

# Mutual intelligibility and Slavic constructed interlanguages : a comparative study of *Ruski Jezik* and Interslavic

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# INTRODUCTION

## 1.1. Abstract

In this thesis, I will study the structure of two constructed Slavic interlanguages from different eras : Ruski Jezik, created by Juraj Križanić in the middle of the 17th century, and Interslavic, a contemporary project led by Vojtěch Merunka. I will discuss the different solutions they offer to tackle the issues of mutual intelligibility amongst the native speakers of Slavic languages. In part one, I will examine the factors of mutual intelligibility and different approaches to Slavic mutual intelligibility. In part two, I will review the common and divergent features of Slavic languages in different areas, and analyse the grammars of both interlanguages in order to discuss the solutions they bring to issues in mutual intelligibility.

## 1.2. Definitions

Before examining Slavic constructed Interlanguages, we must define what they are and the part they play in mutual intelligibility-related issues.

### 1.2.1. Constructed languages

Constructed languages, sometimes abbreviated “Conlangs”, are languages that were consciously designed by a person or a group. Unlike natural languages which evolve organically (although they can be standardized and regulated), constructed languages have a specific purpose. They can be classified in different ways (Gobbo 2020) according to :

- Their function : philosophical, logical, auxiliary for internal communication;
- The sources of their material : *a priori* languages are built from scratch, and *a posteriori* languages are built using data from natural languages;

- Their typological properties : word-order, phonological inventory, morphological features etc (similarly to natural languages;)
- The medium they were constructed for : writing-oriented language, spoken language or both;
- Their development and state of use.

Esperanto, for example, is an auxiliary international language based on Indo-European languages (*a posteriori*). It is intended for both written and spoken use and has consistent typological properties. Although it hasn't achieved the stage of pan-European *lingua franca* it was designed for, Esperanto is the most well-known constructed language. Many documents on various topics and a solid corpus of original literature have been published in the language, which has two million speakers around the world ('Esperanto | Ethnologue' n.d.).

### 1.2.2. Interlanguage

Esperanto-like languages are designed with socio-political ambitions in mind. Language construction can be part of the "language planning", that is "the attempt to control the use, status, and structure of a language through a language policy developed by a government or other authority" ("Language Planning" in Oxford University Press n.d. ).

The concept of "Interlanguage" implies both linguistic creation and a political take. It is defined by Gobbo as the "language varieties that come out as a result of considerable contact between two or more languages" (Gobbo 2020, 18). Interlanguages, artificial or not, are composite languages with communication as their prime goal. They are difficult to classify, as they can hardly be associated with one parent language the way languages are in a traditional *Stammbaum* representation.

The term "interlanguage" is also used in different fields of linguistics. In second-language acquisition, it is defined as "a transitional variety of the target language influenced by the previous repertoire of the learner, notably the L1, but also already learnt L2" (Gobbo 2020, 18). In Creolistics (or Creology), Pidgins and Creoles are sometimes interpreted as interlanguages, because they display features from several languages that have been in contact in a colonial context. In this thesis, I will keep both concept separated, because Creoles emerge from specific social contexts that differ from those of Interlanguages.

Ruski Jezik and Interslavic are interlanguages as defined by Gobbo. However, the other definitions of this term must be kept in mind. Second-language acquisition is an important factor which is taken into account when constructing an interlanguage, as

the latter aims at being understood and learnable for its future speakers. Interlanguages, constructed or not, also tend to arise in certain political contexts where several groups have or wish to communicate with each other in order to build a bigger united community.

### 1.2.3. Mutual intelligibility

In her dissertation on the mutual intelligibility of Slavic languages, Jelena Golubović (Golubović, 2016) define “intelligibility” as “the act of understanding under unfavorable conditions”. Intelligibility is mutual when it not unidirectional : this is what happens when speakers of closely related languages understand each other up to a certain point. It is then “the ability to understand a language by virtue of it sharing some similarities to another language the participant speaks” (Golubović 2016, 16).

Mutual intelligibility is a question of degree rather than a yes or no question, as mutuality does not equal symmetry : speakers of a language A can understand a language B better than speakers of B understand language A. Mutual intelligibility is influenced by numerous linguistic and extra-linguistic factors that will be discussed in this thesis.

## 1.3. Object of study

My two objects of study are the constructed Slavic Interlanguages *Ruski Jezik* and *Interslavic*. In this chapter, I will give a quick overview of the history of Slavic constructed languages followed by a presentation of my objects of study and their common features.

### 1.3.1. History of Slavic constructed languages

I will give here a quick overview of the history of Slavic constructed languages following the lead provided in (Meyer 2016). The history of Slavic constructed languages can be divided in three periods : the Pan-Slavic languages, the Esperanto-inspired projects and the contemporary projects.

The author mentions the case of Old Church Slavonic (9th-11th century), which some scholars consider to be the first constructed Slavic language because of its origin, features and use. However, texts in OCS show many variations depending on their location and the time they were written. The absence of an official or explicit grammar of Old Church Slavonic makes it more of a “grammatical abstraction” rather than a

proper constructed language. Like Medieval Latin, OCS was used as an additional mean of communication for the Orthodox Church in the Slavic area, and was never a mother tongue.

*Ruski Jezik* (17th century) is the first language that undoubtedly qualifies as a constructed Slavic language. A detailed history of the language will be given in the next part (1.3.2)

- *Pan-Slavic languages (19th century)*

Those constructed languages were following the Pan-Slavic ideas which arose at the beginning of the 19th century. Their creators had the ambition of designing languages that could be spoken by all the Slavs, and would eventually lead to the merging of all Slavic languages into one. This derives from a vision of the Slavic world as a political, cultural and religious unit that should be reinforced.

Jan Herkel (around 1826), who coined the term “Pan-Slavism” (see Meyer 2016), was the inventor of a “Slavic language” designed for this purpose. He proceeded to reduce the number of inflectional classes and simplify the writing system of Slavic languages.

In 1853, *Vseslavenski* was designed by the Slovene priest and linguist Božidar Raič. It is based on Old Church Slavonic and reproduces its complex structures in the nominal morphology (seven cases, three numbers), but does not deal with verbal morphology, which is left as a flexible area.

Matija Majar Ziljski's *Uzajemni slavjanski jezik* was designed in 1863-1865. Ziljski was an advocate of Austro-Slavism and then Pan-Slavism. The language follows the general grammatