective surfaces in its attested form, namely as *bògati* [t+ɨ]. In *drodżi*, the [+back] vowel changes to [−back]: //g+ɨ// → /g+i/, which in turn feeds Velar Softening. The analysis gives the correct results.

To conclude, I postulate //ɨ// as the underlying representation of the masculine nom. ending of adjectives. I also propose that Kashubian has the rules of Velar Fronting and Velar Softening, with the former ordered before the latter.

4.9.2. Velar Softening in masculine and feminine adjectives

The second issue raised by the data in (33) is that the masculine and the feminine coronal- and labial-stem adjectives exemplified in (33b), such as *bògati* [t+ɨ] and *bògatô* [t+ɨ] 'rich', surface with [ɨ]. In masculine velar-stem adjectives, such as *drodżi* [ʤ'+i] 'expensive', the

morpheme surfaces as [i] whereas in feminine velar-stem adjectives, such as *drogô* [g+ɨ], the morpheme surfaces as [ɨ]. In masculine adjectives //k g// palatalize to [ʧ’ ʤ’] while in feminine adjectives underlying //k g// surface unaltered as [k g]. As argued in section 4.9.1.5, the UR of the masculine ending is //-ɨ//.

As (50) below illustrates, the vowel is fronted after a velar via Velar Fronting. The feminine ending presents no alternation, so there is hardly an option to choose an underlying representation of the morpheme that would be other than //ɨ//. The analysis of coronal- and labial-stem adjectives becomes straightforward as the back vowel //ɨ// does not trigger any of the palatalization processes.

The problem with assuming that both the masculine and the feminine adjectival endings are homophonous in the UR is their behaviour is different in velar stem adjectives. This is shown in (50).

(50) Application of Velar Softening to fem.nom.sg. ending

UR	*dro* //g+ɨ// (masc.)	*dro*//g+ɨ// (fem.)	
	g+ɨ	g+ɨ	WFR masc. nom.sg. /-ɨ/ fem.nom.sg. /-ɨ/
	g+i	g+i	Velar Fronting (48)
	ʤ’+i	ʤ’+i	Velar Softening (39)
SR	[ʤ’i]	*[ʤ’i]	

The grammar predicts, incorrectly, that Velar Softening applies to both masculine and feminine adjectives. The derivation produces the correct result for masculine adjectives, but at the same time, the wrong result for feminine adjectives: *drodżi* *[ʤ’i] ‘expensive’ for the attested [drɔgɨ]. The analysis must be modified.

4.9.2.1. Absence of Velar Softening in feminine adjectives

The absence of Velar Softening in feminine adjectives can be accounted for in two ways. The first way is to make the feminine ending invisible for the rule of Velar Fronting. The second option is to employ a modified version of Lexical Phonology that allows for the derivation to take place in levels. The masculine adjectival derivation is restricted to level 1 at which Velar Fronting and Velar Softening operate. The feminine adjectival inflection takes place at level 2, at which Velar Fronting is no longer operational.

HYPOTHESIS 1

Diacritic feature of the feminine adjectival ending

To account for the behaviour of the feminine morpheme, namely, the absence of Velar Softening, as in *drogô* [g+ɨ] 'expensive', let us assume that the feminine adjectival morpheme is an exception to Velar Fronting, the rule feeding the application of Velar Softening. The question now is how this exceptionality should be encoded in the grammar. The simplest solution is to follow SPE (Chomsky and Halle: 1968) and assume a diacritic exception feature. The feature [−Velar Fronting] would be part of the underlying representation of the feminine ending. In other words, the morpheme marked $^{[-\text{Velar Fronting}]}$, namely the feminine morpheme, would become invisible to Velar Fronting. This is visualised in (51).

(51) Adjectival fem.nom.sg. ending invisible to Velar Fronting

UR	*dro*//g+ɨ//	
	g+ɨ	WFR fem.nom.sg. /-ɨ/$^{[-\text{Velar Fronting}]}$
	-	Velar Fronting (48)
	-	Velar Softening (39)
SR	[gi]	

As shown in (51), the nom.sg. ending is marked with a diacritic, making the morpheme invisible to the rule of Velar Fronting. Although the back vowel /ɨ/ enters the derivation and is preceded by velar /g/, Velar Fronting does not apply. Hence, no context is created for Velar Softening. The derivation yields the correct result.

The hypothesis works. The difficulty with this analysis is that postulating an exception to the derivation by making the candidates invisible to certain rules would constitute a significant change to the theory's assumptions. By universal convention, all other morphemes which contain /ɨ/ sensitive to Velar Fronting should be marked as $^{[+\text{Velar Fronting}]}$. By the same token, the masc.nom.sg. marker will be represented //-ɨ$^{[+\text{Velar Fronting}]}$//. The indexation would increase the complexity of the underlying inventory to a great extent. The viability of the solution, although generating the correct results, needs further research, which is beyond the scope of this dissertation.

HYPOTHESIS 2

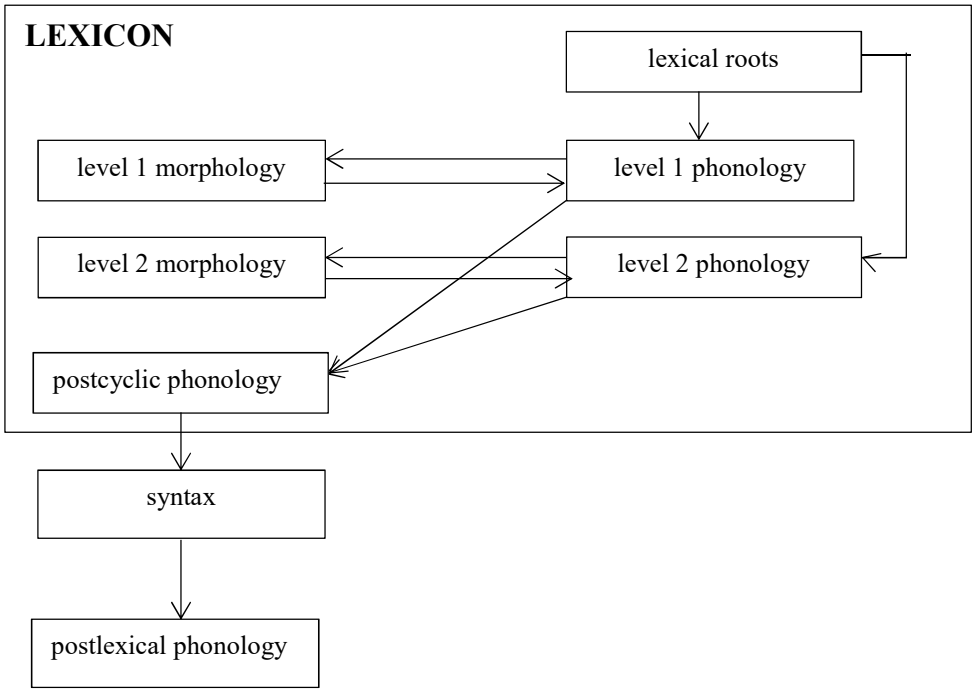
Levels scenario

There is an alternative solution to the problem of the absence of Velar Fronting in feminine adjectives, such as *drogô* [g+ɨ] 'expensive' and *cenkô* [k+ɨ] 'thin'. Let us assume that the masculine and the feminine endings have homonymous underlying representations: //-ɨ// and

that the operation of Velar Fronting is restricted, in such a way that the restriction affects the feminine ending but not the masculine ending.

The solution requires Lexical Phonology to be modified. Kiparsky (1982) argues that lexicons of some languages contain derivational levels. Lexical items that enter the lexicon undergo a series of morphological and phonological operations grouped in levels. Each level has its own word formation rules, that is, rules are assigned to levels. The lexicon is structured as follows.

(52) Modified Lexical Phonology model



Kiparsky (1982) claims that there are word formation rules applying in one level accompanied by certain phonological rules restricted solely to that level. A language can have two or more derivational levels. English is an example of such a language, since it has level 1 affixes that are of Romance origin and level 2 affixes that are of Germanic origin.[27] The theory predicts that level 1 affixes must be cyclic. The status of level 2 affixes is unclear.

[27] Kiparsky (1982) proposed even three derivational levels for English.

Let us then assume that affixes are added at two levels in Kashubian, and that Velar Fronting, as a cyclic rule, works only at level 1. Also at level 1, WFRs add the masculine morpheme to adjectives. This is illustrated by the derivation in (53).

(53) Derivation of *drodżi* 'expensive' (masc.nom.sg.) – level 1

UR	dro//g+ɨ//	
Level 1	g+ɨ	WFR masc.nom.sg. /-ɨ/
	g+i	Velar Fronting (48)
	ʤ'+i	Velar Softening (39)
Postcyclic	ʤ'+i	
SR	[ʤ'i]	

Velar Fronting applies at level 1. The rule feeds Velar Softening and produces [drɔʤ'i], the attested output of the masculine adjective.

Crucially, the feminine adjective morpheme is added at level 2, as illustrated by (54).

(54) Derivation of *drogô* 'expensive' (fem.nom.sg.): level 2

UR	dro//g+ɨ//	
Level 2	g+ɨ	WFR: fem.nom.sg. /-ɨ/
		Velar Fronting (48) – does not operate at level 2
Postcyclic	g+ɨ	
SR	[gɨ]	

As Velar Fronting is assigned to level 1, it cannot apply to the adjective *drogô* 'expensive'. The feminine adjective case marker enters the derivation at level 2, where this rule is not active. The word-final //ɨ// surfaces in an unchanged form. The derivation gives the correct

result.

The rule of Velar Fronting proposed in the foregoing discussion should be thus modified as in (55).

(55) Velar Fronting (final version)

ɨ → i / k g —

Condition: applies at level 1

At this stage of the analysis, there is no need to restrict the application of rules other than Velar Fronting to level 1. The system works. The advantage is that it eliminates the necessity of postulating abstract vowels in the underlying system. Let us assume that the other rules proposed for the system are by default restricted to level 1, until proven to operate otherwise.

To conclude, much like English, Kashubian is argued to have two derivational levels in its lexicon. The derivation of nouns, verbs, and adjectives, except for the feminine nom.sg. ending takes place at level 1 whereas the derivation of the feminine ending occurs at level 2. The rule of Velar Fronting is restricted to level 1. Table (56) summarizes the assumptions made so far.

(56) Levels in Kashubian lexicon

Level	Morphological rules	Phonological rules
level 1	• derivation of nouns (e.g. masc.loc.sg. /-ɛ/) • derivation of verbs (e.g. verbalizing /-i-/) • derivation of adjectives (e.g. masc.nom.sg. /-ɨ/)	Coronal Palatalization Velar Fronting Velar Softening Velar Palatalization Spirantization
level 2	• derivation of fem. nom.sg. adjective	
postcyclic	–	Stridency Spell-out Hardening Retraction

4.9.3. Denominal Adjectives

Let us return to the last of the issues evoked by the data in Section 4.9. The pairs presented in (34), such as *kòt* [t] – *kòcy* [ʦ+ɨ] 'cat', exhibit the alternation [t] – [ʦ]. This suggests that Coronal Palatalization operates in the adjectives in (34) but not in the masculine adjectives in (33b). In both sets the context for the rule appears to be the same, the phonologically back vowel [ɨ].

As the following paragraphs will show, the data in (34) prove to be a test for the analysis proposed in the levels scenario, accommodating derivational levels into the system of Kashubian.

The data in (34), repeated partially below for convenience, exhibit a productive process of denominal adjectivization (Breza and Treder 1981: 105).

(57) Masc. and fem. denominal adjectives

	nom.sg.	*adj. masc.*	*adj. fem.*	*gloss*
a.	kòt [t]	kòc+y [ʦɨ]	kòc+ô [ʦɨ]	‘cat’
	niast+a [ta]	niasc+y [ʦɨ]	niasc+ô [ʦɨ]	‘woman’
	kret [t]	krec+y [ʦɨ]	krec+ô [ʦɨ]	‘mole’
	robòt+a [ta]	roboc+y [ʦɨ]	roboc+ô [ʦɨ]	‘work’
b.	kòz+a [za]	kòz+y [zɨ]	kòz+ô [zɨ]	‘goat’
	lës [s]	lës+y [sɨ]	lës+ô [sɨ]	‘fox’
	sôłtës [s]	sôłtës+y [sɨ]	szôłtës+ô [sɨ]	‘village administrator’

All of the above examples are adjectives which should escape Coronal Palatalization, because they have //ɨ// as their endings. This is not what we see in the case of //t// inputs: the surface representation contains [ʦ], an effect of palatalization.

The first step is to determine whether it is /i/ or some other segment that is the reason for the change, i.e. whether the process witnessed here is palatalization accompanied by some other process, or whether a different process affecting //t d// is involved. To get a broader look at the problem, let us compare the adjectives presented in (57) with the ones in (58).

(58)

	Adj. masc. nom.sg.	*gloss*
a.	bògat+i [tɨ]	‘rich’
	młod+i [dɨ]	‘young’
	zmiart+i [tɨ]	‘thin’
	ostatn+y [nɨ]	‘last’
b.	grëb+i [bɨ]	‘fat’
	głup+i [pɨ]	‘stupid’

At first glance, the data in (57) and (58) seem to contradict each other: in some cases the palatalization process takes place, as in *kòcy* [ʦ+ɨ] 'cat' (Adj.), *t* → *ʦ*, whereas in others, as in *bògati* [t+ɨ] 'rich', the coronal is not affected. This would be an argument for treating the changes in (57) not as palatalization but rather as a different process.

An important fact to note is that the examples given in (58) are inherent adjectives whereas those in (57) are denominal adjectives. Thus, in the examples in (57) an adjectivizing suffix, apart from the gender marker, is added at some stage of the derivation. Since the palatalized segments are present also in the feminine forms, as, for example, in *kòcô* [ʦ+ɨ] 'cat', it is the adjectivizing suffix that constitutes the context for the change. Recall that in velar-stem adjectives, such as *drogô* [g+ɨ] 'expensive', the feminine ending does not cause any change of the stem-final consonant, as it is [+back] phonologically. Hence, it is the adjectivizing suffix that must be a front vowel.

The question is how to represent the adjectivizing marker in the UR. It is certain that it must be a [+high] and [−back] segment. What is more, /j/ should be excluded (Brzostek 2007), since the segment would cause Iotation (Rubach 1984), i.e., palatalization before /j/ turning //s z// into [ʃ' ʒ']. This is contradicted by the data in (57b). The examples surface as *lësi* [s+ɨ] 'fox' (Adj.), and not *lëszi* *[ʃ'+i] predicted by Iotation. To conclude, the list of possible palatalizing segments is reduced to /i e ɛ/.

Looking at the parallel with Polish, it may be assumed that it is /i/ rather than /e/ or /ɛ/ that is the adjectivizing morpheme (Brzostek 2007, after Rubach 1984). The high vowel //-ɨ// has been argued to be the masc.nom.sg. marker. The UR of the masc. adjective *kòcy* 'cat' is thus assumed to be kò//t+i+ɨ//.

(59) Preliminary derivation of *kòcy* ‘cat’

UR	kò//t+i+ɨ//	
cycle 2[28]	t+i	WFR: adj. /-i/
	t’+i	Coronal Palatalization (27a)
cycle 3	t’+i+ɨ	WFR: masc.nom.sg. /-ɨ/

The derivation runs in cycles, as mandated by Lexical Phonology. The adjectivizing //i// is added on cycle 2, which triggers Coronal Palatalization. The masc.nom.sg. suffix //ɨ// enters the derivation in cycle 3. Thus, there are two vowels present at the later stages of the derivation. One of them must be deleted, since Kashubian does not permit clusters of vowel nuclei[29] in the surface representation in some instances. The rule is formulated as follows.

(60) Vowel Deletion

$V \rightarrow \emptyset$ / — V

However, the rule needs to be modified in order to account for the fact that there are numerous counterexamples with two adjacent vowels on the surface, as shown in (61).

[28] The root cycle, not considered here, is inert, because cyclic rules are barred from applying morpheme-internally by the Strict Cyclicity Constraint.

[29] The discussed dialect of Kashubian appears to permit diphthongs in its vowel inventory in words such as *pòle* [puelɛ] ‘field’, but diphthongs are nuclei in their own right. That is, the [ue] in [puelɛ] is one nucleus, not two.

(61) Words with adjacent vowels

Kashubian	*gloss*
teater [εa]	'theatre'
teatrowi [εa]	'theatrical'
mùzeum [εu]	'museum'
beatifikacëjô [εa]	'beatification'

The application of Vowel Deletion can be restricted, for example, to morpheme boundaries. The restriction saves the analysis with respect to words such as *teater* or *beatifikacëjô*. Yet, in *mùzeum*, neither of the vowels is deleted, in spite of the fact that they are separated by a morpheme boundary. This is shown in (62).

(62) Words with adjacent vowels across morpheme boundaries

Kashubian	*gloss*
mùze+um [εu]	'museum' (N)
mùze+alny [εa]	'museum' (Adj.)
mùze+a [εa]	'museum' (pl.)

The Strict Cyclicity Constraint does not salvage the analysis. The rule does not apply as predicted, despite the fact that the vowels are separated by a morpheme boundary. The result is wrong.

The inadequacy of the analysis is further magnified by the observation that Vowel Deletion is known to be restricted to verbs (Jakobson 1948, Rubach 1984). I conclude that the above analysis should be rejected.

Rubach (1984) argues that Slavic languages have a number of processes involving the suffix /i/ which does not appear on the surface. Let as look at this phenomenon in Polish,

which also has a productive class of denominal adjectives.

(63) Polish denominal fem.nom.sg. adjectives

	fem.nom.sg.	*gloss*
a.	koci+a [tɕa]	'cat'
	lisi+a [ɕa]	'fox'
	kreci+a [ɕa]	'mole'
b.	ryb+i+a [b'ja]	'fish'
	krow+i+a [v'ja]	'cow'
	bab+i+a [b'ja]	'woman'
	małp+i+a [p'ja]	'monkey'

The examples in (63) show that Coronal Palatalization has applied to the nominal stems and that the palatalizing morpheme is not visible on the surface. The palatalizing morpheme surfaces as [j] after labials, i.e. after labial stems such as *małp-* or *krow-*. The question is whether the underlying representation is //j// or some other front vocalic segment. As has been argued above, //j// must be rejected, because it would cause Iotation and produce forms such as *koca* *[ʦ+a] for the attested *kocia* [tɕ+a] 'cat' (Adj.). Also, a palatalizing yer needs to be rejected (Rubach 1984) as there would be no way to account for forms such as *psia* [pɕ+a] 'dog' (Adj.). If the adjectivizing suffix were a yer, *psia* [pɕ+a] would have to have the underlying representation //pEs+E+a//[30], but then Yer Vocalization should vocalize the root yer, yielding *[p'jeɕa], the wrong result.

The solution lies somewhere else. Polish has a gliding rule that turns //i// into [j] prevocalically. The rule is motivated by alternations such as *Garibaldi* [d'i] – *Garibaldiego* [d'jɛ] (nom.sg. – gen.sg.).

[30] The //E// stands symbolically for the yer.

(64) Gliding in Polish

i → j / — V

The [j] derived by Gliding (64) deletes after soft coronals via *j*-Deletion.

(65) *j*-Deletion in Polish

j →Ø / [+coron, −back] —

The derivation of *kocia* is now effected as follows.

(66) Derivation of Polish fem.sg.nom. *kocia* 'cat' (Adj.)

UR	ko//t+i+a//	
	t+i	WFR: Adj. //-i//
	tɕ+i	Coronal Palatalization: t → tɕ / — i ɛ[31]
	tɕ+i+a	WFR fem.nom.sg. //-a//
	tɕ+j+a	Gliding (64)
	tɕ+a	*j*-Deletion (65)
SR	[tɕa]	

A WFR has added /-i/, feeding Coronal Palatalization. After the rule has applied, the high front /i/ glides and then deletes, as it appears after a soft coronal. The adjective surfaces as [kɔtɕa] without the adjectivizing morpheme visible on the surface.

Returning to the discussion of Kashubian, a parallel set of rules of Gliding and *j*-Deletion can be proposed for the system, effecting the disappearance of the adjectivizing morpheme from the surface representation. The fact that the glide surfaces in the declension

[31] The rule is presented as a one-step process for clarity of presentation.

of labial-stem adjectives, as shown in (67a), supports this hypothesis.

(67) Labial- and coronal-stem adjectives in Kashubian

	fem.nom.sg.	*fem.instr.sg.*	*gloss*
a.	rëb+ô [bi]	rëb+i+ą [bjum]	‘fish’
	krow+ô [vi]	krow+i+ą [vjum]	‘cow’
	bab+ô [bi]	bab+i+ą [bjum]	‘woman’
	môłp+ô [pi]	môłp+i+ą [pjum]	‘monkey’
b.	kòc+ô [tsi]	kòc+ą [tsum][32]	‘cat’
	niasc+ô [tsi]	niasc+ą [tsum]	‘woman’
	krec+ô [tsi]	krec+ą [tsum]	‘mole’

The examples in (67a) show the glide, formed from the adjectivizing suffix //-i//, appearing on the surface, as in *rëbią* [bj+um] ‘fish’ or *môłpią* [pj+um] ‘monkey’. Clusters of a labial followed by [j] appear in the context of the [+back] vowel [u], which by definition cannot cause palatalization. The glide is deleted after soft coronals, so it is not visible on the surface, as shown in (67b), in words such as *kòcą* [ts+um] ‘cat’ or *krecą* [ts+um] ‘mole’.

In sum, the rules of Gliding and *j*-Deletion are formulated as follows.

(68) Gliding and *j*-Deletion (1st approximation)

a. Gliding

$i \rightarrow j \; / \; \_\_ \; V$

b. *j*-Deletion

$j \rightarrow \emptyset \; / \; [+coron, -back] \; \_\_$

[32] The UR of the instrumental marker is a nasal which on the surface denasalises to [u] or decomposes to [um] (Jocz 2013: 147–148). I transcribe the final nasal as [um], as discovered by Jocz during his extensive fieldwork. Undoubtedly, both the UR nasal and its surface counterpart are [+back] phonologically and as such do not constitute a palatalization context.

Returning to the example at hand, namely *kòcy* [ʦ+ɨ] ‘cat’, the hitherto discussion, taking into account the rules postulated above, can be summarised schematically in (69).

(69) Derivation of the adjective *kòcy* ‘cat’ (masc.nom.sg.)

UR	kò//t+i+ɨ//	
	t+i	WFR Adj. //-i//
	t’+i	Coronal Palatalization (27a)
	t’+i+ɨ	WFR masc.nom.sg. //-ɨ//
	t’+j+ɨ	Gliding (68a)
	t’+ɨ	*j*-Deletion (68b)
Postcyclic	t’+ɨ	
	ʦ’+ɨ	Stridency Spell-out (27b)
	ʦ+ɨ	Hardening (27c)
SR	[ʦɨ]	

The adjectivizing suffix, a high front vowel, facilitates the application of Coronal Palatalization and the accompanying rules. After a WFR has added the masc.nom.sg. suffix, a sequence of two vowels appears, leading to Gliding, followed by *j*-Deletion and Stridency Spell-out. Hardening applies in the postcyclic component, yielding the desired surface form *kòcy* [ʦ+ɨ] ‘cat’.

4.9.3.1. Denominal adjectives in level phonology

Returning to the discussion of the scenario allowing derivational levels in the system of Kashubian, denominal adjectives such as *kòcy* [ʦ+ɨ] ‘cat’ (masc.nom.sg.) fit perfectly into the proposed architecture, as shown in (70).

(70) Derivation of the adjective *kòcy* ‘cat’ – levels

UR	kò//t+i+i̶//	
Level 1	t+i	WFR Adj. //-i//
	t’+i	Coronal Palatalization (27a)
	t’+i+i̶	WFR masc.nom.sg. //-i̶//
	t’+j+i̶	Gliding (68a)
	t’+i̶	*j*-Deletion (68b)
Postcyclic	t’+i̶	
	ʦ’+i̶	Stridency Spell-out (27b)
	ʦ+i̶	Hardening (27c)
SR	[ʦi̶]	

The adjectivizing suffix enters the lexicon at level 1 and triggers Coronal Palatalization. The WFR rule, adding the masc.nom.sg. //i̶//, feeds Gliding and *j*-Deletion. Hardening in the postcyclic component generate the correct output.

Accounting for the feminine denominal adjective unveils a complication: Gliding and *j*-Deletion cannot be assigned to a single level only as they operate in both masculine and feminine adjectives, and feminine adjectives are derived at level 2. Restricting Gliding and *j*-Deletion to level 1 would render them inapplicable in the feminine derivation. The operation of the rules must be modified. Gliding and *j*-Deletion should apply not only at level 1 but also at level 2, as shown below.

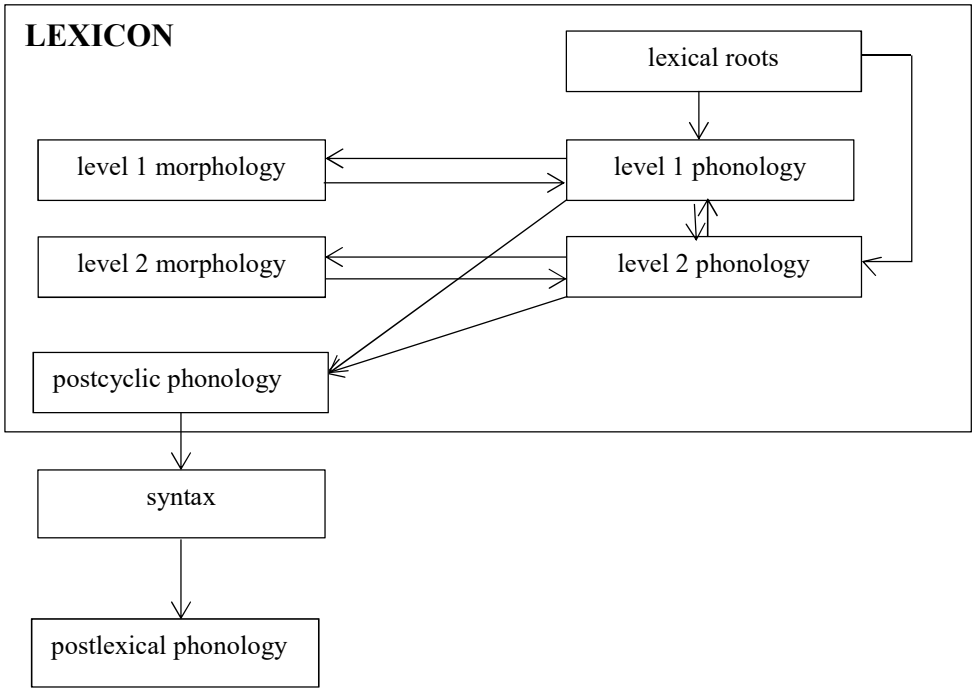
(71) Derivation of the adjective *kòcô* ‘cat’ (fem.) – levels

UR	kò//t+i+i̶//	
Level 1	t+i	WFR Adj. //-i//
	t’+i	Coronal Palatalization (27a)
Level 2	t’+i	
	t’+i+i̶	WFR fem.nom.sg. //-i̶//
	t’+j+i̶	Gliding (68a)
	t’+i̶	*j*-Deletion (68b)
Postcyclic	t’+i̶	
	ʦ’+i̶	Stridency Spell-out (12b)
	ʦ+i̶	Hardening (27b)
SR	[ʦi̶]	

The adjectivizing morpheme enters at level 1 and triggers Coronal Palatalization. The lexeme, already as an adjective, enters level 2, where the fem.nom.sg. marker is added, creating a sequence of two adjacent vowels. This triggers Gliding and *j*-Deletion, initially restricted to level 1. Next, Stridency Spell-out and Hardening apply, deriving the correct output.

The classic model of Lexical Phonology needs to be modified. The modified model looks as follows (72). It will be recalled (see Section 4.9.3.1) that Booij and Rubach (1987) assume that rules are assigned to levels, with one rule operating only at one level. The Kashubian analysis developed here shows that the same rules (here Gliding and *j*-Deletion) need to operate at both level 1 and level 2.

(72) Modified Lexical Phonology model – operation of one rule at more than one level



The level scenario works, albeit at a huge price. An additional level has to be built into the system, in order to solve the conundrum of the masculine and the feminine forms of adjectives. What is more, as noted, the above assumption that a rule can apply at more than one level runs counter to the assumptions of Lexical Phonology's architecture made in Booij and Rubach (1987) and Rubach (2008b).

4.10. Conclusion

This chapter has argued that Kashubian, like many other Slavic languages, has a productive process of Coronal Palatalization. The process is opaque, as the surface forms, [ʦ ʣ], being the product of palatalization and accompanying processes are hard, that is [+back]. This is unexpected because palatalization is by definition a softening process, spreading the [−back] feature from the vowel to the consonant. The opacity is caused by Hardening, which eliminates all soft coronals from the system, irrespective of the context.

Due to the nature of opacity, i.e. the change of hard coronals into soft coronals, and then again into hard coronals, the process has been argued to be a case of a Duke of York gambit. In addition, the stridents //s z// have been argued to be part of the input to Coronal Palatalization, side by side with //t d n//.

The data have also called for a re-analysis of the postulated rule of Velar Palatalization in order to distinguish it from Velar Softening, as the outputs of both rules are different. Section 4.9.1.2 has argued that Velar Palatalization is induced by //i e ɛ// and is accompanied by Spirantization, operating on /ʤ'/, the output of Velar Palatalization. The processes account for words such as *wôżec* [ʒ'+ɛ] 'to weigh' and *straszëc* [ʃ'+ɛ] 'to haunt'. In contrast, Velar Softening applies solely to underlying //k g// and is triggered by //i// only. It is not followed by Spirantization and hence produces outputs such as *drodżi* [ʤ'+i] 'expensive' and *taczi* [ʧ'+i] 'such'.

The different behaviour of masculine and feminine adjectives has highlighted the need to modify the assumptions of Lexical Phonology. Three scenarios were analysed: different underlying representations of the masculine and the feminine endings, allomorphy in the UR, and levels.

The first scenario (Sections 4.9.1.1 and 4.9.1.3) assumed //-i// as the UR of the masculine ending of adjectives and investigated the potential of Vowel Retraction as the blocker of Coronal Palatalization in coronal-stem adjectives. The analysis failed and was rejected.

The second scenario assumed underlying allomorphs of the masc.nom.sg. marker of adjectives (Section 4.9.1.4). It has been argued that soft stems and [k g] stems take //-i// as the masc. marker, whereas the other stems take //-ɨ//. The allomorphy analysis accounts for adjectives such as *drodżi* [ʤ'+i] 'expensive' and *krótczi* [ʧ'+i] 'short' with the underlying stem final velars palatalized, as well as *bògati* 'rich' [t+ɨ] and *młodi* 'young' [d+ɨ] without the

palatalized coronal. The problem with this analysis is that postulating allomorphs is arbitrary and hence not optimal, so another solution has been explored.

The third scenario assumed that Kashubian has two derivational levels (Section 4.9.1.5). Lexical items entering the lexicon undergo a series of morphological and phonological operations grouped in levels. Word formation rules are assigned to levels. Crucially, Velar Fronting is assigned to level 2. Word-formation rules carrying noun and verb derivation enter the lexicon at level 1. The key assumption is that the feminine adjectival suffix //-ɨ// in words such as *drogô* [g+ɨ] 'expensive', is added at level 2. In this way, feminine adjectives escape Velar Softening. Velar Softening is active on level 1, so the system produces the desired outputs of masculine velar-stem adjectives such as *drodżi* [ʤ'+i] 'rich'. The masc.nom.sg. ending and the fem.noms.sg. ending of adjectives are homophonous and are represented as //-ɨ//.

The third scenario works on the condition that the model of Lexical Phonology is modified by adding the option that a single rule may belong to more than one level. Without this modification, the system would have produced the wrong result in denominal adjectives, such as *kòcy* [ʦ+ɨ] 'cat' (masc.) and *kòcô* [ʦ+ɨ] (fem.). The modification runs counter to the assumptions made by Booij and Rubach (1987) and Rubach (2008b) and as such requires further investigation.

Neither of the two proposed solutions is fully satisfactory. Postulating allomorphs in the system unnecessarily expands the lexicon and increases arbitrariness of underlying representations. On the other hand, building in an additional derivational level into the cyclic component significantly increases the complexity of the rule system. The next chapter explores the possibility of accounting for the opacity in Kashubian by assuming the framework of Optimality Theory.

Chapter 5

Palatalization Processes in Kashubian: Optimality Theory

This chapter attempts at an analysis of palatalization processes in Kashubian from the perspective of Optimality Theory. Due to the complexity of basic generalizations, the analysis is divided not only with respect to the inputs to the changes (velars and coronals) but also with respect to the constraints that are the drivers of the change (PAL-*i* and PAL-*e*). Only [k g] and [t d] are investigated in detail. Velars are argued to undergo palatalization: *k g x* → *ʧ' ʤ' ʃ'* with the palatalization of //g// being accompanied by Spirantization to [ʒ'] in some instances. This constitutes a sequence of changes *g* → *ʤ'* → *ʒ'*. Coronals //t d// are argued to undergo palatalization to /ʦ' ʣ'/, accompanied by hardening to [ʦ ʣ]. The gathered data support the theoretic assumption that evaluation should take place at more than one level, because classic Optimality Theory is unable to handle chain processes. Hence, Derivational Optimality Theory, the framework advocated by Kiparsky (1997, 2008) and Rubach (1997, 2000a, 2000b), is used in the analysis.

5.1. Mechanics of palatalization in Optimality Theory

Optimality Theory (Prince and Smolensky 2004, McCarthy and Prince 1995) differs radically from Lexical Phonology in three assumptions. First, in OT, phonological generalizations, expressed as constraints rather than as rules, are universal. In Lexical Phonology and its predecessors, rules were language-specific. How a word is pronounced depends on the interaction between the constraints. It is this constraint interaction, i.e. the constraint hierarchy, that is language specific. The second assumption distinguishing Optimality Theory from Lexical Phonology is that all evaluation takes place in a parallel manner and not in a sequence of derivations. This mode of processing is called strict parallelism. The third radical

difference between the theories is that rules utilised in Lexical Phonology contain the prescription on how a segment should change in a certain context, whereas constraints in Optimality Theory merely prohibit or promote certain structures. They do not say how a certain constraint requirement should be achieved and languages may satisfy these requirements in different ways. That is, Optimality Theory divorces structural description from structural change.

Constraints in Optimality Theory are of two kinds: markedness and faithfulness. Markedness constraints ban or promote certain structures as marked or unmarked, respectively. Faithfulness constraints require that there be no or minimal difference between the input to and the output of the evaluation. All constraints are violable. The optimal output of an evaluation is the candidate which incurs the least costly constraint violations.

5.1.1. Basic generalizations

Kashubian has a rich system of consonants which consists in the distinction of 'hard' and 'soft' consonants. Hard consonants are pronounced with the tongue body low and flat, as in the position as for the back vowel [a], and not raised towards the velum. In contrast, the tongue body in the pronunciation of soft consonants is raised towards the palate, assuming the position typical for front vowels (Wierzchowska 1963, 1971). Thus, hard consonants can be described as [+back] and soft consonants – as [−back]. The table below shows the fragment of the surface consonantal inventory relevant for the discussion to follow. For reasons of brevity, only voiceless obstruents are listed, with a note that [x] has a voiced counterpart restricted only to certain word positions (Jocz 2014) and should be understood as an allophone in the traditional classification. According to the Sagey–Halle model of Feature Geometry (Sagey 1986, Halle 1992), the features [±anterior] and [±strident] depend on the Coronal node, so they do not apply to dorsals.

(1) Surface coronal and dorsal consonants in Kashubian

	CORONAL							DORSAL	
	t	s	n	ʦ	ʃ’	ʧ’	ɲ	k	x
back	+	+	+	+	−	−	−	+	+
continuant	−	+	−	−	+	+	−	−	+
anterior	+	+	+	+	−	−	−		
strident	−	+	−	+	+	+	−		
nasal	−	−	+	−	−	−	+	−	−

For an analysis of Kashubian palatalization processes, crucial is the following observation: there is no symmetry in the distribution of the [±back] feature. Hard dentals [t d s z ʦ ʣ n] have no [−back] counterparts. On the other hand, soft postalveolars [ʧ’ ʤ’ ʃ’ ʒ’] have no [+back] counterparts.[33] To sum up, anteriors are hard while posteriors are soft.

5.1.2. Palatalization as fronting of the consonant

Palatalization as a process and its analysis in OT are best illustrated by looking at Russian. Palatalization here is transparent, as shown by the verb formation in (2). The addition of the verbalizing morpheme //-i// activates Surface Palatalization.

[33] The only exception is the hard variant of the voiced [ʒ’] in the surface inventory, as in e.g. *morze* [muɛʒɛ] ‘sea’ – *może* [muɛʒ’ɛ] ‘maybe’ (adv.). The contrast is not perfect as the fricative in *morze* is retroflex (Jocz 2014) while the one in *może* is not. Hard [ʒ] derives historically from *r*.

(2) Verb formation in Russian

N	*gloss*	*V*	*gloss*
otve<u>t</u> [t]	‘answer’	otve<u>t+i</u>+t’ [t’i]	‘to answer’
v+ho<u>d</u> [t]	‘entrance’	v+ho<u>d+i</u>+t’[d’i]	‘to enter’
golo<u>s</u> [s]	‘voice’	golo<u>s+i</u>+t’ [s’i]	‘to voice’
moro<u>z</u> [s]	‘frost’	za+moro<u>z+i</u>+t’ [z’i]	‘to frost’
že<u>n+a</u> [na]	‘wife’	že<u>n+i</u>+t’ [n’i]	‘to marry’

The examples show that [+back] consonants alternate with their [−back] correspondents. The high front vowel [i] constitutes the context of the change. Here, palatalization does not encompass any additional changes. The place and manner of articulation are the same in both the input and the output. The alternations can be summarized schematically as in (3).

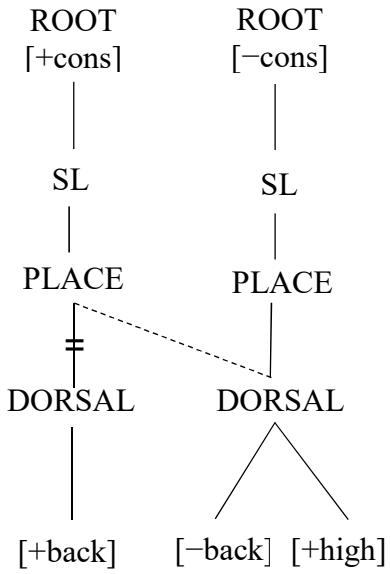
(3) Surface Palatalization in Russian

t d s z → t’ d’ s’ z’ / — i

The analysis of palatalization from the perspective of Feature Geometry (Sagey 1986, Halle 1992) presented in Chapter 4 has shown that general palatalization, i.e. palatalization triggered by /i e ɛ/, consists in ‘spreading *cum* delinking’ of the [−back] feature from the vowel to the preceding consonant.

Palatalization before /i/, as in the case of *otvetit’* [t’+i] ‘to answer’, apart from [−back], involves also the spreading of the feature [+high].

(4) Palatalization *C* → *C'* / — *i* in the Sagey–Halle model of Feature Geometry:



As already noted, palatalization before /i/ consists in the spreading of the features [−back] and [+high], as both of these features describe palatalized consonants and both of them are to be found in /i/, the trigger of the process. The features [−back] and [+high] are dependents of the Dorsal node, hence it is Dorsal that is spread onto the preceding consonant. The Dorsal node of the consonant with the [+back] feature is automatically delinked.

5.1.3. Palatalization constraints

In terms of Optimality Theory, palatalization in Slavic languages is driven by markedness constraints specified with regard to the trigger (Rubach 2000b).

(5) PAL constraints:

a. PAL-*i* A consonant and a following high vowel must agree in [±back].

b. PAL-*e* A consonant and a following mid vowel must agree in [±back].

c. PAL-Glide A consonant and a following glide must agree in [±back].

Palatalization processes are not classified with respect to the input or the changes they evoke,

but rather with respect to the context. According to Chen's (1973) implicational generalization of palatalization triggers, constraints (5a–c) are as follows: PAL-Glide ⊃ PAL-*i* ⊃ PAL-*e*. The high front vowel /i/ triggers different changes from the mid-front /ɛ/ or /j/. The processes are thus divided along an axis different from the one in rule-based phonology. In this chapter, I will focus on Palatalization-*i* and Palatalization-*e*[34].

As is standard in OT, markedness constraints are controlled by respective faithfulness constraints. For palatalization, these are as follows (Rubach 2017).

(6) Faithfulness constraints:

a. IDENT-$C_{[+back]}$ [+back] on the input consonant must be preserved as [+back] on an output correspondent of that consonant.

b. IDENT-$C_{[−back]}$ [−back] on the input consonant must be preserved as [−back] on an output correspondent of that consonant.

c. IDENT-$V_{[+back]}$ [+back] on the input vowel must be preserved as [+back] on an output correspondent of that vowel.

d. IDENT-$V_{[−back]}$ [−back] on the input vowel must be preserved as [−back] on an output correspondent of that vowel.

Palatalization *t* → *t'*, as in *otvet – otvetit'* (N–V) 'answer', violates constraint (6a), because a hard consonant is turned into a soft one. Since this is the desired output, the PAL-*i* constraint must be ranked higher than IDENT-$C_{[+back]}$. Tableau (7) summarizes the reasoning so far. The pointing finger ☞ indicates the winner and the pointing finger ☜ indicates the unintended winner. The sad face ☹ identifies the desired winner.

[34] I will use the constraint PAL-*e* to denote palatalization triggered by /ɛ/

(7) //t+i// → [t'i]: failed evaluation

//t+i//	PAL-*i*	IDENT-$C_{[+back]}$
a. ti	∗!	
☹ b. t'i		∗
☜ c. t̠i		

Candidate (7a) violates fatally PAL-*i* and is excluded from the battle. However, the desired candidate (7b) is not the winner. Candidate (7c) with the retracted vowel satisfies both PAL-*i* and IDENT-$C_{[+back]}$, and hence wins. The ranking produces the wrong result. The evaluation is repaired by bringing in IDENT-$V_{[-back]}$, which penalizes *i* → *i̠*.

(8) //t+i// → [t'i]

//t+i//	PAL-*i*	IDENT-$V_{[-back]}$	IDENT-$C_{[+back]}$
a. ti	∗!		
☞ b. t'i			∗
c. t̠i		∗!	

The crucial rankings in (8) are: PAL-*i* >> IDENT-$C_{[+back]}$ and at the same time IDENT-$V_{[-back]}$ >> IDENT-$C_{[+back]}$. The winning candidate is (8c), which is the attested surface form: with palatalized [t'] followed by [i].

If the ranking was reversed and IDENT-$C_{[+back]}$ dominated IDENT-$V_{[-back]}$, a different output would be derived, as (9) demonstrates.

(9) //t+i// → [tɨ]

//t+i//	PAL-*i*	IDENT-$C_{[+back]}$	IDENT-$V_{[-back]}$
a. ti	∗!		
b. t'i		∗!	
☞ c. tɨ			∗

With the ranking IDENT-$C_{[+back]}$ >> IDENT-$V_{[-back]}$, the strategy to satisfy PAL-*i* is to retract the vowel. Preserving the back consonant without changing the [−back] feature on the vowel in (9a) results in a fatal violation of PAL-*i*, forcing agreement in backness between the consonant and the following vowel. Candidate (9c), [tɨ], is the optimal output.

To conclude, palatalization constraints in OT encompass not only the fronting of consonants but also the retraction of vowels. PAL constraints are the drivers of the changes and occupy an undominated position in the fragment of the grammar related to palatalization. Rankings of faithfulness constraints controlling PAL decide on the optimal output.

5.2. Palatalization of velars

This section focuses on the palatalization process affecting Kashubian //k g x//. The analysis is conducted separately for the instances where //ɛ// is the trigger and the instances where //i// is the trigger. Section 5.2.1 considers PAL-*e* and introduces the following constraints: STRIDENCY, POSTERIORITY, the constraints banning soft dorsals, and SPIRANTIZATION. PAL-*i* is described in Section 5.3. The section accounts for the absence of Spirantization in adjectives and introduces Derivational Optimality Theory. The motivation for Derivational Optimality Theory is drawn from the behaviour of velars in adjectives. Further, the section establishes the underlying representation of the verbalizing morpheme and revises the analysis proposed for infinitives. Section 5.4 presents the conclusions.

5.2.1. Palatalization-*e*

Let us recall Kashubian denominal verbs and their verbalizing morpheme which is the trigger of Velar Palatalization. As a result of the change, //k g x// are fronted to soft [ʧʼ ʤʼ ʃʼ].[35]

(10) Verb formation in Kashubian

Noun	*gloss*	*Verb*	*gloss*
wrzesk [k]	'shout'	wrzeszcz+e+c [ʧʼɛ]	'to shout'
strach [x]	'fear'	strasz+ë+c [ʃʼɛ]	'to haunt'
krok [k]	'step'	krocz+ë+c [ʧʼɛ]	'to step'

Palatalization makes velars change their primary place of articulation from dorsal to coronal. Since the outputs are coronals, the following faithfulness constraint is violated.

(11) IDENT-Dors: DORSAL on an input segment must be preserved as DORSAL on an output correspondent of that segment.

IDENT-Dors must be ranked low in the hierarchy or else Velar Palatalization would never have an effect. The word *wrzeszczec* [ʧʼ+ɛ] 'to shout' is now evaluated as follows. As before, the pointing finger ☞ indicates the unintended winner. The sad face ☹ identifies the desired winner that has lost in the evaluation.

[35] I am postponing the analysis of the change of *g → ʤ'* and the accompanying Spirantization to *ʒ'* to the later sections of this chapter.

(12) //k+ɛ// → [ʧ’ɛ]: failed evaluation

//k+ɛ//[36]	PAL-*e*	IDENT-$C_{[+back]}$	IDENT-Dors
a. kɛ	∗!		
☜ b. k’ɛ		∗	
☹ c. ʧ’ɛ		∗	∗!

Candidate (12a), fully faithful to the input, is eliminated from the competition because it violates PAL-*e*. Candidate (12c), the desired output, is also *horse de combat*, as it incurs violations of two lower-ranked constraints which add up to a fatal violation. Candidate (12b) with soft [k’], which is a palatalized consonant without the changed place and manner of articulation, violates only IDENT-$C_{[+back]}$, and hence wins, yielding the wrong result.

In order to capture the change and assure that the desired candidate wins the battle, more specific constraints than the ones introduced in Section 5.1.3 and above are needed.

5.2.2. Ban on soft dorsals

In order to eliminate palatalized [k’], the system needs a constraint banning soft [k’ g’ x’], originally introduced by Zubritskaya (1995).

(13) *Soft Dorsals (*SOFT-Dors) No [−back] dorsals.

By prohibiting [k’ g’ x’] from the system, *SOFT-Dors forces a change in the place of articulation, as shown in (14).

[36] I am postponing the discussion on the actual shape of the verbalizing morpheme till Section 5.3.8, in order not to blur the arguments presented here.

(14) //k+ɛ// → [ʧ’ɛ]: operation of *SOFT-Dors

//k+ɛ//	PAL-*e*	*SOFT-Dors	IDENT-C$_{[+back]}$	IDENT-Dors
a. kɛ	*!			
b. k’ɛ		*!	*	
☞ c. ʧ’ɛ			*	*

The ranking of PAL-*e* and *SOFT-Dors high in the constraint hierarchy eliminates all dorsal candidates. PAL-*e* excludes [kɛ], with the unchanged velar. *SOFT-Dors eliminates [k’ɛ], with a palatalized velar. As a result, the only option to satisfy PAL-*e* is to change the manner and the place of articulation, the effect being that dorsals become coronals.[37]

The situation becomes more complicated if we add soft [t’] to the candidate list. A palatalized stop should be preferred by the system as it is universally less marked than a palatalized affricate.

(15) //k+ɛ// → [ʧ’ɛ]: inconclusive evaluation

//k+ɛ//	PAL-*e*	*SOFT-Dors	IDENT-C$_{[+back]}$	IDENT-Dors
☜ a. ʧ’ɛ			*	*
☜ b. t’ɛ			*	*

The evaluation is inconclusive because the candidates stand in a tie. The evaluation is repaired by adding a constraint favouring affricates, as I explain in the following section.

5.2.3. Stridency

The generalization that the outputs of Velar Palatalization are [+strident] coronals is captured

[37] Coronals are preferred to labials, a generalization that follows from Prince and Smolensky’s (2004) markedness universal *LAB > *CORON.

by STRIDENCY, a constraint first postulated by Rubach (2003b).

(16) Stridency (STRID) Palatalized coronals must be [+strid].[38]

In order for the outputs to become [+strid], the constraint must be ranked high in the hierarchy. The tableau for *wrzeszczec* [ʧ'+ɛ] 'to shout', including the postulated constraint, is shown in (17). *SOFT-Dors is omitted as it is mute in the battle between the proposed candidates.

(17) //k+ɛ// → [ʧ'ɛ]: operation of STRIDENCY

//k+ɛ//	PAL-*e*	STRID	IDENT-$C_{[+back]}$	IDENT-Dors
☞ a. ʧ'ɛ			*	*
b. t'ɛ		*!	*	*

The introduction of STRIDENCY eliminates candidate (17b) with palatalized non-strident [t']. The desired output wins, so the system works correctly.

A further complication comes to sight when we add [ʦ'] as a candidate.

(18) //k+ɛ// → [ʧ'ɛ]: inconclusive evaluation

//k+ɛ//	PAL-*e*	STRID	IDENT-$C_{[+back]}$	IDENT-Dors
☜ a. ʧ'ɛ			*	*
☜ b. ʦ'ɛ			*	*

Both [ʧ'] and [ʦ'] belong to the class of stridents, so they both satisfy STRID. The result is that

[38] This constraint theoretically applies also to soft coronal [ɲ], as, for example, in the word *kòń* [ɲ] 'horse'. However, the larger generalization is that sonorants can never be [+strid] because they would lose their status as sonorants. I assume that there is a constraint on GEN prohibiting strident sonorants, that is, GEN does not submit such candidates.

there is a tie between the desired candidate (18a), and the unattested candidate (18b), with palatalized [ʦ’].

5.2.4. Posteriority

The examples in (10), such as *wrzeszczec* [ʧ’+ɛ] ‘to shout’ or *straszëc* [ʃ’+ɛ] ‘to haunt’, show that the outputs of palatalization change their place of articulation from velar to postalveolar. The output postalveolars are [−anterior]. Indeed, the feature distinguishing [ʦ’], the undesired candidate in tableau (18) above, from [ʧ’], attested in *wrzeszczec* ‘to shout’, is anteriority: [ʦ’] is [+anterior] while [ʧ’] is [−anterior]. Anteriority is the only feature distinguishing these two sounds. The generalization is captured by a constraint called POSTERIORITY (Rubach: 2003b).

(19) Posteriority (POSTERIOR) Palatalized coronals must be [−anterior].

The battle between candidate (20a) with [ʧ’ɛ] and (20b) with [ʦ’ɛ] now looks as follows.

(20) //k+ɛ// → [ʧ’ɛ]: operation of POSTERIORITY

//k+ɛ//	PAL-*e*	STRID	POSTERIOR	IDENT-$C_{[+back]}$	IDENT-Dors
☞ a. ʧ’ɛ				*	*
b. ʦ’ɛ			*!	*	*

Candidate (20b) fatally violates POSTERIOR. The desired candidate (20a) wins the battle, so the system of the constraints and their interaction is now complete and generates the correct outputs.

5.2.5. Spirantization

As argued in Chapter 4, palatalization of voiced velars is accompanied by Spirantization. The process is active if the input velar is not preceded by an obstruent. In other words, the system of Kashubian encompasses a chain of derivations: *g* →*ʤ'* → *ʒ'*.[39] The processes are exemplified by the data in (21).

(21) Verb formation in Kashubian – Spirantization

Noun	*gloss*	*Verb*	*gloss*
wôg+a [ga]	'weight'	wôż+ë+c [ʒ'ɛ]	'to weigh'
drog+ô [gɨ]	'expensive' (fem.)	pò+droż+e+c [ʒ'ɛ]	'to become expensive'
krąg [k]	'circle'	krąż+ë+c [ʒ'ɛ]	'to circle'

In Optimality Theory, Spirantization is expressed by a segment inventory constraint which prohibits [−anterior] affricates (Rubach 2003b).

(22) Spirantization (**ʤ'*) Don't be a voiced non-anterior affricate.

Since SPIRANTIZATION has tangible effects in Kashubian, it must be ranked high in the hierarchy. It crucially must dominate the faithfulness constraint militating against its effects, namely IDENT$_{[-cont]}$.

(23) IDENT$_{[-cont]}$ [−continuant] on the input segment must be preserved as [−continuant] on an output correspondent of that segment.

[39] As noted by Łubowicz (2003), Spirantization of the derived [ʤ'] preceded by [ʒ'], as e.g. in *mùżdżk* 'brain' (dim.), is blocked by a high-ranked OCP constraint banning geminate [ʒ'ʒ'].

The constraints interact as shown in (24). The example is *wôżëc* [ʒ'+ɛ] 'to weigh'.

(24) //g+ɛ// → [ʒ'ɛ]: operation of SPIRANTIZATION

//g+ɛ//	PAL-*e*	**ʤ'*	IDENT-C$_{[+back]}$	IDENT$_{[-cont]}$
a. ʤ'ɛ		*!	*	
☞ b. ʒ'ɛ			*	*
c. ʒɛ	*!			*

SPIRANTIZATION ranked high in the hierarchy forces the outputs of the palatalization process to become continuants. Candidate (24b) wins, which is the correct result.

The situation appears to become more complex when we look at the data below.

(25) Nouns with [ʤ'] on the surface

Noun	*gloss*
dżungla [ʤ']	'jungle
odżin [ʤ']	'fire'
bridż [ʧ']	'bridge'

The examples in (25) do not exhibit [ʒ'], which is unexpected under the constraint hierarchy in (24). The generalization is that the process is blocked because underlying //ʤ'// does not undergo Spirantization. The constraint is controlled by a segment inventory constraint.

(26) IDENT-*ʤ'* [−continuant] on the input non-anterior affricate must be preserved as [−continuant] on an output correspondence of that affricate.

If IDENT-*ʤ'* is ranked above **ʤ'*, Spirantization is forced on segments other than underlying

//ʤ'//. This is illustrated in tableaux (27i–ii). For compactness, the candidates are limited to those that have a decisive impact. The examples are *Boże* 'God' (voc.sg.), where //g+ɛ// → [ʒ'ɛ], and *bridże* 'bridge' (nom.pl.), where //ʤ'+ɛ// = [ʤ'ɛ] (no change).

(27) //g+ɛ// → [ʒ'ɛ] and //ʤ'+ɛ// → [ʤ'ɛ]: interaction of SPIRANTIZATION and IDENT-*ʤ'*

i.

//g+ɛ//	IDENT-*ʤ'*	**ʤ'*	IDENT$_{[-cont]}$
a. ʤ'ɛ		∗!	
☞ b. ʒ'ɛ			∗

ii.

//ʤ'+ɛ//	IDENT-*ʤ'*	**ʤ'*	IDENT$_{[-cont]}$
☞ a. ʤ'ɛ		∗	
b. ʒ'ɛ	∗!		∗

To conclude, Spirantization is active with respect to segments other than underlying //ʤ'//.

5.2.6. Palatalization-e – constraint ranking

The ranking established to account for palatalization processes triggered by //ɛ// and affecting velars puts PAL-*e* in the undominated position as the driver of all the changes. Palatalization forces the "fronting" of consonants rather than the retraction of front vowels, so IDENT-V$_{[-back]}$ >> IDENT-C$_{[+back]}$. The optimal output changes the place of articulation from dorsal to coronal, so IDENT-Dors is ranked low. *SOFT-Dors, STRID, and POSTERIOR are high in the hierarchy. At this point, they are unranked with respect to PAL-*e* and to each other. In sum, the ranking is as follows: PAL-*e*, SOFT-Dors, STRID, POSTERIOR, IDENT-V$_{[-back]}$ >> IDENT-C$_{[+back]}$, IDENT-Dors.

In order for Spirantization to be operational, **ʤ'* must be ranked high in the hierarchy,

specifically, above IDENT$_{[-cont]}$. Underlying //dʒ'// escapes Spirantization, due to the ranking IDENT-*dʒ'* >>**dʒ'*.

The total ranking is therefore as in (28).

(28) Hierarchy ranking for PAL-*e*

PAL-*e*, *SOFT-Dors, STRID, POSTERIOR, IDENT-V$_{[-back]}$, IDENT-*dʒ'* >> **dʒ'* >> IDENT-C$_{[+back]}$, IDENT-Dors, IDENT$_{[-cont]}$

5.3. Palatalization-*i*

This section focuses on PAL-*i* affecting velars. Contrary to PAL-*e*, always accompanied by Spirantization, as in *Bóg – Boże* 'God', the output of evaluation with PAL-*i* as the driver remains [−continuant]: *g* → *dʒ'*, as in e.g. *drodzi* 'expensive' (masc.). Different effects of PAL-*i* and PAL-*e* make it impossible to evaluate the changes in a parallel manner. Standard OT needs to be modified, as I argue later in this section.

5.3.1. Data

Palatalization in the context of //i// is transparent in the case of masculine adjectives, as exemplified below.

(29) Masc. and fem. velar-stem adjectives

	masc.nom.sg.	*fem.nom.sg.*	*gloss*
a.	drodż+i [ʤ’i]	drog+ô [gɨ]	‘expensive’
	dłudż+i [ʤ’i]	dług+ô [gɨ]	‘long’
	cencz+i [ʧ’i]	cenk+ô [kɨ]	‘thin’
	dzëcz+i [ʧ’i]	dzëk+ô [kɨ]	‘wild’
	lëdzcz+i [ʧ’i]	lëdzk+ô [kɨ]	‘human’
b.	lëch+y [xɨ]	lëch+ô [xɨ]	‘bad’
	cëch+y [xɨ]	cëch+ô [xɨ]	‘quiet’
	głëch+y [xɨ]	głëch+ô [xɨ]	‘deaf’

Two observations need to be made with regard to these data. First, the palatalization of the voiced velar is not accompanied by Spirantization to [ʒ’]: the surface form of *drodży* ‘expensive’ (masc.nom.sg.) is [drɔʤ’i] and not *[drɔʒ’i]. Second, Velar Palatalization is transparent in the case of masculine adjectives whose stems end with //k g//. Velar [k g] alternate with [ʧ’ ʤ’] but //x// remains unchanged. I will attempt at an analysis of these two issues in the following sections.

5.3.2. Absence of Spirantization: failed evaluation

As argued in Chapter 4, masculine and feminine adjectives have //ɨ// as their underlying adjectival endings.[40] The [ɨ] appears transparently on the surface if stems end in other consonants than velar stops, as shown in (30).

[40] I will address the issue of the underlying representation of the masculine and feminine endings later in this chapter.

(30) Masc. and fem. adjectives with stem-final consonants other than [k g]

masc.nom.sg.	*fem.nom.sg.*	*gloss*
bògat+i [tɨ]	bògat+ô [tɨ]	‘rich’
młod+i [dɨ]	młod+ô [dɨ]	‘young’
ostatn+y [nɨ]	ostatn+ô [nɨ]	‘last’
grëb+i [bɨ]	grëb+ô [bɨ]	‘fat’
głup+i [pɨ]	głup+ô [pɨ]	‘stupid’
lëch+y [xɨ]	lëch+ô [xɨ]	‘bad’

Stems ending with velar stops front the //ɨ//, which surfaces as [i], as in *drodżi* ‘expensive’ (masc.nom.sg.), where //g+ɨ// → [ʤ’+i].

Let us look at the behaviour of possible candidates with respect to the input //drɔg+ɨ//, that is, the masculine adjective *drodżi* ‘expensive’, given the ranking of the constraints motivated for PAL-*e*. The constraint PAL-*e* is replaced with PAL-*i* in the tableau below. The other constraints and their ranking remain the same as in the analysis of PAL-*e*.

(31) //g+ɨ// → [ʤ’i]: failed evaluation

//g+ɨ//	PAL-*i*	*ʤ’	*SOFT-DORS	STRID	POSTERIOR	IDENT$_{[-cont]}$
☜ a. gɨ						
b. gi	*!					
c. g’i			*!			
☹ d. ʤ’i		*!				

PAL-*i* and *SOFT-DORS eliminate candidates (31b) and (31c) since the former has a hard consonant before a front vowel while the latter features the prohibited velar [g’]. The key fact is that the constraint **ʤ’*, forcing Spirantization after PAL-*i*, kills the desired candidate (31d),

that is, [drɔʤ’i]. The fully faithful candidate (31a) is the optimal output.

Sequences of a velar followed by a high back vowel constitute a highly marked structure in Slavic languages. This phenomenon is present in e.g. Polish, where underlying //ɨ// of the masc.nom.pl. noun marker is fronted in the context of //k g// (Rubach 2019).

(32) Masc.nom.pl. noun formation in Polish

	nom.sg.	*nom.pl.*	*gloss*
a.	strach [x]	strach+y [xɨ]	‘fear’
	but [t]	but+y [tɨ]	‘shoe’
	grzyb [p]	grzyb+y [bɨ]	‘mushroom’
	dzwon [n]	dzwon+y [nɨ]	‘bell’
b.	bok [k]	bok+i [ki]	‘side’
	próg [k]	prog+i [gi]	‘threshold’
	skok [k]	skok+i [ki]	‘jump’

The plural formation of nouns in (32) appears to take place by adding two different affixes: [ɨ] in set (32a) and [i] in set (32b). A closer analysis shows that the plural case marker can be reduced to a single underlying representation. As argued in Chapter 4, the vowel //ɨ// is the underlying representation for two reasons: first, there is no Velar Palatalization in the presented examples, as //ɨ// is not a front vowel and as such does not trigger the process; second, [ɨ] and [i] are in complementary distribution, a hallmark for reducing the surface forms to a single underlying representation. To conclude, as mentioned earlier, Polish has a process called Velar Fronting: *ɨ → i / k g —*. Velar Fronting is stated as the following constraint (Rubach 2003b):

(33) Velar Fronting (**kɨ gɨ*) No [k g] followed by [ɨ].

Similarly, Velar Fronting is a distributional generalization in Kashubian.[41] The back vowel [ɨ] is fronted to [i] after [k g]. Constraint (33) operates not only in Polish but also in Kashubian, as shown below.

(34) Partial evaluation of *drodżi*: operation of VELAR FRONTING

//g+ɨ//	*kɨ gɨ	PAL-*i*
a. gɨ	∗!	
b. gi		∗

Candidate (34a) with the sequence of a velar followed by [ɨ] incurs a fatal violation of VELAR FRONTING and as such is eliminated from the evaluation. Evaluation (31) accounts for the absence of [ɨ] but does not derive the attested output [ʤ'i]. This is remedied if **ʤ'* is ranked below PAL-*i*. The operation of PAL-*i* will now look as in (35).

(35) //g+ɨ// → [ʤ'i]: operation of PAL-*i*

//g+ɨ//	*kɨ gɨ	PAL-*i*	*SOFT-Dors	**ʤ'*
a. gɨ	∗!			
b. gi		∗!		
c. g'i			∗!	
☞ d. ʤ'i				∗

Candidate (35a) incurs a fatal violation of VELAR FRONTING. Candidate (35b) is eliminated by PAL-*i,* the driver of the process. *SOFT-Dors, prohibiting soft velar [g'], kills candidate (35c). Candidate (35d) violates a lower-ranked constraint and becomes the optimal output, as it incurs the least costly violation.

[41] I will return to the issue of /kɨ gɨ/ sequences in feminine adjectives in Section 5.3.6.

It will be recalled that SPIRANTIZATION is placed in a high position in the ranking in the evaluation of PAL-*e* in order to account for the change /ʤ'/ → [ʒ'] in words such as *Bòże* [ʒ'ɛ] 'God' (voc.sg). As noted earlier, SPIRANTIZATION needs to dominate IDENT$_{[-cont]}$, so as to allow changing the manner of articulation of the velar from [−continuant] to [+continuant]. The problem is that the ranking **ʤ'* >> IDENT$_{[-cont]}$ produces the wrong results for the outputs of PAL-*i*. This is shown in the tableaux below. Only the relevant outputs and the relevant constraints are presented.

(36) Evaluations of *Bòże* 'God' (voc.sg). and *drodżi* 'expensive': ranking paradox

i. //g+ɛ// → [ʒ'ɛ] in *Bòże*

//g+ɛ//	PAL-*e*	**ʤ'*	IDENT$_{[-cont]}$
a. ʤ'ɛ		*!	
☞ b. ʒ'ɛ			*

ii. //g+ɨ// → [ʤ'i]: failed evaluation

//g+ɨ//	PAL-*i*	**ʤ'*	IDENT$_{[-cont]}$
☹ a. ʤ'i		*!	
☜ b. ʒ'i			*

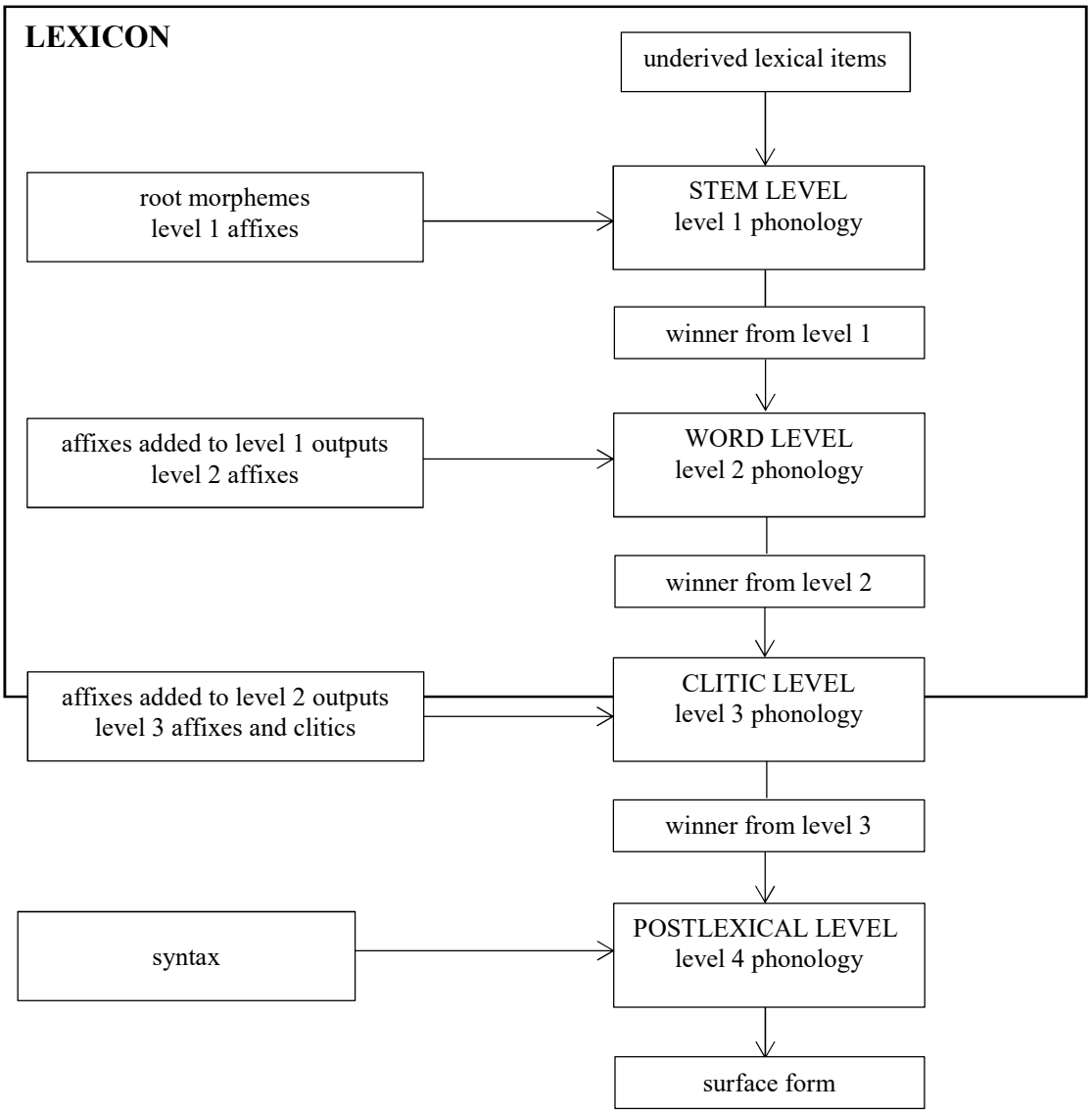
Ranking (36i) yields the correct output for *Bòże*. Candidate (36i–a) is eliminated by Spirantization. The candidate [bueʒ'ɛ] leaves the evaluation as the optimal output. Further, ranking **ʤ'* higher than IDENT$_{[-cont]}$ promotes the output with the continuant in evaluation (36ii). The desired output [drəʤ'i] is eliminated from the evaluation, as it contains the prohibited non-continuant [ʤ']. There is no way of handling this ranking paradox via parallel evaluation.

5.3.3. Derivational levels

The idea that Optimality Theory should not be limited to one derivational level was introduced by Kiparsky (1997, 2000), Rubach (1997, 2000b, 2011), and Bermùdez-Otero (1999). This initial modification developed into a new version of OT that appears under different names: Derivational Optimality Theory (Rubach 1997), LP-OT (Kiparsky 1997), and Stratal OT (McCarthy 1999, Bermùdez-Otero 1999). I shall refer to this version of Optimality Theory as Derivational Optimality Theory (Derivational OT, henceforth). The objective behind Derivational OT is that derivational levels correspond to the lexical and postlexical levels known from Lexical Phonology. Kiparsky (2000) suggests three lexical levels: the stem level, the word level, and the postlexical level. Rubach (2011) adds the clitic level. Thus, Derivational OT has four levels in total with the clitic level located between the word level and the postlexical level. Reranking of constraints is possible between levels, because the same constraint may have different effects on different levels (Rubach 2000a). Reranking of constraints between levels must be minimal and requires motivation (Rubach 2000b).

The second assumption of Derivational OT introduced by Rubach (2019) is that levels are associated with specific classes of affixes. Level 1 comprises the root and level 1 affixes. Level 2 takes the winner from level 1 as its input and adds level 2 affixes. Which affixes belong to which level is a language specific matter. The scheme of levels is presented in the diagram below.

(37) Mechanics of Derivational Optimality Theory[42]



5.3.4. Absence of Spirantization: Derivational OT analysis

The solution to analysing the opacity regarding Spirantization, fed by Velar Palatalization in some instances but not in others, lies with allocating palatalization and spirantization constraints differently in the level hierarchies. I shall assume that SPIRANTIZATION is fully operational on level 1, i.e. it is ranked high in the constraint hierarchy, while on level 2 it is inert, i.e. it is muted by the reranked IDENT$_{[-cont]}$. All of the velars forced to undergo Velar

[42] This Derivational Optimality Theory diagram has been patterned on the Lexical Phonology diagram presented in Chapter 4. The resemblance is not accidental.

Palatalization on level 1 will at the same time undergo Spirantization, as illustrated by the evaluation of *Bòże* [ʒ'+ɛ] 'God' (voc.sg.) in (38i): *g+ɛ → ʒ'+ɛ*. As SPIRANTIZATION is inert on level 2, PAL-*i* operates here unaccompanied by **dʒ'*, yielding the correct result of *drodżi* [dʒ'+i] 'expensive'.

Let us look again at the ranking paradox presented in evaluation (36), which I repeat here for convenience, and assume this to be the evaluation at level 1 in the framework of Derivational OT.

(38) Level 1: evaluations of *Boże* 'God' (voc.sg.) and *drodżi* 'expensive'

i. //g+ɛ// → [ʒ'ɛ] in *Bòże*

	//g+ɛ//	**ki gi*	PAL-*e*	IDENT-*dʒ'*	**dʒ'*	IDENT$_{[-cont]}$
	a. dʒ'ɛ				*!	
☞	b. ʒ'ɛ					*

ii. //g+i// → [dʒ'i]: failed evaluation

	//g+ i //	**ki gi*	PAL-*i*	IDENT-*dʒ'*	**dʒ'*	IDENT$_{[-cont]}$
☹	c. dʒ'i				*!	
☜	d. ʒ'i					*

As noted earlier, the constraint hierarchy produces the correct result for *Bòże*, but not for the adjective *drodżi*, which leaves level 1 as */drɔʒ'i/. As neither of the inputs contains //dʒ'//, the constraint IDENT-*dʒ'* is mute in the evaluation. It might appear that IDENT-*dʒ'* could help, but this is not the case. IDENT-*dʒ'* protects underlying //dʒ'// and here we have derived /dʒ'/.

With */drɔʒ'i/ as the winner of level 1, there is no way to derive the attested output [drɔdʒ'i] at level 2 because there is nothing in the system of Kashubian that would change /ʒ'/ into [dʒ'].

The ranking paradox concerning Spirantization is solved not just by evoking levels but in a different way. A recent modification of Derivational Optimality Theory in Rubach (2019), as shown in graph (37), allows for level-specific assignment of affixes, so affixes can enter the derivation at level 1, level 2, or at level 3. If an affix enters the derivation at level 2, it is not available for evaluation at an earlier level (Rubach 2019). Let us assume then that the masc.nom.sg. adjectival affix //ɨ// enters the derivation at level 2. Spirantization is active at level 1, but not at level 2. This generalization is expressed as a reranking.

(39) Reranking of the constraints between level 1 and level 2

level 1 *ʤ' >> IDENT$_{[-cont]}$

level 2 IDENT$_{[-cont]}$ >> *ʤ'

The input //drɔg// does not violate any palatalization-related constraints at level 1. Consequently, the stem /drɔg/ enters level 2 unchanged. Now, the adjectival nom.sg. //ɨ// is added to //drɔg//. The analysis works, as shown in (40).

(40) Level 2: /g+ɨ/ → /ʤ'i/ – interaction between IDENT$_{[-cont]}$ and *ʤ'

/g+ɨ/	*kɨ gɨ	PAL-*i*	IDENT-ʤ'	IDENT$_{[-cont]}$	*ʤ'
☞ a. ʤ'i					*
b. ʒ'i				*!	

Spirantization is inactive at level 2 and as such ranked low in the constraint hierarchy. Candidate (40a) violates *ʤ', albeit not fatally. IDENT$_{[-cont]}$ eliminates candidate (40b). Candidate (40a), with a palatalized affricate wins, as predicted by the system.

To conclude, the analysis works if we make two assumptions. First, the masculine suffix //ɨ// is added at level 2 and, second, level 2 exhibits reranking: *ʤ' and IDENT$_{[-cont]}$

switch places as shown in (39). The general conclusion is that Spirantization constitutes an argument for derivational levels in Optimality Theory.

5.3.5. Velar Fronting

Let us return to the issue of the underlying representation of the masculine adjectival ending. Masculine adjectives present a challenge. The data, presented in Chapter 4, are repeated here for convenience.

(41) Masculine adjectives in Kashubian

	masc.nom.sg.	*gloss*
a.	bògat+i [tɨ]	‘rich’
	młod+i [dɨ]	‘young’
	zmiart+i [tɨ]	‘thin’
	ostatn+y [nɨ]	‘last’
b.	grëb+i [bɨ]	‘fat’
	głup+i [pɨ]	‘stupid’
	now+i [vɨ]	‘new’
c.	lëch+y [xɨ]	‘bad’
	cëch+y [xɨ]	‘quiet’
	głëch+y [xɨ]	‘deaf’
d.	drodż+i [ʤ’i]	‘expensive’
	dłudż+i [ʤ’i]	‘long’
	cencz+i [ʧ’i]	‘thin’
	dzëcz+i [ʧ’i]	‘wild’
	lëdzcz+i [ʧ’i]	‘human’

The nom.sg. ending surfaces as [ɨ] in (41a), (41b), and (41c) and as [i] in (41d). The generalization is that [ɨ] appears after coronals, labials and after [x] while [i] occurs after soft stridents. The co-occurrence of [i] and soft stridents suggests that a palatalization process might be active in (41d). Indeed, [ʤ’] and [ʧ’] alternate with [g] and [k] as shown in (42).

(42) Velar-stem adjectives in Kashubian

masc.nom.sg.	*fem.nom.sg.*	*gloss*
drodż+i [ʤ’]	drog+ô [g]	‘expensive’
dłudż+i [ʤ’]	dług+ô [g]	‘long’
cencz+i [ʧ’]	cenk+ô [k]	‘thin’
dzëcz+i [ʧ’]	dzëk+ô [k]	‘wild’
lëdzcz+i [ʧ’]	lëdzk+ô [k]	‘human’

As discussed in Chapter 4, the alternation between [ʧ’ ʤ’] and [k g] clearly shows that the underlying segment is a velar and [ʧ’ ʤ’] must be an effect of palatalization. The masculine ending was established as //ɨ//. The underlying back vowel undergoes fronting in the context of a velar stop. The generalization is known from the phonology of Polish, and has been expressed as Velar Fronting (Rubach 1984).

(43) Velar Fronting (rule-based framework)

ɨ → i / k g —

Velar Fronting feeds Velar Palatalization, so in the rule framework, it has to be ordered before palatalization.

The voiced velar //g// unveils a further complication. As noted in section 5.2.5, /ʤ’/ derived from //g// spirantizes to [ʒ’], as in *wôga* ‘weight’– *wôżëc* ‘to weigh’, where

//g+i+ʦ//[43] → /ʤ'+i+ʦ/ → /ʒ'+i+ʦ/ → [ʒ'+ɛ+ʦ]. The /ʤ'/ exemplified in (41d) that is found in adjectives such as *drodżi* 'expensive' is different: it does not spirantize. The analysis suggested in Section 5.3.4 explains this generalization by assuming that the adjectival endings belong to level 2 and that Spirantization is inactive at level 2.

The evaluation of the masculine adjectives at level 2 now looks as follows.

(44) Level 2: /g+ɨ/ → /ʤ'i/

/g+ɨ/	*~~kɨ~~ ~~gɨ~~	PAL-*i*	*SOFT-Dors	POSTERIOR	IDENT$_{[-cont]}$	*ʤ'	IDENT-V$_{[+back]}$
a. gɨ	*!						
b. gi		*!					*
c. g'i			*!				*
d. ʣ'i				*!			*
☞ e. ʤ'i						*	*
f. ʒ'i					*!		*

Ranking Velar Fronting in an undominated position in the constraint hierarchy ensures that the [+back] vowel is fronted to [i]. PAL-*i* in turn forces the fronting of the consonant. Candidate (44e), the attested output, violates the lower-ranked constraints: SPIRANTIZATION and IDENT-V$_{[+back]}$ that control the effects of VELAR FRONTING. The evaluation gives the correct result.

To conclude, the masc.nom.sg. ending of adjectives is //ɨ// and Velar Fronting is active in the system.

[43] The shape of the verbalizing morpheme is established in Section 4.3.8.

5.3.6. Absence of palatalization in feminine adjectives

A different issue raised by the data in (29) is that the feminine adjectives in set (29a), for example *drogô* [g+ɨ] 'expensive' or *cenkô* [k+ɨ] 'thin', have [k g] followed by the back vowel [ɨ]. Velar Fronting, *ɨ* → *i* after //k g//, does not apply, despite the presence of the triggering context.

As argued for in Chapter 4, the masculine and the feminine adjectival endings are both represented as //ɨ// in the underlying representation. Since the masculine adjectival morpheme enters the evaluation at level 2, the feminine one should also enter evaluation there. The hitherto discussion is summarized in (45). The example is *drogô* [g+ɨ] 'expensive' (fem.nom.sg.).

(45) Level 2: /g+ɨ/ → [gɨ] – failed evaluation of feminine adjective

/g+ɨ/	**kɨ gɨ*	PAL-*i*	*SOFT-Dors	IDENT$_{[-cont]}$	**ʤ'*
☹ a. gɨ	*!				
b. gi		*!			
c. g'i			*!		
☜ d. ʤ'i					*
e. ʒ'i				*!	

The desired output of the feminine adjective is killed by VELAR FRONTING **kɨ gɨ*. The driver of palatalization, PAL-*i*, forces the optimal output to be equal to that of the masculine adjective, which is [ʤ'i], where //g+ɨ// → [ʤ'i]. In sum, the analysis runs into a problem: the masculine suffix //ɨ// causes palatalization //g+ɨ// → [ʤ'i], which the feminine suffix //ɨ// does not cause. The feminine suffix also fails to undergo Velar Fronting: //g+ɨ// surfaces as [gɨ].

I will consider four hypotheses in order to solve the problem raised by evaluation (45).

The first hypothesis is to assume different underlying representations for the masculine and the feminine adjectives. The second hypothesis involves indexing the feminine morpheme with an SPE type of diacritic in order to make it invisible to VELAR FRONTING in the evaluation. The third hypothesis is to index the constraint with the [+feminine] diacritic, which enforces the constraints to have their own diacritics. The fourth hypothesis claims that the masculine and the feminine endings enter evaluation at different levels.

HYPOTHESIS 1

The masculine and the feminine endings have different underlying representations.

In the first hypothesis, the masculine and the feminine endings have different underlying representations. The difficulty lies in the fact that since //ɨ// is established as the UR for the masculine adjective and the vowel is active in palatalization, the UR for the feminine adjective should be different from //ɨ// and, for obvious reasons, also from //i//. The question arises of the kind of vowel that should be postulated in the UR. The morpheme should not trigger palatalization, so it should be [+low] or [+back], or should include both of these features. The vowels available in the Kashubian system suggest posting e.g. //ə// or //a// as the UR of the feminine adjective. However, this analysis cannot work. Posting such vowels in the UR would require braiding additional processes into Kashubian, such as Vowel Raising. It would be hard, if not impossible, to establish the context for these changes, as not all //ə// and //a// should undergo this putative raising. For example, *drogô* [g+ɨ] ‘expensive’ (fem.nom.sg.) would need to undergo *a* → *ɨ*, but this cannot be correct because in *wôga* //g+a// → [ga] ‘weight’, the underlying //a// remains unchanged on the surface. The context of the first and the second vowel is the same: //g//. This hypothesis must be rejected.

HYPOTHESIS 2

The feminine morpheme is an exception to Velar Fronting.

The vowel representing the feminine adjectival morpheme surfaces only as [ɨ] and exhibits no alternations. Let us consider the second hypothesis, namely that //ɨ// is also the underlying representation of the said morpheme. The masculine and the feminine adjectival endings look alike after labial, coronal, and *x*-stems.

(46) Adjectives with stem-final consonants other than [k g]

masc.nom.sg.	*fem.nom.sg.*	*gloss*
głëp+y [pɨ]	głëp+ô [pɨ]	'stupid'
młod+i [dɨ]	młod+ô [dɨ]	'young'
lëch+y [xɨ]	lëch+ô [xɨ]	'bad'

As noted before, the behaviour of the masculine ending //ɨ// and the feminine //ɨ// is radically different after velars: *drodzi* [dʒ'+i] – *drogô* [g+ɨ] 'expensive' (masc.nom.sg – fem.nom.sg.). To account for the absence of Velar Palatalization, in *drogô*, let us assume that the feminine adjectival morpheme is simply an exception to VELAR FRONTING. The simplest way to encode this exceptionality in the grammar is to assume that the underlying representation of the fem.nom.sg. ending is marked with a diacritic exception feature, a mechanism first used in SPE (Chomsky and Halle: 1968). Translated into the technicalities of OT, the morpheme is marked $^{[-\text{Velar Fronting}]}$, so here the feminine morpheme, is invisible to VELAR FRONTING. That is, **kɨ gɨ* would simply not evaluate the combination of //k g// and //ɨ// where //ɨ// is the feminine morpheme. This is visualised in (47), where shading means "not visible for evaluation".

(47) Level 2: /g+ɨ[−VelFront]/ → [gɨ[−VelFront]] (no change)

//g+ɨ[−VelFront]//	PAL-*i*	**kɨ gɨ*	**ʤ'*	IDENT-V[+back]
☞ a. gɨ[−VelFront]				
b. gi[−VelFront]	∗!			∗
c. ʤ'i[−VelFront]			∗!	∗

Candidate (47b) fatally violates PAL-*i*. Candidate (47c), homophonic with the output of the masculine adjective, incurs a fatal violation of **ʤ'*. Candidate (47a) is invisible to VELAR FRONTING and becomes the optimal output. The result is correct.

However, the evaluation will also work if the indexes are employed the other way round. Certain faithfulness constraints can be indexed to certain morphemes (Kraska-Szlenk 1997, Itô and Mester 1999, Pater 2006). The aim of such indexing is to block a process from applying to a given morpheme. Let us assume that the system contains a constraint preserving the feature [+back] on the vowel that is the feminine nom.sg. ending. I shall mark this constraint with the diacritic [+fem]. The constraint sees the candidates and applies only to those that represent the feminine ending of adjectives. The constraint is ranked on an undominated position. This is shown in (48).

(48) Level 2: /g+ɨ/ → [gɨ] (no change)

//g+ɨ//	IDENT-V[+back][+fem]	PAL-*i*	**kɨ gɨ*	**ʤ'*	IDENT-V[+back]
☞ a. gɨ			∗		
b. gi	∗!	∗			∗
d. ʤ'i	∗!			∗	∗

The identity constraint preserving the feature [+back] on a vowel eliminates candidates (48b) and (48c), which contain the front vowel /i/. The evaluation makes the correct prediction.

The hypothesis works. However, postulating an exception to the evaluation by making either the candidates invisible to certain constraints or by indexing faithfulness constraints to specific morphemes in order to block certain processes would constitute a significant change to the assumptions of Optimality Theory. In the first scenario, some morphemes in the underlying representation would have to carry an index in order not to be visible to certain constraints. In the second scenario, faithfulness constraints would have to carry an index in order to see the necessary candidates. If this was true, it might be possible to abandon the assumption that morphemes enter the evaluation at different levels. It would be enough to mark either their URs or the applicable faithfulness constraints with appropriate indices. The viability of the solutions, although generating the correct results, needs further research, which is beyond the scope of this dissertation.

HYPOTHESIS 3

The feminine morpheme is marked with a diacritic index.

The third hypothesis consists in making the feminine ending an exception to VELAR FRONTING and by marking it with diacritic $^{[+\text{feminine}]}$. Thus, the feminine adjectival morpheme is mute on the constraint of VELAR FRONTING, which in turn is marked with the diacritic $^{[-\text{feminine}]}$ (Wolf 2011). The constraint is marked with the diacritic of the opposite value to the candidate. The hypothesis is similar to indexing faithfulness constraints presented in the second scenario of Hypothesis 2. Yet here, because of the opposite values on the candidate and the constraint, the constraint sees only the candidates marked as [−fem]. By the same token, *$gi^{[-\text{fem}]}$ does not see the candidates marked as [+fem] and is non-operational with respect to those candidates. This is shown in tableau (49). Again, shading means "not visible for evaluation".

(49) Level 2: /g+ɨ[+fem]/ → [gɨ[+fem]]

//g+ɨ[+fem]//	PAL-*i*	*gɨ[−fem]	*ʤ’	IDENT-V[+back]
☞ a. gɨ[+fem]				
b. gi[+fem]	∗!			∗
c. ʤ’i[+fem]			∗!	∗

Candidate (49b) fatally violates PAL-*i*. Candidate (49c) with the palatalized velar and fronted vowel violates multiple lower-ranked constraints, which sums up to a fatal violation and the exclusion of the candidate from the evaluation. Candidate (49a), invisible to VELAR FRONTING, violates no higher ranked constraints and leaves the evaluation as the optimal candidate.

The hypothesis just discussed, although producing the desired results, should also be rejected. This is for two reasons. The first reason is that the hypothesis increases the abstractness of the system by a significant degree. In order for the system to work, all other instances of //ɨ// should be marked as either [+feminine] or [−feminine]. In addition, constraints should also have the correspondent diacritic in order to recognize the relevant potential outputs. The system becomes highly complicated.[44] The second reason is that the diacritic [±feminine] has binary values. These diacritics function like phonological features, but they are not grounded in phonology. This constitutes a significant extension of the theory's assumptions.

HYPOTHESIS 4

Masculine and feminine morphemes enter evaluation at different levels.

[44] The phonological use of diacritics and the problems that this approach causes have been discussed by Rubach (2016), who uses yers as an example.

The fourth hypothesis is to assume that the masculine and feminine adjectival endings are homophonous in the underlying representation and are represented as //ɨ//, but that they enter evaluation at different levels. I shall consider this hypothesis in the following section.

5.3.7. Feminine adjectives: level 3

Level 3 was added to the Derivational OT architecture by Rubach (2011). The level is located between the lexical and the postlexical levels. It was postulated to accommodate clitics, but the evaluation at level 3 is not limited to processes taking place at the edge of the clitic phrase. Any structure that has left level 2 goes through level 3, even if no clitics are appended. In other words, the domain of evaluation at level 3 is broader than at level 2 (Rubach 2011).

Let us assume that the feminine nom.sg. marker //ɨ// enters evaluation at level 3, so /drɔg+ɨ/ (fem.nom.sg.) is the input to level 3. The analysis will fall into place if we block the application of VELAR FRONTING. This is implemented by assuming that IDENT-$V_{[+back]}$ now outranks VELAR FRONTING **kɨ gɨ*.

(50) Reranking of constraints between level 2 and level 3

level 2 **kɨ gɨ* >> IDENT-$V_{[+back]}$

level 3 IDENT-$V_{[+back]}$ >> **kɨ gɨ*

The evaluation now runs as in (51).

(51) Level 3: /g+ɨ/ → [gɨ]

/g+ɨ/	IDENT-V$_{[+back]}$	*kɨ gɨ	PAL-*i*	IDENT-C$_{[+back]}$
☞ a. gɨ		*		
b. gi	*!		*	
c. ʤ'i	*!			*

With IDENT-V$_{[+back]}$ ranked as undominated, candidates (51b–c) lose. Candidate (51a), the attested from, wins, as required.

To conclude, the feminine adjectival ending has //ɨ// in the underlying representation and the morpheme enters evaluation at level 3.

5.3.8. Verbalizing morpheme: //i// or //ɛ//?

Let us return to the issue of the underlying representation of the verbalizing morpheme. Recall that the verbalizing morpheme appears in two shapes, namely as [ɛ] and [i], depending on the context, as shown in (52).[45]

(52) Verb formation – surface representations of verbalizing morpheme

	Noun	*gloss*	*Verb*	*gloss*
a.	wrzesk [k]	'shout'	wrzeszcz+e+c [ʧ'ɛ]	'to shout'
	strach [x]	'fear'	straszë+c [ʃ'ɛ]	'to haunt'
	krok [k]	'step'	krocz+ë+c [ʧ'ɛ]	'to step'

[45] The facts of the Kashubian morphology are presented only to the extent necessary for the discussion of palatalization processes.

b.	lep [p]	‘glue-paper’	lep+i+c [pi]	‘to glue’
	dëm [m]	‘smoke’	dëm+i+c [mi]	‘to smoke’
	za+baw+a [va]	‘play’	baw+i+c sã [vi]	‘to play’
c.	zgod+a [da]	‘agreement’	zgodz+ë+c sã [ʣɛ]	‘to agree’
	kòt [t]	‘cat’	o+kòc+ë+c sã [ʦɛ]	‘to kitten’
	wid [t]	‘light’	widz+ë+c [ʣɛ]	‘to see’

These data raise two questions: can the surface representations of the verbalizing morpheme be reduced to a single underlying representation and, if so, then what is the UR of the verbalizing morpheme?

One of the reasons to assume that there is one verbalizing morpheme is that the verbs in (52) belong to one conjugational class, defined as class II that takes the present tense endings [-ɛ̃w̃] and [-iʃ˜] in the 1st and 2nd person singular, respectively (Breza and Treder 1981: 131). Since my speakers pronounced the 1st pers.sg. ending as [-a], I shall transcribe it as such in (53).

(53) Verb conjugation – class II

infinitive	*1st pers.sg.*	*2nd pers.sg.*	*gloss*
wrzeszcz+e+c [ʧ˜ɛ]	wrzeszcz+ã [ʧ˜a]	wrzeszcz+i+sz [ʧ˜i]	‘to shout’
strasz+ë+c [ʃ˜ɛ]	strasz+ã [ʃ˜a]	strasz+i+sz [ʃ˜i]	‘to haunt’
lep+i+c [pi]	lep+i+ã [pja]	lep+i+sz [pi]	‘to glue’
dëm+i+c [mi]	dëm+i+ã [mja]	dëm+i+sz [mi]	‘to smoke’
zgodz+ë+c sã [ʣɛ]	zgodz+ã sã [ʣa]	zgodz+y+sz sã [ʣɨ]	‘to agree’
o+kòc+ë+c sã [ʦɛ]	o+kòc+ ã sã [ʦa]	o+kòc+y+sz sã [ʦɨ]	‘to kitten’

I will consider two hypotheses: first, //ɛ// is the underlying representation and, second,

//i// is the underlying representation. Given underlying //ɛ//, the system needs a rule changing underlying //ɛ// into [i], so as to account for lexemes such as those in (52b). The argument comes from the behaviour of labials. Recall that Kashubian labials are divided into two sets in the underlying representation: hard and soft, but soft labials hardly ever occur in the palatalized form on the surface (Brzostek 2007, Jocz 2013). The examples in (52b), such as *lep – lepic*, have hard stems, i.e. non-palatalized labials in the stem-final position. This is documented by two facts. First, they do not take /-ɛ/ as their plural marker and, second, the labial does not undergo decomposition when followed by a back vowel (Brzostek 2007: 83).

(54) Gen.sg. formation of hard labial stems

nom.sg.	*gen.sg*	*gloss*
le̲p [p]	le̲p+ù [pwɨ]	‘glue’
dë̲m [m]	dë̲m+ù [mwɨ]	‘smoke’
za+ba̲w+a [va]	za+ba̲w+ë [və]	‘play’

I conclude that the examples in (52b) have hard labial stems. This being the case, the rule for (52b) would need to apply after hard labials.

(55) ɛ → i / p b f v m —

The putative rule is contradicted by the data in (56).

(56) Instr.sg. formation of hard labial stems

nom.sg	*instr.sg.*	*gloss*
lep [p]	lep+em [ɛm]	‘glue’
dëm [m]	dëm+em [ɛm]	‘smoke’
chłop [p]	chłop+em [ɛm]	‘man’

The instrumental case marker //-ɛm// added to hard labial stems does not trigger any changes, even though the context for the rule postulated in (55), turning underlying //ɛ// into [i], is met. That is, forms such as **lepim* [lɛp+im] are not attested. I conclude that rule (55) is not a tenable rule.

In order to establish whether the verbalizing morphemes can be subsumed under one underlying representation, let us look at the preterite tense forms of the exemplified verbs.

(57) 3rd person singular preterite formation

	Verb	*3rd person sg. preterite*	*gloss*
a.	wrzeszcz+e+c [ʧʾɛ]	wrzeszcz+i+ł [ʧʾi]	‘to shout’
	strasz+ë+c [ʃʾɛ]	strasz+i+ł [ʃʾi]	‘to haunt’
	krocz+e+c [ʧʾɛ]	krocz+i+ł [ʧʾi]	‘to step’
b.	lep+i+c [pi]	lep+i+ł [pi]	‘to glue’
	dëm+i+c [mi]	dëm+i+ł [mi]	‘to smoke’
	baw+i+c sã [vi]	baw+i+ł sã [vi]	‘to play’
c.	zgodz+ë+c sã [ʣɛ]	zgodz+y+ł sã [ʣɨ]	‘to agree’
	ò+kòc+ë+c sã [ʦɛ]	ò+kòc+y+ł sã [ʦɨ]	‘to kitten’
	widz+ë+c [ʣɛ]	widz+y+ł [ʣɨ]	‘to see’

The verbalizing marker surfaces in the 3rd person sg. form as [i] in (57a–b) and as the [+back]

vowel [ɨ] in (57c). This, however, is fully predictable as was shown by the discussion of Coronal Palatalization presented in the previous chapter. The conclusions of the analysis were that that the outputs of Coronal Palatalization undergo Hardening context-freely and that Kashubian has a rule of Vowel Retraction changing *i* → *ɨ* / *C* —[46]. After hard [ts dz s z] the front vowel //-i// retracts to [ɨ]. The same can be assumed to take place after hard coronals in words such as *zgodzył sã* [dz+ɨ] 'he agreed'. The upshot is that sets (57a), (57b), and (57c) can be subsumed under one category. To conclude, //-i// rather than //-ɛ// is the UR of the verbalizing morpheme in Kashubian.

Given //-i// as the verbalizing morpheme, the system requires a rule changing //i// into [ɛ] in order to account for the surface forms in (57), such as *straszëc* 'to haunt' and *kroczëc* 'to step'. The context for lowering //-i-// to [-ɛ-] is not transparent when looking at the surface forms of the verbs in (52) and (57). The observation is that in (57a), for example, in *straszëc – strasził* 'to haunt', the vowel is lowered after a soft strident. However, in (57c), in words such as *zgodzëc sã – zgodzył sã* 'to agree', the vowel appears to be lowered after a hard strident. Let us assume that Vowel Lowering applies after stridents. However, the context is not yet complete: if the rule applied after stridents, it would produce wrong results, such as **straszeł* [ʃ'+ɛ] and **zgodzeł sã* [dz+ɛ]. The context for the rule must be specified with respect to both the preceding and the following phoneme: Vowel Lowering applies when preceded by a strident and when followed by a strident.

(58) Vowel Lowering (1st approximation)

i → ɛ / [+strid] — [+strid]

It is now clear why we have *i* → *ɛ* in *straszëc* but not in *strasził*: in the latter context on the

[46] The status of Vowel Retraction in Kashubian is unclear. While the data in (57c) argue for Vowel Retraction, the data discussed in Chapter 3 argue against it.

right side is not [+strid].

The version of Vowel Lowering in (58) runs into difficulty with the 2nd person singular forms, such as *wrzeszczisz* [ʧʼ+i+ʃʼ] 'you shout', *straszisz* [ʃʼ+i+ʃʼ] 'you haunt', *kroczisz* [ʧʼ+i+ʃʼ] 'you step': counter to (58), the verbalizing marker surfaces as [i], not as to [ɛ]. A remedy is to restrict the right side of the context to stridents that are [+back].

(59) Vowel Lowering (2nd approximation)

i → ɛ / [+strid] — [+strid, +back]

Now 2nd person singular verbs, such as *wrzeszczisz* [ʧʼ+i+ʃʼ] 'you shout', are excluded because the strident on the right is soft.

(60) Derivation of *wrzeszczec* 'to shout' and *wrzeszczisz* 'you shout': Vowel Lowering

UR	wrzesz//k+i+ʦ//	wrzesz//k+i+ʃʼ//	
	k+i	k+i	WFR verb marker /-i-/
	ʧʼ+i	ʧʼ+i	Velar Palatalization: k → ʧʼ / — i
	ʧʼ+ɛ	-	Vowel Lowering: i → ɛ / ʧʼ — ʦ
SR	[ʧʼɛʦ]	[ʧʼiʃʼ]	

After Velar Palatalization has applied, the verbalizing morpheme /-i-/ lowers to [ɛ] in the infinitive form, as it is followed by a hard strident /ʦ/. In the 2nd person singular, Vowel Lowering does not apply, as the ending is a soft strident /ʃʼ/.

A different solution would be to limit the application Vowel Lowering to infinitives. The rule would then be formulated as in (61).

(61) Vowel Lowering (3rd approximation)

i → ɛ / [+strid] —]$_{infinitive}$

Limiting the rule to the [+strid] context excludes labial stems given in (52a) such as *lepic* [p+i] and *dëmic* [m+i], as labials are not [+strid]. Given the restriction to infinitives, the rule works correctly, because forms such as *wrzeszczisz* are excluded, as desired. I conclude that the data in (57) take //i// as the verbalizing suffix, with [ɛ] as its realization after stridents.

5.3.8.1. Infinitives: reanalysis of palatalization processes

Let us return to the analysis of palatalization processes in infinitives presented in Section 5.2.1. The analysis assumed that //ɛ// is the underlying verbalizing marker in Kashubian in verbs such as *wrzeszczec* [ʧʼ+ɛ] 'to shout', *straszëc* [ʃʼ+ɛ] 'to haunt', and *kroczëc* [ʧʼ+ɛ] 'to step'. However, the conclusion from the preceding section is that the verbalizing suffix is //i//, not //ɛ//. The //i// lowers to [ɛ] in infinitives when preceded by a strident. I will translate the process into the following constraint.

(62) Vowel Lowering (V-LOWER) No stridents followed by [i] in infinitives.

The constraint is controlled by an identity constraint mandating the preservation of the feature [+high] on the vowel in the output. A different identity constraint blocks the shift from //i// to [ɨ].

(63) Vowel identity constraints

a. IDENT-V$_{[+high]}$ [+high] on the input vowel must be preserved as [+high] on an output correspondent of that vowel.

b. IDENT-$V_{[-back]}$ [−back] on the input vowel must be preserved as [−back] on an output correspondent of that vowel.

In order to have an effect, V-LOWER must dominate IDENT-$V_{[+high]}$.

(64) Level 1: //k+i// → /ʧ'ɛ/: operation of VOWEL LOWERING

//k+i//	PAL-*i*	V-LOWER	IDENT-$V_{[-back]}$	IDENT-Dors	IDENT-$V_{[+high]}$
a. ki	∗!				
b. ʧ'i		∗!		∗	
☞ c. ʧ'ɛ				∗	∗
d. ʧɨ	∗!		∗	∗	
e. ʧə			∗!	∗	∗

The fully faithful candidate (64a) violates PAL-*i* and is immediately excluded from the evaluation. Vowel Lowering, high in the hierarchy, excludes candidate (64b) with the unchanged vowel. Candidate (64d), which contains a back vowel followed by a soft consonant, violates fatally PAL-*i*. The constraint PAL-*i* has no jurisdiction over candidate [ʧə] because the vowel is mid, not high. But candidate (64e) violates IDENT-$V_{[-back]}$ and hence is eliminated. The winning candidate violates IDENT-Dors and IDENT-$V_{[+high]}$, but these constraints are ranked low in the hierarchy, so the violations are not fatal.

A further issue is that of the interaction between V-LOWER and SPIRANTIZATION. The question is whether these processes take place on a single level or whether they belong to different levels. Tableau (65) shows the evaluation of *wôżëc* [ʒ'+ɛ] 'to weigh' and includes both V-LOWER and SPIRANTIZATION.

(65) Level 1: //g+i// → /ʒ'ɛ/: interaction of V-LOWER and **ʤ'*

//g+i//	PAL-*i*	V-LOWER	**ʤ'*	IDENT-Dors	IDENT-$V_{[+high]}$	IDENT$_{[-cont]}$
a. ʤ'i		*!	*!	*		
b. ʤ'ɛ			*!	*	*	
c. ʒ'i		*!		*		*
☞ d. ʒ'ɛ				*	*	*

The evaluation gives the correct result. The desired output violates neither V-LOWER nor **ʤ'* and hence wins. The conclusions are that, first, both processes of Vowel Lowering and Spirantization can apply in a parallel manner and, second, the verbalizing morpheme enters evaluation at level 1.

5.4. Partial conclusions

Sections 5.2 and 5.3 demonstrated that the palatalization processes affecting velars are multi-layered and that it is impossible to analyse them successfully adhering to the principle of strict parallelism. Palatalization of velars spans three levels of evaluation.

Velar Palatalization accompanied by Spirantization are the processes dominating level 1. The drivers are PAL-*i* and PAL-*e*, controlled by the identity constraints: IDENT-$C_{[+back]}$ and IDENT-$V_{[+high]}$. The desired output is forced by ranking SOFT-Dors, STRID, and POSTERIOR high in the hierarchy. Spirantization is ensured by **ʤ'* dominating IDENT-$C_{[-cont]}$. At the same time, IDENT-*ʤ'* is ranked high in order to protect underlying //ʤ'// from Spirantization. Thus, IDENT-*ʤ'* >> **ʤ'* >> IDENT-$C_{[-cont]}$. Also Vowel Lowering takes place at level 1, forced by V-LOWER accompanied by IDENT-$V_{[-back]}$.

Level 2 witnesses reranking of the constraints. PAL-*i* and PAL-*e* remain the main force of changes. Spirantization ceases to operate at this level, so **ʤ* is ranked low in the hierarchy.

Palatalization processes are limited to Velar Fronting, ensured by the ranking: PAL-*i*, **kɨ gɨ* >> IDENT-$V_{[+back]}$.

Level 3 faces entering the feminine adjectival suffix. Palatalization is non-operational at this level, with the outputs being fully faithful to the inputs. Velar Softening also ceases to operate at level 3. The ranking is Ident-$V_{[+back]}$ >> Pal-*i* (Pal-*e*), **kɨ gɨ*.

The processes and the rankings are summarized in table (66).

(66) Velar Palatalization – summary

	Active Processes	Constraint Ranking
level 1	– Velar Palatalization – Spirantization – Vowel Lowering	PAL-*i* (PAL-*e*), *SOFT-Dors, STRID, POSTERIOR, V-LOWER, IDENT-$V_{[-back]}$ >> IDENT-*ʤ'* >> **ʤ'* >> IDENT-$C_{[+back]}$, IDENT-Dors, IDENT$_{[-cont]}$, IDENT-$V_{[+high]}$
level 2	– Velar Fronting – Velar Palatalization – no Spirantization	PAL-*i* (PAL-*e*), **kɨ gɨ*, *SOFT-Dors, STRID, POSTERIOR >> IDENT-*ʤ'*, IDENT$_{[-cont]}$ >> IDENT-$V_{[+back]}$, **ʤ*
level 3	– no Velar Fronting – no Palatalization	Ident-$V_{[+back]}$ >> Pal-*i* (Pal-*e*), **kɨ gɨ*

The analysis in the following sections addresses the issue of palatalization processes affecting coronals.

5.5. Coronal Palatalization

This section focuses on palatalization processes to which coronal //t d// are the input. Section 5.5.1 analyses the effects of PAL-*e* and introduces the constraint responsible for hardening:

ʦʼ dzʼ → *ʦ dz*. Section 5.5.2 focuses on the effects of PAL-*i* and the outputs of HARD on level 2, leading ultimately to Vowel Retraction, *i* → *ɨ*. Section 5.5.4 presents partial conclusions. It also answers the question of how it is possible that we witness *t* →*ʦ* in adjectives such as *kòcy* [ʦ+ɨ] 'cat' (Adj.), where the ending is [ɨ], a back vowel. The main point is that the palatalization process affecting coronals constitutes an argument supporting level distinction, as envisaged by the architecture of Derivational Optimality Theory.

5.5.1. Palatalization-*e*

Palatalization processes affecting coronals in Kashubian are similar to those in Polish. PAL-*e* is the driver of the changes in (67). The results are undoubtedly soft , i.e. [−back] consonants.

(67) Operation of PAL-*e* in Polish

nom.sg.	*loc.sg.*	*gloss*
but [t]	buci+e [ʨɛ]	'shoe'
kot [t]	koci+e [ʨɛ]	'cat'
brat [t]	braci+e [ʨɛ]	'brother'
gwiazd+a [da]	gwieździ+e [ʥɛ]	'star'
herbat+a [ta]	herbaci+e [ʨɛ]	'tea'
żakiet [t]	żakieci+e [ʨɛ]	'jacket'
sąsiad [t]	sąsiedzi+e [ʥɛ]	'neighbour'

The data show [t d] alternating with soft [ʨ ʥ]. Although palatalization is obvious, the change *t d* → *ʨ ʥ* is too broad to be done at one step. Rubach (2019) proposes a two-step evaluation of the process based on the architecture of Derivational Optimality Theory. The evaluation scenario is outlined in (68). The example at hand is *bucie* [ʨ+ɛ] 'shoe' (loc.sg.).

(68) Level 1 //t+ ɛ// → /t'ɛ/ IDENT$_{[+anter]}$, IDENT$_{[-strid]}$ >> POSTER, STRID and *tɕ >> *ʧ'[47]

Level 2 /t'+ɛ/ → /tɕɛ/ POSTER, STRID >> IDENT$_{[+anter]}$, IDENT$_{[-strid]}$ and *ʧ' >> *tɕ

The evaluation scenario for Kashubian will be different for two reasons. First, the Polish surface inventory differs from that of Kashubian because Polish has three sets of coronal stridents.

(69) Coronal stridents in Polish

a. Hard alveolars [ʦ ʣ s z]

b. Hard postalveolars [ʧ ʤ ʃ ʒ]

c. Soft prepalatals [ʨ ʥ ɕ ʑ]

The Kashubian system is limited to two classes of stridents.

(70) Coronal stridents in Polish

a. Hard alveolars [ʦ ʣ s z]

b. Soft postalveolars [ʧʼ ʤʼ ʃʼ ʒʼ]

The two classes of stridents are associated with different outputs: (70a) characterizes Coronal Palatalization while (70b) is associated with Velar Palatalization.

Looking at coronals, Kashubian palatalization differs from Polish palatalization in one more way. In the class of obstruents, the surface outputs of Coronal Palatalization are phonetically [+back]. This is exemplified by the data in (71).

[47] *tɕ and *ʧ' are segment inventory constraints that make sure that /ʧʼ/, not /ʨ/, is derived at level 1.

(71) Operation of PAL-*e* in Kashubian

nom.sg.	*loc.sg.*	*gloss*
bòt̲ [t]	bòc̲+e̲ [ʦɛ]	‘shoe’
kòt̲ [t]	kòc̲+e̲ [ʦɛ]	‘cat’
brat̲ [t]	brac̲+e̲ [ʦɛ]	‘brother’
gwiôzd̲+a̲ [da]	gwiôzdz̲+e̲ [ʣɛ]	‘star’
arbat̲+a̲ [ta]	arbac̲+e̲ [ʦɛ]	‘tea’
żakét̲ [t]	żakéc̲+e̲ [ʦɛ]	‘jacket’
sąsôd̲ [t]	sąsôdz̲+e̲ [ʣɛ]	‘neighbour’

Since the outputs in (71) are hard, an attempt at analysing palatalization of coronals on the assumption of strict parallelism runs into difficulty. It is impossible to claim that [ʦ ʣ] are direct outputs of palatalization, which process by definition consists in spreading the feature [−back] from the vowel to the neighbouring consonant. This is illustrated by the failed evaluation in (72).

(72) //t+ɛ// → [ʦɛ]: failed evaluation

//t+ɛ//	PAL-*e*	IDENT-$V_{[-back]}$	IDENT-$C_{[+back]}$
a. tɛ	∗!		
☹ b. ʦɛ	∗!		
☜ c. t’ɛ			∗

PAL-*e* is the driver of the change, so it must be ranked high in the hierarchy. The effect is that the desired candidate is eliminated and the analysis fails. The correct analysis involves intermediate stages, as afforded by Derivational Optimality Theory.

In the analysis to follow, I propose intermediate outputs for Kashubian Coronal

Palatalization. The proposed sequence of changes is *t d* → *ʦ' ʣ'* → *ʦ ʣ*.

Let us look at how the word *bóce* [ʦ+ɛ] 'shoe' (gen.sg.) is evaluated by the constraint hierarchies at levels 1 and 2. I add the constraint **ʦɕ* to illustrate the difference between Kashubian and Polish.

First, the input //t+ɛ// should leave level 1 as /ʦ'+ɛ/. Constraints such as *SOFT-Dors and IDENT-Dors are mute in the battle, so they are not included in the evaluation.

(73) Level 1: //t+ɛ// → /ʦ'+ɛ/

//t+ɛ//	**ʦɕ*	PAL-*e*	STRID	IDENT-$C_{[+back]}$
a. tɛ		∗!		
b. t'ɛ			∗!	∗
☞ c. ʦ'ɛ				∗
d. ʦɕɛ	∗!			∗

Since [ʦɕ] does not exist at all,[48] the constraint **ʦɕ* occupies an undominated position in the ranking and eliminates candidate (73d). Candidates (73a) and (73b) fatally violate PAL-*e* and STRID, respectively.

However, adding another possible output to the evaluation, namely /ʧ'+ɛ/, poses a new challenge. POSTERIOR kills the desired output and generates /ʧ'+ɛ/ as the optimal output for *bòce*, the wrong result.

[48] In fact, some dialects permit [ʦ ʣ ɕ ʑ]. However, the prepalatal stridents do not constitute an addition to the consonantal inventory. Rather, they replace the class of soft [ʧ' ʤ' ʃ' ʒ'], especially in the southern dialects (Jocz 2014).

(74) Level 1: //t+ɛ// → /ʧ’ɛ/: failed evaluation

//t+i//	PAL-*i*	POSTERIOR	IDENT-C$_{[+back]}$
☹ a. ʦ’ɛ		∗!	∗
☜ b. ʧ’ɛ			∗

The analysis is not ready yet. Since POSTERIORITY belongs to the class of segment inventory constraints, it is paired with a faithfulness constraint militating against changing anteriors into posteriors.

(75) IDENT$_{[+anter]}$ [+anterior] on the input consonant must be preserved in an output correspondent of that consonant.

The change *t’ → ʧ”* is blocked if IDENT$_{[+anter]}$ outranks POSTERIOR.

(76) Level 1: //t+ɛ// → /ʦ’ɛ/ – IDENT$_{[+anter]}$ >> POSTERIOR

//t+ɛ//	PAL-*e*	IDENT$_{[+anter]}$	POSTERIOR	IDENT-C$_{[+back]}$
☞ a. ʦ’ɛ			∗	∗
b. ʧ’ɛ		∗!		∗

PAL-*e* remains an undominated constraint. Candidate (76b) violates fatally IDENT$_{[+anter]}$ and is *hors de combat*.

Tableau (77), evaluating *Bòże* ‘God’ (voc.sg.), shows that IDENT$_{[+anter]}$ has no adverse effects on Velar Palatalization.

(77) Level 1: //g+ɛ// → /ʒ'ɛ/

//g+ɛ//	PAL-*e*	**dʒ'*	IDENT$_{[+anter]}$	POSTERIOR	IDENT-C$_{[+back]}$
a. dʒ'ɛ		*!			*
☞ b. ʒ'ɛ					*
c. dz'ɛ		*!		*	*
d. dzɛ	*!				

The evaluation gives the correct result. SPIRANTIZATION, **dʒ'*, excludes candidates (77a) and (77c). Candidate (77c) also violates POSTERIOR, but this is insignificant, as it has already been eliminated. According to Feature Geometry, [±anterior] is a dependent of CORONAL, so by definition velars are neither [+anterior] nor [−anterior] and hence IDENT$_{[+anter]}$ is mute in (77).

At level 2, the hierarchy established for Velar Palatalization encompasses PAL-*e*, STRID, and POSTERIOR as undominated constraints. The other constraints affect dorsals and will not be considered in the analysis that follows, which looks at coronals, not at dorsals.

The attested outputs of Coronal Palatalization in words such as *bòce* [ʦ+ɛ] 'shoe' (loc.sg.) or *sąsôdze* [dz+ɛ] 'neighbour' (loc.sg.) are the hard stridents [ʦ dz]. Therefore, the aim of evaluation at level 2 is to derive clusters [ʦɛ dzɛ] as the optimal outputs. Let us see how the hierarchy proposed for palatalization of velars fares with the evaluation of coronals. The ranking proposed for level 2 is as follows. (The constraints mute in the evaluation of coronals are omitted.)

(78) Ranking of the constraints at level 2

PAL-*i* (PAL-*e*), STRID, POSTERIOR >> IDENT-C$_{[+back]}$

Crucial for coronal evaluation is the fact that at level 2, IDENT$_{[+anter]}$ outranks POSTERIOR. Tableaux below present the evaluation of *bòce* 'shoe' (loc.sg.).

(79) Evaluation of *bòce* ‘shoe’: level 1 and level 2

i. Level 1: //t+ɛ// → /ʦ’ɛ/: IDENT$_{[+anter]}$ >> POSTERIOR

//t+ɛ//	PAL-*e*	STRID	IDENT$_{[+anter]}$	POSTERIOR	IDENT-C$_{[+back]}$
☞ a. ʦ’ɛ				*	*
b. ʧ’ɛ			*!		*
c. ʦɛ	*!			*	

ii. Level 2: /ʦ’+ɛ/ → /ʦɛ/: failed evaluation

/ʦ’+ɛ/	PAL-*e*	STRID	IDENT$_{[+anter]}$	POSTERIOR	IDENT-C$_{[−back]}$
☜ a. ʦ’ɛ				*	
b. ʧ’ɛ			*!		
☹ c. ʦɛ	*!			*	*

The winner in (79i) is /ʦ’+ɛ/ with a soft strident. However, the surface representation of *bòce* ‘shoe’ (loc.sg.) is [ʦ+ɛ] with a hard strident. The evaluation produces the wrong result and requires modification.

The first observation is that the desired output violates the undominated constraint, namely PAL-*e*. The constraint must therefore be reranked to a low position.

The second observation is that Kashubian has a hard–soft bifurcation among stridents. Namely, [ʃ’ ʒ’ ʧ’ ʤ’] are always soft while [s z ʦ ʣ] are always hard. Thus, the constraint forcing *ʦ’* → *ʦ* belongs to the category of segment inventory constraints and is undominated. Hardening is implemented by HARD (Rubach 2003b).

(80) HARD [ʦ ʣ] must be hard (that is, [+back]).

Since HARD and PAL-*e* favour mutually exclusive outputs, the conflict is resolved by

reranking.

(81) Reranking of constraints between level 1 and level 2

level 1 PAL-*e* >> HARD

level 2 HARD >> PAL-*e*

The evaluation now runs as follows.

(82) Level 2: /ʦ'+ɛ/ → /ʦɛ/ – operation of HARDENING

/ʦ'+ɛ/	HARD	IDENT$_{[+anter]}$	PAL-*e*	POSTERIOR	IDENT-C$_{[-back]}$
a. ʦ'ɛ	*!			*	
b. ʧ'ɛ		*!			
☞ c. ʦɛ			*	*	*

Candidate (82a) fatally violates the undominated constraint HARD while (82b) mortally offends IDENT$_{[+anter]}$. The winner is (82c). The evaluation gives the correct result.

5.5.2. Palatalization-*i*

Let us look at how the word *bócyk* [ʦ+ɨ] 'shoe' (dim.) is evaluated by the constraint hierarchies at level 1, 2, and 3 hitherto proposed.

The input //t+i// leaves level 1 as /ʦ'i/.

(83) Level 1: //t+i// → /ʦ'i/

//t+i//	PAL-*i*	IDENT-$V_{[-back]}$	STRID	$IDENT_{[+anter]}$	POSTERIOR
a. ti	*!		*		
b. t'i			*!		*
☞ c. ʦ'i					*
d. ʧ'i				*!	
e. tɨ		*!			

PAL-*i* forces softening of the consonant. STRID is responsible for changing the manner of articulation from a stop to an affricate and $IDENT_{[+anter]}$ ensures that the place of articulation of the optimal output is not shifted to [−anterior].

At level 2, the hierarchy established for Velar Palatalization triggered by /i/ encompasses PAL-*i*, STRID, and POSTERIOR as undominated constraints. Section 5.5.1 argued for the addition of HARD and established the ranking: HARD >> PAL-*e* and $IDENT_{[+anter]}$ >> POSTERIOR. As palatalization of velar stems is active on level 2 (see Section 5.3.4), PAL-*i* is ranked high in the hierarchy, as opposed to PAL-*e*, which is reranked to a lower position and hence is inert.

(84) Level 2: /ʦ'+i/ → /ʦɨ/

/ʦ'+i/	PAL-*i*	HARD	PAL-*e*	$IDENT_{[+anter]}$	IDENT-$C_{[-back]}$	POSTERIOR
a. ʦ'i		*!				*
b. ʧ'i				*!		
☞ c. ʦɨ					*	
d. ʦi	*!					

Candidate (84c) is the optimal one. HARD dominates IDENT-$V_{[-back]}$, so the optimal output

needs to encompass a hard consonant and at the same time satisfy PAL-*i*. The result is a sequence of a hard vowel followed by [ɨ], i.e. Hardening accompanied by Vowel Retraction.

5.5.3. Palatalization in denominal adjectives

As argued in Section 5.3.5, coronal-stem adjectives, such as *bògati* [t+ɨ] 'rich' (masc.nom.sg.), do not exhibit palatalization. The data in (84) challenge this claim.

(85) Denominal adjectives with stem-final coronals

Noun	*Adj. masc.nom.sg.*	*Adj. fem.nom.sg.*	*gloss*
kòt̲ [t]	kòc̲+y [ʦɨ]	kòc̲+ô [ʦɨ]	'cat'
niast̲+a [ta]	niasc̲+y [ʦɨ]	niasc̲+ô [ʦɨ]	'woman' (arch.)
kret̲ [t]	krec̲+y [ʦɨ]	krec̲+ô [ʦɨ]	'mole'
robot̲+a [ta]	roboc̲+y [ʦɨ]	roboc̲+ô [ʦɨ]	'work'

Denominal adjectives warrant three observations. The first observation is that, contrary to the coronal stem-final adjectives, such as *młodi* [d+ɨ] 'young' (masc.) or *bògati* [t+ɨ] 'rich' (masc.), in which the coronals remain unchanged, the adjectives in (85) show palatalization *t* → *ʦ*. Palatalization operates in both the masculine and the feminine gender. The second observation is that both the coronal and the following vowel are [+back]. This may be due to the fact that the palatalized coronal was hardened and the following vowel was retracted, as is the case with Coronal Palatalization, in which *t d* → *ʦ' ʣ'* → *ʦ ʣ*. If so, the question would be of the nature of such change. The third observation is that the adjectives in (85) are derived from nouns. The structure of the adjective allows for an assumption that the context triggering the change of the underlying coronal is not visible on the surface.

Let us compare the adjectives in (85) with the set presented in (86).

(86) Denominal adjectives with stem final consonants other than [t d]

	Noun nom.sg.	*Adj. fem.instr.sg.*	*gloss*
a.	krow+a [va]	krow+i+ą [vjum]	‘cow’
	gap+a [pa]	gap+i+ą [pjum]	‘crow’
	rëb+a [ba]	rëb+i+ą [bjum]	‘fish’
b.	bocón [n]	bocón+i+ą [ɲum]	‘stork’
c.	wilk [k]	wilcz+ą [ʧ’um]	‘wolf’
	jaskuleczk+a [ka]	jaskuleczcz+ą [ʧ’um]	‘swallows’
d.	kòt [t]	kòc+ą [ʦum]	‘cat’
	kret [t]	krec+um [ʦum]	‘mole’

The feminine adjectives in (86) are derived from nouns, so they are denominal adjectives. They are cited in the instrumental case because the case marker [um] starts with a [+back] vowel, so it definitely does not constitute a palatalizing context. Yet, a palatalization change is visible in all of the adjectives.

The data are divided into four groups. Group (86a) shows that the structure of the adjective encompasses an adjectivizing morpheme. It surfaces as [j] in e.g. *krowią* ‘cow’. Sets (86b) and (86c) prove that the process involved is indeed palatalization. Both //n// and //k// palatalize in a transparent manner and surface as [ɲ] in *bocónią* ‘stork’ and [ʧ’] in *wilczą* ‘wolf’, exactly as expected of a palatalization process. A palatalization effect is also visible in set (86d). The adjectivizing suffix must have been deleted because it is not visible on the surface. To conclude, in denominal adjectives palatalization is triggered by an adjectivizing morpheme which is deleted after certain consonants and hence is not visible in the surface representation.

As argued in the previous chapter, the Kashubian adjectivizing morpheme is //i// rather than //j//. The question of whether //i// or //j// is the UR of the adjectivizing morpheme has

also been widely discussed in the literature on Polish. According to Rubach (1984), Slavic languages have a number of process involving the morpheme //i//, which morpheme is not visible in the surface representation of many words because it is deleted. The presence of this morpheme triggers gliding accompanied by the deletion of /j/ after [+coronal] segments. A schematic derivation of the adjective *kòcy* 'cat', repeated here for convenience, looks as follows.

(87) Schematic derivation of the adjective *kòcy* 'cat'

UR	kò//t+i+ɨ//	
cycle 2	t+i	WFR Adj. //-i//
	t'+i	Coronal Palatalization: t → ʦ' / — i
cycle 3	t'+i+ɨ	WFR masc.nom.sg. //-ɨ//
	t'+j+ɨ	Gliding: i → j / — V
	t'+ɨ	*j*-Deletion: j →Ø / [+coron] —
	ʦ'+ɨ	Stridency Spell-out: t' → ʦ'
	ʦ+ɨ	Hardening: ʦ' → ʦ
SR	[ʦɨ]	

The adjectival morpheme causes palatalization. The high front vowel glides to /j/ once the context for gliding is created in cycle 3. The glide is then deleted if preceded by a coronal.

In Optimality Theory, Gliding and *j*-Deletion result from an interaction of well-formedness constraints preventing vowel hiatus and faithfulness constraints controlling them.

Active in the evaluation are the following constraints.

(88) ONSET and MAXSEG constraints

a. ONSET Syllables must have onsets.

b. MAXSEG Every segment of the input has a correspondent in the output.

The adjectivizing morpheme must enter evaluation at level 1, where palatalization processes are fully operational. Next, on level 2, when the nom.sg. ending is added, the double vowel sequence is repaired by Gliding accompanied by *j*-Deletion.

This is shown by the evaluation of the denominal adjective *kòcy* [ʦ+ɨ] 'cat' in (89). As argued earlier the masc.nom.sg. suffix //ɨ// is added at level 2. The //i// in (89) is the adjectivizing morpheme, not the inflectional ending.

(89) Level 1: //t+i// → /ʦ'i/

//t+i//	PAL-*i*	IDENT-V$_{[-back]}$	STRID	IDENT$_{[+anter]}$	POSTERIOR
a. ti	*!				
b. t'i			*!		*
☞ c. ʦ'i					*
d. ʧ'i				*!	
e. tɨ		*!			

The adjectivizing morpheme triggers palatalization. STRID and IDENT$_{[+anter]}$ eliminate the candidates with soft [t'] and with [ʧ'], respectively. The candidate with a palatalized anterior strident wins the battle.

The optimal output from level 1, /ʦ'i/, enters level 2, where the adjectival masc.nom.sg. marker is added. Since the attested output has a segment deleted, MAXSEG must be ranked low in the hierarchy. At the same time, ONSET must be ranked high, as onsetless nuclei do not surface as optimal outputs. By the same token, we have ONSET >> MAXSEG.

The rule of *j*-Deletion, *j* → Ø / [+coron] —, in the rule system is translated into OT as the following constraint.

(90) *COR-*j* No /j/ after a coronal.

In order to have an effect, *COR-*j* must dominate MAXSEG, the constraint banning deletion. The evaluation will now look as follows.

(91) Level 2: /ʦ'+i+ɨ/ → /ʦɨ/

/ʦ'+i+ɨ/	PAL-*i*	HARD	ONSET	*COR-*j*	IDENT-V$_{[-back]}$	MAXSEG
a. ʦ'i.ɨ		*!	*			
b. ʦ'i		*!				*
c. ʦɨ.ɨ			*!		*	
☞ d. ʦɨ						*
e. ʦ'jɨ	*!	*		*		
f. ʦjɨ	*!			*		
g. ʦ'ji		*!		*		

Candidates (91a), (91b), and (91g) fatally violate HARD. Candidate (91c) incurs a fatal violation of ONSET, as the second vowel is a nucleus without an onset [ʦɨ.ɨ]. Candidates (91e) and (91f) violate PAL-*i* and are eliminated, because [j][49], a front glide, is followed by [ɨ], a back vowel, so we witness a disagreement in [±back] between [j] and [ɨ]. The output in (91d) with the deleted segment and retracted vowel leaves the evaluation as the optimal one. The sequence [ʦ+ɨ] is the attested output in *kòcy* 'cat', so the evaluation gives the correct result.

5.5.4. Partial conclusions

Section 5.2, similarly to the preceding sections, demonstrated that it is impossible to analyse

[49] PAL-*i* covers consonants but arguably, the generalization is extended to glides.

palatalization processes in Kashubian adhering to the principle of strict parallelism. The palatalization of coronals requires processing at three levels of evaluation with constraints reranked between the levels.

Coronal Palatalization dominates at level 1, as both PAL-*i* and PAL-*e* are ranked on the undominated position in the hierarchy. The change of manner of articulation from stops to strident is forced by putting STRID high in the hierarchy. At the same time, IDENT$_{[+anter]}$ dominates POSTERIOR, so that the optimal output does not change its place of articulation. Vowel Lowering also takes place at level 1, forced by V-LOWER accompanied by IDENT-V$_{[-back]}$.

Level 2 is the domain of PAL-*i*, with PAL-*e* being reranked to a low position in the hierarchy. The outputs from level 1 become inputs to level 2. Level 2 witnesses the operation of Hardening and Vowel Retraction, ensured by the ranking HARD >> PAL-*e*, IDENT-V$_{[-back]}$. Evaluation of denominal adjectives also takes place at level 2, with ONSET, *COR-*j* >> MAXSEG ensuring the operation of Gliding and *j*-Deletion.

Level 3 faces entering the feminine adjectival suffix. Palatalization is non-operational at this level. Ident-C$_{[+back]}$ dominates PAL-*i* and PAL-*e* , so that the outputs remain fully faithful to the inputs at level 3.

The changes affecting coronal obstruents are summarised as follows.

(92) Coronal Palatalization – summary

	Active Processes	Constraint Ranking
level 1	– Coronal Palatalization (PAL-*i* and PAL-*e*) – Vowel Lowering	PAL-*i* (PAL-*e*), IDENT-V$_{[-back]}$, STRID, IDENT$_{[+anter]}$ >> POSTERIOR, IDENT-V$_{[+back]}$ V-LOWER >> IDENT-V$_{[-back]}$

level 2	– Hardening – Vowel Retraction – Gliding and *j*-Deletion – Coronal Palatalization (PAL-*i* but no Pal-*e*)	PAL-*i*, HARD, IDENT$_{[+anter]}$ >> IDENT-V$_{[-back]}$, STRID >> PAL-*e*, POSTERIOR ONSET, *COR-*j* >> MAXSEG
level 3	– no Coronal Palatalization	Ident-C$_{[+back]}$ >> Pal-*i* (Pal-*e*)

The proposed constraint rankings create a matrix necessary for the evaluation of palatalization processes affecting coronals. Level distinction and the assumption that some affixes may enter evaluation later than at level 1 solve the ranking paradoxes and account for opaque effects of palatalization.

Chapter 6

Conclusions

The purpose of this dissertation was to investigate the operation of three theoretical frameworks from the perspective of Kashubian phonology: Lexical Phonology, Optimality Theory, and Derivational Optimality Theory, a modified version of OT. From the point of view of the data, the focus was on Kashubian palatalizations. The investigation has shown that neither Lexical Phonology nor standard Optimality Theory can provide a satisfactory analysis of palatalization. The issues encountered by these theories disappear when we adopt the framework of Derivational Optimality Theory.

There has been virtually no discussion of Kashubain in generative phonology, with Hopkins (2001), Brzostek (2007) and Kosecka (2014) being the sole exceptions.

Drawing on Jocz (2013), I assumed in Chapter 2 that the surface inventory of the Western area of central Kashubian dialects consists of seven vowels: three high, three mid, and one low. There are two front and two central vowels. The vowels [i] and [ɛ] are considered to be [−back]. The central vowels include [ɨ] and [ə], which are both considered to be [+back] phonologically. The vowels [i ɨ] are [+high], whereas [ɛ ə] are [−high]. Back high vowels include rounded [u] and [ɔ]. The area of low vowels contains one element: [a].

Chapter 3 concluded that [i] and [ɨ] cannot be two allophones of one underlying segment //i// in Kashubian. Such distribution of the vowels would require that virtually all consonants in the underlying representation be divided along the soft–hard axis, leading to huge complications and incorrect predictions, as is the case of the putative soft /r'/. The solution is to postulate //ɨ// as an underlying segment.

Chapter 4 argued that Kashubian has a productive process of Coronal Palatalization. The process is opaque because The outputs are hard, i.e. [+back], [ʦ ʣ], whereas palatalization is by definition a softening rule, spreading the [−back] feature from the vowel

to the consonant. The opacity is blamed on the rule of Hardening, eliminating all soft coronals from the system irrespective of the context.

The treatment of //s z// causes complication. Given the parallel between //t d// and //s z// as a class of anterior coronals, the analysis is to subject them all to Coronal Palatalization. The effect of palatalization constitutes a Duke of York gambit.

Palatalization of velars requires two separate rules: Velar Palatalization and Velar Softening. The former is triggered by //i ɛ// and applies to //k g x//. The process is accompanied by Spirantization in words such as *podrożec* [ʒ'+ɛ] 'to become more expensive'. The latter is triggered only by //i//, and does not apply to //x//. It produces outputs such as *drodżi* [ʤ'+i] 'expensive'. The crucial assumption is that Velar Palatalization and Spirantization are ordered before Velar Fronting, *ɨ* → *i* which feeds Velar Softening but not Spirantization.

The second part of Chapter 4 highlighted the different behaviour of masculine and feminine adjectives. The masculine and feminine forms have the same ending in the phonetic representation, as e.g. in *bògati* [t+ɨ] – *bògatô* 'rich' [t+ɨ] (masc. – fem.). However, the phonological effects of these endings are different after velars: as in *drodżi* [ʤ'+i] – *drogô* [g+ɨ] 'expensive' (masc. – fem.). The analysis of these effects calls for modifying the assumptions of Lexical Phonology. Three scenarios were analysed: first, //i// is the UR of the masc.nom.sg. adjectival ending; second, the masculine ending has two allomorphs in the UR; and, third, //ɨ// is the masc.nom.sg. adjectival ending with the adjectival evaluation spread across levels.

The first scenario assumed //i// to be the UR of the masculine ending of adjectives. I investigated whether Vowel Retraction may act as the blocker of Coronal Palatalization in coronal-stem adjectives. The analysis failed and was rejected.

The second scenario assumed underlying allomorphs of the masc.nom.sg. marker of

adjectives. Under this scenario, soft stems and [k g] stems take //-i// as the masc. marker and //ɨ// is appended in all other adjectival stems. Although the scenario correctly accounts for the surface forms of both velar-stem and coronal-stem adjectives, postulating allomorphs is arbitrary.

Even though I did not reject the allomorphy analysis completely, I explored yet another solution. Under the third scenario, I assumed that Kashubian has two derivational levels. An associated assumption is that certain affixes as well as the word formation rules are assigned to a specific level, for example, Velar Fronting is assigned to level 2. Word-formation rules carrying noun and verb derivation enter the lexical phonology at level 1 while the feminine adjectival suffix //-ɨ// in words such as *drogô* [g+ɨ] 'expensive' is added at level 2, which accounts for the absence of Velar Softening in feminine adjectives. The system produces the desired outputs for masculine velar-stem adjectives such as *drodżi* [ʤ'+i] 'rich' via Velar Softening that is active at level 1. The masc.nom.sg. ending and the fem.noms.sg. ending of adjectives are homophonous and are represented as //-ɨ//. The third scenario works, albeit on the condition that the model of Lexical Phonology is modified: a single rule may belong to more than one level. Without this modification, the system would have produced the wrong result in denominal adjectives, such as *kòcy* [ʦ+ɨ] 'cat' (masc.) and *kòcô* [ʦ+ɨ] (fem.). The modification runs counter to the assumptions made by Booij and Rubach (1987) and Rubach (2008b). The third scenario requires further investigation.

Chapter 5 investigated palatalization processes affecting velars and coronals from the perspective of Optimality Theory. The principle of strict parallelism leads to the failure of OT in its account for Kashubian palatalization processes affecting velars. The conclusion is that the assumptions of the theory must be modified to allow for derivational levels. The issues encountered by classic OT are solved by Derivational Optimality Theory, according to which, palatalization of velars spans three levels of evaluation.

Velar Palatalization and Spirantization are processes that are active at level 1. The drivers are PAL-*i* and PAL-*e*, controlled by the identity constraints: IDENT-$C_{[+back]}$ and IDENT-$V_{[-back]}$. The desired output is obtained from the ranking of SOFT-Dors, STRID, and POSTERIOR high in the hierarchy. Spirantization is ensured by **dʒ'* dominating IDENT-$C_{[-cont]}$ with IDENT-*dʒ'* ranked higher than **dʒ'*. Spirantization is correctly blocked in words with underlying //dʒ'//, such as *bridż* 'bridge'. In addition, Vowel Lowering takes place at level 1, forced by V-LOWER accompanied by IDENT-$V_{[-back]}$, such as in *wrzeszczec* 'to shout'. Next, reranking of the constraints takes place at level 2. PAL-*i* and PAL-*e* remain high in the hierarchy. Since outputs of Velar Softening such as *drodżi* 'expensive' (masc.nom.sg.) do not spirantize, **dʒ* is ranked low. Palatalization processes are limited to Velar Fronting, *ɨ* → *i*, ensured by the ranking: PAL-*i*, **kɨ gɨ* >> IDENT-$V_{[+back]}$. The feminine adjectival suffix enters evaluation at level 3. Palatalization and Velar Softening are inactive at level 3, so the outputs remain fully faithful to the inputs. The ranking Ident-$V_{[+back]}$ >> Pal-*i* (Pal-*e*), **kɨ gɨ* makes sure that /ɨ/ is not fronted to [i] at level 3.

The analysis of palatalization processes affecting coronals is parallel to that of palatalization processes affecting velars. Coronal Palatalization is active at level 1 and is enforced by PAL-*i* and PAL-*e* as undominated constraints. STRID ranked high in the hierarchy leads to the change of the manner of articulation from stops to stridents with IDENT$_{[+anter]}$ dominating POSTERIOR, so that the optimal output does not change its place of articulation. Level 2 is the domain of PAL-*i*, but not of PAL-*e*. The main operations at level 2 include Hardening and Vowel Retraction, which follows from the ranking of HARD over PAL-*e* and IDENT-$V_{[-back]}$. The masc.nom.sg. ending of adjectives enters the evaluation at level 2. The palatalization in words such as *młodi* 'young' and *bògati* 'rich' is blocked by ranking IDENT-$V_{[+back]}$ higher than PAL-*i*. At the same time, **kɨ gɨ* is ranked above IDENT-$V_{[+back]}$ in order to ensure Velar Softening in adjectives such as *drodżi* 'expensive'.

Denominal adjectives, such as *kòcy* ‘cat’, are analysed at level 2, where ONSET, *COR-*j* >> MAXSEG induces the operation of Gliding and *j*-Deletion. The feminine adjectival suffix enters at level 3, at which palatalization and accompanying processes are no longer active, so //mwɔd+ɨ// *młodô* ‘young’ (fem.nom.sg.) surfaces unchanged as [mwɔdɨ].

Applying Derivational Optimality to the analysed data alleviated various ranking paradoxes and opacity. The assumption that reranking is possible between the derivational levels correctly accounted for the different behaviour of velars in *Bòże* ‘God’ (voc.) and *drodżi* ‘expensive’. The first item is evaluated at level 1, at which Velar Palatalization is accompanied by Spirantization whereas the second item enters evaluation at level 2, where only Velar Softening is active. The theory employing levels accounts for the opacity of the verbalizing morpheme surfacing as [i], in words such as *lepic* ‘to glue’, and [ɛ] in e.g. *straszëc* ‘to haunt’. The constraint V-LOWER applies on level 1, interacting with PAL-*e* and SPIRANTIZATION.

Kashubian data provide arguments for two theoretical assumptions of Derivational Optimality Theory. The first one is that the evaluation of lexical items spans across levels. This follows from the fact that classic OT is unable to account for the data at one level of evaluation.

The second assumption supported in this dissertation is that affixes can be assigned to a specific level of evaluation. The Kashubian adjectival endings enter the evaluation at level 1 (verbalizing morpheme), level 2 (masc.nom.sg), and at level 3 (fem.nom.sg.).

To conclude, the analyses of the data within the said three different theory models showed that the derivation taking place at stages motivated by morphological and phonological changes, as proposed by Lexical Phonology, allowed for solving most of the opacity issues. The rule-based model requires the application of recurrent processes that lead to multiple instances of the Duke of York gambit. Further, it is necessary to modify Lexical

Phonology by allowing the designated rules to apply at more than one level, which makes the analysis extremely arbitrary. Optimality Theory rejects derivation in whatever form and demands that evaluation should take place in a fully parallel manner. It is unable to cope with the issues presented by the Kashubian data. In contrast, Derivational Optimality Theory that follows the phonological tradition of applying processes in steps encounters no difficulty with accounting for opacity in Kashubian phonology. I conclude that Derivational Optimality Theory is superior to standard Optimality Theory and Lexical Phonology.

References

Atlas językowy kaszubszczyzny i dialektów sąsiednich (1964–1977). 15 vols. (ed.) Zdzisław Stieber (vols. I–VI) & Hanna Popowska-Taborska (vols. VII–XV). Wrocław – Warszawa – Kraków – Gdańsk: Ossolineum.

Anderson, Stephen R. (1969). West Scandinavian vowel systems and the ordering of phonological rules. *Doctoral dissertation*. Massachusetts Institute of Technology.

Baudouin de Courtenay, Jan (1894). *Próba teorii alternacyj fonetycznych. Część I ogólna*. Kraków: Akademia Umiejętności.

Baudouin de Courtenay, Jan (1984). *O języku polskim*. Warszawa: Państwowe Wydawnictwo Naukowe.

Bermúdez-Otero, Ricardo (1999). Constraint interaction in language change: Quantity in English and Germanic. *Doctoral dissertation*. University of Manchester.

Bermúdez-Otero, Ricardo & April McMahon (2006). English phonology and morphology. In Bas Aarts & April McMahon (eds.), *The handbook of English linguistics*, 382–410. Oxford: Blackwell.

Bobrowski, Witold & Katarzyna Kwiatkowska (2000). *Kaszëbsczé abecadło: twój pierszi elemeńtôrz*. Gdańsk: Fundacja Dar Gdańska.

Boersma, Paul & David Weenik (2019). Praat: doing phonetics by computer [Computer programme]. Version 6.0.52, retrieved 19 May 2019 from http://www.praat.org/.

Booij, Geert & Jerzy Rubach (1987). Postcyclic versus postlexical rules in Lexical Phonology. *Linguistic Inquiry* 18: 1–44.

Breza, Edward and Jerzy Treder (1981). *Gramatyka kaszubska*. Gdańsk: Zrzeszenie Kaszubsko-Pomorskie.

Breza, Edward and Jerzy Treder (1984). *Zasady pisowni kaszubskiej*. Gdańsk: Zrzeszenie Kaszubsko-Pomorskie.

Brzostek, Zofia (2007) Palatalization of Obstruents in Optimality Theory from the Perspective of English and Kashubian. *Doctoral dissertation*. Uniwersytet Warszawski.

Cenôva, Florian (1879). *Zarés do Grammatiki Kaŝebsko-Słovinskjé Mòvé*. Poznań: W. Simon.

Chen, Matthew (1973). Predictive power in phonological description. *Lingua* 32: 173–191.

Chomsky, Noam & Morris Halle (1968). *The Sound pattern of English*. New York: Harper & Row.

Clements, George N. and Elizabeth V. Hume. (1995). The internal organization of speech sounds. In Goldsmith, John A. (ed.), *The Handbook of phonological theory,* 245–306. Cambridge, MA: Blackwell.

Cybulski, Marek & Róża Wosiak-Śliwa (1992). *Kaszubski język literacki: Podręcznik dla lektoratów*. Gdańsk: Oficyna Wydawnicza Graf.

Cybulski, Marek & Róża Wosiak-Śliwa (2001). *Ùczimë sã po kaszëbskù*. Gdańsk: Oficyna Czec, Zrzeszenie Kaszubsko-Pomorskie.

Czaykowska-Higgins, Ewa (1988). Investigations into Polish morphology and phonology. *Doctoral dissertation*. Massachusetts Institute of Technology.

Dejna, Karol (1973). *Dialekty polskie*. Wrocław – Warszawa – Kraków: Zakład Narodowy im. Ossolińskich.

Gołąbek, Eugeniusz (1992). *Rozmówki kaszubskie*. Gdynia: ARKUN.

Gołąbek, Eugeniusz (2005). *Kaszëbszczi słowôrz normatiwny*. Gdańsk: Oficyna Czec.

Gołąbek, Eugeniusz (2012–2019). *Wielki słownik polsko-kaszubski*. 4 vols. Gdańsk: Zrzeszenie Kaszubsko-Pomorskie.

Gòłąbk, Eugeniusz (1997). *Wskôzë kaszëbsczégò pisënkù*. Gdańsk: Oficyna Czec.

Gussmann, Edmund (1980). *Studies in abstract phonology*. Cambridge, MA: MIT Press.

Gussmann, Edmund (2007). *Phonology of Polish*. Oxford: Oxford University Press

Halle, Morris (1992). Phonological features. In William Bright (ed.), *International encyclopaedia of linguistics*, 207–212. New York: Oxford University Press.

Halle, Morris. (1995). Feature Geometry and feature spreading. *Linguistic Inquiry* 26: 1–46.

Hilferding Aleksander (1862). *Ostatki Slavjan na južnom beregu Baltijskogo Morja*. Sankt-Petersburg. Translated: 1989. *Resztki Słowian na południowym wybrzeżu Morza Bałtyckiego*. Gdańsk: Zrzeszenie Kaszubsko-Pomorskie.

Hopkins, Paul Stanley (2001). The Phonological Structure of the Kashubian Word. *Doctoral dissertation.* University of Victoria.

Ito, Junko & Armin Mester (1999). The phonological lexicon. In Natsuko Tsujimura (ed.) *The handbook of Japanese linguistics*, 62–100. Oxford: Blackwell.

Jakobson, Roman (1948). Russian conjugation. *Word* 4: 155–167.

Johnson, Keith. (1997). *Acoustic and auditory phonetics*. Malden, MA, Oxford: Blackwell Publishers.

Jocz, Lechosław (2013). *System samogłoskowy współczesnych gwar centralnokaszubskich*. Szczecin. Retrieved 25 May 2015 from https://ajp.academia.edu/LechosławJocz.

Jocz, Lechosław (2014). *System spółgłoskowy współczesnych gwar centralnokaszubskich*. Szczecin. Retrieved 25 May 2015 from https://ajp.academia.edu/LechosławJocz.

Kager, René (2004). *Optimality Theory*. Cambridge: Cambridge University Press.

Kenstowicz, Michael (1994). Phonology in generative grammar. Cambridge, Mass. & Oxford: Blackwell.

Kiparsky, Paul. (1973). Abstractness, opacity and global rules. In Osamu Fujimura (ed.) *Three dimensions in phonological theory*, 57–86. Tokyo: TEC Company.

Kiparsky, Paul. (1982). From Cyclic Phonology to Lexical Phonology. In Harry van der Hulst, Norval Smith (eds.) *The structure of phonological representations,* 131–175. Dordrecht: Foris Publications.

Kiparsky, Paul. (1985). Some consequences of Lexical Phonology. *Phonology Yearbook* 2: 85–138.

Kiparsky, Paul (1997). LP and OT. Handout. Iithaca, NY: Cornell Linguistic Institute.

Kiparsky, Paul (2000). Opacity and cyclicity. *The Linguistic Review* 17: 351–365

Kiparsky, Paul (2008). Universals constraint change, change results in typological generalizations. In Jeff Good, (ed.) *Linguistic universals and language change*. Oxford: Oxford University Press.

Kosecka, Justyna (2014). Coronal Palatalization in Kashubian. *Studies in Polish Linguistics* 9(3): 137–161.

Kraska-Szlenk, Iwona (1997). Exceptions in phonological theory. *Proceedings of the 16th International Congress of Linguistics*. Oxford: Pergamon.

Labuda, Aleksander (1988). *Słownik polsko-kaszubski*. Gdańsk: Zrzeszenie Kaszubsko-Pomorskie.

Ladefoged, Peter (2003). *Phonetic data analysis. An introduction to fieldwork and instrumental techniques*. Malden, MA: Blackwell.

Lorentz, Fryderyk (1958–1962). *Gramatyka pomorska*. 4 vols. (pages numbered continuously) (photographic reproduction of 1st edn, 1927–1937. Poznań: Instytut Zachodnio-Słowiański). Wrocław: Zakład Narodowy im. Ossolińskich.

Łubowicz, Anna (2003). Contrast preservation in phonological mappings. *Doctoral dissertation*. University of Massachusetts Amherst.

Makurat, Hanna (2008). Kaszëbskò-pòlsczé fòneticzné interferencje na kaszëbsczi jãzëkòwi òbéńdze. Cësk kaszëbiznë na pòlaszëznã. *Studia Slawistyczne 7. Pogranicza: Kontakty kulturowe, literackie, językowe*. 79–97.

Makùrôt, Hana (2016). *Gramatika kaszëbsczégò jãzëka*. Gdańsk: Zrzeszenie Kaszubsko-Pomorskie

Mascarò, Joan (1976). Catalan phonology and the phonological cycle. *Doctoral dissertation*. Massachusetts Institute of Technology.

McCarthy, John (1999). Sympathy and phonological opacity. *Phonology* 16: 331–339.

McCarthy, John (2003). Sympathy, cumulativity, and the Duke-of-York gambit. In Caroline Féry, Ruben van de Vijver (eds.), *The Syllable in Optimality Theory*, 23–76. Cambridge: Cambridge University Press.

McCarthy, John & Alan Prince (1995). Faithfulness and reduplicative identity. In Jill Beckman, Suzanne Urbanczyk & Laura Walsh Dickey (eds.), *Papers in Optimality Theory. University of Massachusetts Occasional Papers in Linguistics*. Amherst: University of Massachusetts.

Olbracht-Prondzyński, Cezary (2007). *The Kashubs today: Culture – language – identity*. Gdańsk: Instytut Kaszubski w Gdańsku.

Padgett, Jaye (2001) Contrast dispersion and Russian palatalization. In Elizabeth Hume & Keith Johnson (eds.), *The role of speech perception in phonology*, 187–218. San Diego, CA: Academic Press

Padgett, Jaye (2003). The emergence of contrastive palatalization in Russian. In Eric Holt (ed.), *Optimality theory and language change*, 307–335. Dordrecht: Kluwer Academic Press.

Padgett, Jaye (2010). Russian consonant-vowel interactions and derivational opacity. In Wayles Browne, Adam Cooper, Alison Fischer, Esra Kesici, Nikola Predolac & Draga Zec (eds.), *Proceedings of the eighteenth Formal Approaches to Slavic Linguistics: The second Cornell meeting 2009*, 353–382. Ann Arbor: Michigan Slavic Publications.

Pater, Joe (2006). The locus of exceptionality: Morpheme-specific phonology as constraint indexation. In Leah Bateman, Michael O'Keefe, Ehren Reilly & Adam Werle (eds.),

University of Massachusetts Occasional Papers in Linguistics 32*: Papers in Optimality Theory III*, 259–296. Amherst, MA: Graduate Linguistic Student Association.

Pioch, Danuta (2001). *Kaszëbë: Zemia i lëdzë. Podręcznik języka kaszubskiego z ćwiczeniami*. Gdańsk: Zrzeszenie Kaszubsko-Pomorskie, Oficyna Czec.

Plapp Kuhn, Rosemary (1996) Russian /i/ and /ɨ/ as underlying segments. *Journal of Slavic Linguistics* 4: 77–108.

Popowska-Taborska, Hanna (2004). Pięćdziesiąt lat badań kaszuboznawczych w Polskiej Akademii Nauk. *Acta Cassubiana* 6: 279–291.

Popowska-Taborska Hanna & Wiesław Boryś (1994). *Słownik etymologiczny kaszubszczyzny*. Warszawa: Slawistyczny Ośrodek Wydawniczy Polskiej Akademii Nauk.

Prejs Piotr (1840). Donesenije P. Prejsa G. Ministru Narodnago Prosveščenija, iz Berlina ot 20 Ijunja 1840 goda. *Žurnal Ministerstva Narodnago Prosveščenija* 28: 1–24.

Prince, Alan & Paul Smolensky (2004). *Optimality Theory: Constraint interaction in generative grammar*. Oxford: Blackwell.

Pullum Geoffrey K. (1976). The Duke of York gambit. *Journal of Linguistics* 12(1): 83–102.

Ramułt, Stefan (1893). *Słownik języka pomorskiego czyli kaszubskiego*. Gdańsk: Oficyna Czec (2003).

Rubach, Jerzy (1984). *Cyclic and Lexical Phonology. The structure of Polish*. Dordrecht: Foris Publications.

Rubach, Jerzy (1997). Extrasyllabic consonants in Polish: Derivational Optimality Theory. In Iggy Roca (ed.), *Derivations and constraints in phonology*, 551–581. Oxford: Oxford University Press.

Rubach, Jerzy (2000a). Backness switch in Russian. *Phonology* 17: 39–64.

Rubach, Jerzy (2000b). Glide and glottal stop insertion in Slavic languages: A DOT analysis. *Linguistic Inquiry* 31: 271–317.

Rubach, Jerzy (2002). An overview of Palatalization-*i*. *Studies in Phonetics, Phonology and Morphology* 8.2: 169–186.

Rubach Jerzy (2003a). Duke-of-York derivations in Polish. *Linguistic Inquiry* 34(4): 601–629.

Rubach, Jerzy (2003b). Polish palatalization in Derivational Optimality Theory. *Lingua* 113: 197–237.

Rubach, Jerzy (2006). Perspectives on Polish Palatalization. *Poznań Studies on Contemporary Linguistics* 42: 239–268.

Rubach, Jerzy (2008a). An Overview of Lexical Phonology. *Language and Linguistics Compass* 2: 456–477.

Rubach, Jerzy (2008b). Prevocalic faithfulness. *Phonology* 25: 433–468.

Rubach, Jerzy (2011). Syllabic repairs in Macedonian. *Lingua* 121: 237–268.

Rubach, Jerzy (2016). Polish yers: Representation and analysis. *Journal of Linguistics*: 1–46

Rubach, Jerzy (2017). Derivational Meanders of High Vowel Palatalization. *Lingua* 1999: 1–26.

Rubach, Jerzy (2019). Surface Velar Palatalization in Polish. *Natural Language & Linguistic Theory* 37: 1421–1462.

Rydzewski, Paweł (2014). Phonological consequences of the backness distinction in high vowels with reference to selected Slavic languages from the perspective of current American phonological theories. *Doctoral dissertation*. Uniwersytet Warszawski.

Rydzewski, Paweł (2016). A Polish argument for the underlying status of [ɨ]. *Studies in Polish Linguistics* 11: 111–131.

Rydzewski Paweł (2017). Unwarranted exceptionality: the case of Polish *y*. *Lingua* 89–90: 75–95.

Sagey, Elizabeth (1986). The representation of features in relations in non-linear phonology. *Doctoral dissertation*. Massachusetts Institute of Technology.

Sobierajski, Zenon (1964). *Polskie teksty gwarowe, zeszyt 4: Lubawskie – Ostródzkie – Kaszuby*. Poznań: Poznańskie Towarzystwo Przyjaciół Nauk.

Stone, Gerald (1993.) Cassubian. In Bernard Comrie & Greville G. Corbett (eds.), *The Slavonic languages*. 759–794. London: Routledge.

Sychta, Bernard (1967–1976). *Słownik gwar kaszubskich na tle kultury ludowej*. 7 vols. Wrocław: Ossolineum.

Ščerba, Lev V. (1912). Russkie glasnye v kachestvennom i kolichestvennom otnoshenii. St. Petersburg: Iu. N. Erlikh.

Topolińska, Zuzanna (1967). Teksty gwarowe centralnokaszubskie z komentarzem fonologicznym. *Studia z Filologii Polskiej i Słowiańskiej* 7: 87–125.

Topolińska, Zuzanna (1974). *A historical phonology of the Kashubian dialects of Polish*. The Hauge – Paris: Mouton.

Topolińska, Zuzanna (1982). *Opisy fonologiczne polskich punktów "Ogólnosłowiańskiego atlasu językowego". Zeszyt I. Kaszuby, Wielkopolska, Śląsk*. Wrocław – Warszawa – Kraków – Gdańsk – Łódź: Zakład Narodowy Imienia Ossolińskich, Wydawnictwo Polskiej Akademii Nauk.

Treder, Jerzy (ed.) (2002). *Język kaszubski: Poradnik encyklopedyczny*. Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego, Oficyna Czec.

Tréder, Jerzi (2014). *Spòdlowô wiédzô ò kaszëbiznie*. Gdańsk: Zrzeszenie Kaszubsko-Pomorskie.

Trepczyk, Jan (1994). *Słownik polsko-kaszubski* 2 vols. Gdańsk: Zrzeszenie Kaszubsko-

Pomorskie.

Wenta, Justyna (2009). Unexpected palatalization in the context of schwa in Kashubian. *Acta Philologica* 36. 110–120.

Wierzchowska, Bożena (1963). Budowa akustyczna a artykulacja dźwięków mowy. *Biuletyn Polskiego Towarzystwa Językoznawczego* 22: 3–23.

Wierzchowska, Bożenia (1971). *Wymowa polska*. Warszawa: Państwowe Zakłady Wydawnictw Szkolnych.

Wolf, Matthew (2011). Exceptionality. In Marc van Oostendorp, Colin J Ewen, Elizabeth Hume, Keren Rice (eds.) *The Blackwell Companion to Phonology. Volume IV. Phonological Interfaces*. Malden, MA: Wiley-Blackwell.

Zubritskaya, Ekatarina (1995). The categorial and variable phonology of Russian. *Doctoral dissertation*. University of Pennsylvania.

Appendix A: Fieldwork

The goal of this Appendix is to present the fieldwork I conducted in the village of Załakowo, in the Pomorskie voivodeship. The aim of the fieldwork was to investigate whether the speakers of Kashubian perceive [i] and [ɨ] as separate vowels or whether they consider them as two variants of a single vowel [i].

I conducted most part of the fieldwork in 28–30 December 2014 (with returning to my informants on a few later occasions). The proper fieldwork was preceded by a pilot study, which I conducted in July 2014. The pilot study consisted in recording the speakers in a free conversation and then eliciting from them some specific words and asking supplementary questions. However, after the pilot study I realized that I had to modify the original approach and include a survey in the proper fieldwork. This allowed me to limit the scope of obtained data and focus on the words containing high front and central vowels, namely [i ɨ ə] and investigate if, and if yes then which of the investigated vowels are involved in a palatalization process. I did not want to conduct a full-scale study, as I was able to anchor my research on a comprehensive research supported with acoustic analysis conducted by Jocz (2013, 2014). Jocz (2013) confirmed the occurrence of all three vowels I was occupied with. The aim of my fieldwork was to confirm the occurrence the front high and mid vowels in speakers living in a specified area, investigate how they perceive the high vowels, i.e. [i] and [ɨ], and gather examples containing palatalized consonants.

I interviewed four native speakers of Kashubian, born, raised, and living in the village of Załakowo. For all of my speakers Kashubian was the first language. They learned Polish only when they went to school. The speakers included two women aged 35 and 62, and two men, aged 38 and 47. The speakers were interviewed individually. Before the proper recording, that is, presenting the speakers with a questionnaire, I recorded their free conversation. The talk related to everyday events, such as Christmas and the upcoming New

Year. I also asked about their background and about their everyday use of Kashubian, as well as their first contact with Polish. All of my informants were bilingual, i.e. shared the competence of Kashubian and Polish. They had not lived abroad or in a different part of Poland. All of them were born and raised in the area. They attended secondary schools in the nearest towns, including Lębork, Sierakowice, and Kartuzy. They had not lived outside of the Kashubia throughout their lives and they all used Kashubian on a daily basis.

I used a Tascam DR-40 recorder in my fieldwork. Ryszard Wenta, also a native speaker of Kashubian, assisted me in the fieldwork. He helped me present the informants with the questions from my questionnaire and also himself provided the data. That is why I decided to include his input as the fifth speaker in my results. Mr Wenta was, just as other informants, born and raised in the village of Załakowo and Kashubian was his first language.

The questionnaire included a list of words, which were, whenever possible, minimal pairs contrasting the vowels under investigation: [i ɨ ə]. Some of the words were disguised in sentences in order not to invoke incorrect pronunciation or an unnatural intonation. The words were divided into sets containing initial syllables with [i ɨ ə] after the following consonants: [t], [p], [m], and [ts ʧ' ʃ']. They included a noun, an adjective and a verb, such as, for example, *bògati* (nom.sg.) *bògaté* (nom.pl.) *bògacëc* (V).

Finally, the informants answered three metalanguage questions: (i) Are there any words in Kashubian beginning with [ɨ]? and (ii) Are there any words in Kashubian beginning with [ə]? (iii) Is there a word in Kashubian with [ʦi] ([ʦ'i]) or [ʤi] ([ʤ'i]) cluster?

I then divided the recordings into single tokens in Audacity (ver. 2.2.2) and visually analysed the results in PRAAT (Boersma and Weenik: 2019). The procedure also consisted in segmenting the vowels in the content words and calculating F1 and F2 at the midpoint of each vowel. Next, I performed a simple statistical analysis with the marked vowel formants normalized with the Lobanov method.

The analysis was primarily concerned with the occurrence of [i ɨ ə] in accented syllables, if possible, in a similar or the same context (i.e. following the same consonant).

The results of the fieldwork are partially presented as examples in this dissertation. Appendix B provides the list of relevant tokens gathered in the fieldwork.

Appendix B: List of tokens

‘token’ – set of stimuli used in the study arranged in the alphabetical order

‘transcription’ – rendition(s) of a particular token[50]

‘gloss’ – meaning of the token in English

token	transcription	gloss
baro	barɔ	‘very’
bëc	bəʦ	‘to be’
bic	biʦ	‘to hit’
bije	bijɛ	‘hit’ (3rd pers.sg.)
białka	bjawka	‘woman’
biôłô	bjɛwɨ	‘white’ (fem.)
bleczec	bleʃ’ɛʦ	‘to cry’
blérwa	bliɾva	‘cow’
bùlwë	bulvə	‘potatoes’
bik	bək bɨk	‘bull’
bògati	bwɛgatɨ	‘rich’ (masc.)
bògatô	bwɛgatɨ	‘rich’ (fem.)
całô	ʦawɨ	‘whole’ (fem.)
cenczi	ʦɛnʧ’i	‘thin’ (masc.)
cenkô	ʦɛnkɨ	‘thin’ (fem.)
chcôł	xʦɨw	‘wanted’ (V)
chëcz	xəʧ’	‘house’
chłop	xwɔp	‘man’

[50] Impressionistic transcription of the data confirmed by the acoustic analysis.

codzénno	tsɔdʑinnɔ	‘every day’
cygnął	tsɨgnuw	‘pulled’ (V)
czëc	ʧ’əts	‘to hear’
czij	ʧ’ij	‘stick’
dele	dɛlɛ	‘gave’
dëch	dəx	‘ghost’
dërch	dərx	‘still’
dëtk	dətk	‘coin’
dim	dɨm	‘smoke’
dëmi	dəmi	‘smokes’ (V)
dłudżi	dwuʤ’i	‘long’ (masc.)
długô	dwugɨ	‘long’ (fem.)
drëdżi	drəʤ’i	‘second’ (masc.)
dôka	dəka	‘fog’
dóm	dum	‘I will give’
drodżi	drɔʤ’i	‘expensive’ (masc.)
drogô	drɔgɨ	‘expensive’ (fem.)
dzëczi	dzəʧ’i	‘wild’ (masc.)
dzëk	dzək	‘boar’
dzëkô	dzəkɨ	‘wild’ (fem.)
dzéwczã	dzɨfʧ’a	‘daugther’
dzyra	ʤɨra	‘hole’
dzys	ʤɨs	‘today’
dzywny	ʤɨvnɨ	‘strange’ (masc.)
dzywnô	ʤɨvnɨ	‘strange’ (fem.)

gazéta	gazita	‘newspaper’
głëchi	gwɛxɨ	‘deaf’
głupi	gwəpɨ	‘stupid’ (masc.)
głupô	gwəpɨ	‘stupid’ (fem.)
gòłi	gwɛwɨ	‘naked’
gòni	gwɛɲi	‘runs’ (V)
uwò	ɨwɛ	‘here’
ja	jɛ	‘I’
jô	jɔ	‘yes’
kaszëbskô	kaʃ’əbskɨ	‘Kashubian’ (fem.)
knôp	knɨp	‘son’
kòżdi	kɔʒ’dɨ	‘everyone’
królewsczi	krulefʃ’ʧ’i	‘king’s’
lëchi	ləxɨ	‘of poor quality’
lëdzczi	ləʦʧ’i	‘human’ (masc. adj.)
lëdzkô	ləʦkɨ	‘human’ (fem. adj.)
lës	ləs	‘fox’
mech	mɛx	‘moss’
mësz	məʃ’	‘mouse’
mëszë	məʃ’ə	‘mice’
młodi	mwɛdɨ	‘young’ (masc.)
młodô	mwɛdɨ	‘young’ (fem.)
mòżna	mɔʒ’na	‘can’ (V)
mòdlimë	mwɔdlimə	‘prey’ (V, PL)
msza	mʃ’a	‘mass’

òsëmnôsti	wɔsəmnɛstɨ	‘eighteenth’
pasyk	pasɨk	‘belt’
pësk	pəsk	‘mouth’
pic	pitʂ	‘drink’ (V)
pierszi	pjɛrʃ’i	‘first’
pòlityk	pɔlitik	‘politician’
pòlitika	pɔlitika	‘politics’
pila	pɨla	‘little goose’
rëczy	rətʃ’i	‘roars’ (V)
rëbë	rəbə	‘fish’ (pl.)
rëżawi	riʒ’awɨ	‘redheaded’
sëchi	səxɨ	‘dry’ (masc.)
sëny	sənɨ	‘grey’ (masc.)
słodczi	swɔttʃ’i	‘sweet’ (masc.)
sprzëdac	spʃɛdatʂ	‘to sell’
sprzedóny	spʃɛdunɨ	‘sold’
spuchłi	spuxwɨ	‘swollen’
stegna	stɛgna	‘road’
swinia	sfiɲja	‘pig’
tacë	tatsɛ	‘father’ (dat.)
tatë	tatə	‘father’ (gen.)
trzecy	tʃɛtsɨ	‘third’
të	tɨ tə	‘you’
waji	vaji	‘yours’ (pl.)

wãps	vɔps	‘sweater’
wëdo	vɨda	‘(s)he will spend’
wëdra	vɨdra	‘otter’
wialdżi	vjɛldʒ’i	‘big’ (masc.)
wialgô	vjalgɨ	‘big’ (fem.)
widë	vidə vidɨ	‘light’ (gen.)
widzec	vidzɛʦ	‘to see’
wiedno	vjɛdno	‘all the time’
Witek	vitɛk	male name
wóz	wus	‘carriage’
wôga	vɛga	‘weight’
Zimmerman	ʦɨmɛrman	surname
zlizôł	zliziw zliziw	‘he licked’
zważëc	zvaʒ’ɛʦ	‘to weigh’
żakét	ʒ’akit	‘jacket’
żeniału	ʒ’ɛɲawɨ	‘married’ (adj.)
żëwi	ʒ’əvɨ	‘alive’

Streszczenie

Niniejsza rozprawa stanowi analizę procesów palatalizacyjnych w języku kaszubskim, używanym we wschodniej części Pomorza. Procesy te badane są w ramach trzech teorii fonologii przyjmujących podstawowe założenia fonologii generatywnej: Fonologii Leksykalnej, Teorii Optymalności oraz Derywacyjnej Teorii Optymalności. Podstawowym celem rozprawy jest porównanie użyteczności tych teorii w odniesieniu materiału zaczerpniętego z języka kaszubskiego. Rozprawa ma na celu analizę procesów palatalizacyjnych w szczególności dotyczących spółgłosek przedniojęzykowych (koronalnych) i tylnojęzykowych (welarnych). Kolejnym celem rozprawy jest wzięcie udziału w toczącej się debacie na temat statusu samogłoski [ɨ] w językach słowiańskich, tj. przyczynienie się do ustalenia czy [ɨ] jest alofonem /i/, czy też stanowi niezależny fonem.

Niniejsza rozprawa została podzielona na sześć rozdziałów. W rozdziale 1 przedstawiono cele rozprawy i podstawy teorii Fonologii Leksykalnej oraz Teorii Optymalności.

Rozdział 2 prezentuje podstawowe fakty dotyczące cech dystynktywnych oraz ograniczeń występowania w słowie kaszubskich spółgłosek i samogłosek istotnych z punktu widzenia analizy procesów palatalizacyjnych. Rozdział ten zawiera również przegląd literatury dotyczącej reprezentacji fonologicznej samogłosek kaszubskich oraz próbę umieszczenia samogłosek omawianych w literaturze na diagramach samogłoskowych. Omówienie koncentruje się na dialektach środkowokaszubskich. W ostatniej części rozdziału przeprowadzono powtórną analizę diagramu samogłosek środkowokaszubskich zaproponowanego przez Jocza (2013) skupiając się jedynie na współczesnej wymowie przedstawionych na diagramie samogłosek. W wyniku analizy zaproponowano diagram samogłoskowy dla współczesnych samogłosek środkowokaszubskich.

W rozdziale 3 przedstawiono przegląd najważniejszych stanowisk dotyczących statusu fonemicznego samogłoski /ɨ/ w językach słowiańskich. Zarys ten obejmuje przegląd najważniejszych stanowisk dotyczących fonemicznego statusu samogłoski [ɨ], począwszy od Jana Baudouina de Courtenay aż do ujęć współczesnych, z uwzględnieniem analizy samogłosek polskich Rydzewskiego (2016, 2017) jako najnowszego przyczynku do dyskusji. Ostatnia część rozdziału przenosi na grunt języka kaszubskiego argumenty za uznaniem [ɨ] jako niezależnego fonemu oraz przeciwko takiemu uznaniu tej samogłoski.

Rozdział 4 zajmuje się zagadnieniem procesów palatalizacyjnych w klasie spółgłosek przedniojęzykowych (koronalnych). Jako punkt wyjścia przyjęto regułę fonologiczną zwaną Palatalizacją koronalną, która zmiękcza spółgłoski przedniojęzykowe w obecności przednich wysokich i centralnych samogłosek (tzn. /i ɛ/). Ramy dla proponowanej analizy stanowi teoria Fonologii Leksykalnej. W pierwszej części rozdziału przedstawiono podstawowe generalizacje dotyczące zachowania spółgłosek koronalnych w obecności /i ɛ/, zaobserwowane w języku kaszubskim. Poprzez analogię z innymi regułami fonologicznymi, czyli Palatalizacją labialną i Palatalizacją welarną, dowiedziono, że przytoczone generalizacje, obejmujące zmianę *t d* → *t͡s d͡z*, to przykłady Palatalizacji koronalnej, której rezultaty są nieprzejrzyste w języku kaszubskim. Nieprzejrzystość polega na tym, że rezultatami reguły są twarde spółgłoski dziąsłowe, podczas gdy proces palatalizacji z definicji polega na zmiękczeniu spółgłoski. Zjawisko to jest przykładem tzw. gambitu księcia Yorku, w którym twarda spółgłoska wsadowa zostaje przekształcona w miękki segment pośredni, tylko po to, aby stać się segmentem twardym na powierzchni. W kolejnych częściach rozdziału omówiono interakcję pomiędzy regułami Palatalizacji koronalnej i Palatalizacji welarnej, oraz innymi regułami, w tym Uprzednieniem welarnym, Zmiękczeniem welarnym oraz Stwardnieniem. W rozdziale zaproponowano reprezentacje głębokie dla męskiej i żeńskiej końcówki przymiotnika. Rozważono trzy scenariusze kształtu końcówki męskiej

przymiotnika: //i//, alomorfy //i// oraz //ɨ//, a także //ɨ//, przy czym w trzecim scenariuszu męska i żeńska końcówka przymiotnika włączana jest do derywacji na różnych poziomach. Następnie dokonano próby analizy przymiotników odrzeczownikowych, przy uwzględnieniu ustalonych faktów.

Rozdział 5 to analiza tych samych procesów palatalizacyjnych, tym razem w ramach Teorii Optymalności. Na początku rozdziału omówiono podstawowe generalizacje dotyczące zachowani spółgłosek przedniojęzykowych w obecności /i ɛ/ oraz mechanizm palatalizacji w Teorii Optymalności, tzn. przedstawiono ograniczenia językowe ważne z punktu widzenia ewaluacji przytoczonych przykładów palatalizacji. Następnie przedstawiono analizę procesów palatalizacyjnych wywoływanych przez //i// oraz przez //ɛ// obecnych w strukturze głębokiej. Analizę rozpoczęto od procesów dotykających spółgłoski tylnojęzykowe (welarne). Analiza niemal natychmiast napotkała trudności, ponieważ klasyczna Teoria Optymalności, nawet z teoriami pomocniczymi, nie jest w stanie wyjaśnić nieprzejrzystości procesów fonologicznych. Omawiane dane wymagają zastosowania innych ram teoretycznych, co prowadzi do zastosowania Derywacyjnej Teorii Optymalności – modyfikacji klasycznej Teorii Optymalności, pozwalającej na rozróżnienie poziomów ewaluacji. W kolejnej części rozdziału przedstawiono podstawowe zagadnienia Derywacyjnej Teorii Optymalności. Następnie ponownie, tym razem skutecznie, przeanalizowano procesy palatalizacyjne w ramach proponowanej teorii. Druga część rozdziału 5 omawia procesy palatalizacyjne dotykające spółgłosek przedniojęzykowych (koronalnych) w sposób analogiczny do analizy procesów palatalizacyjnych dotykających spółgłosek welarnych. Derywacyjna Teoria Optymalności pozwala na skuteczne wyjaśnienie analizowanych danych.

Rozdział 6 zawiera podsumowanie dyskusji oraz konkluzje.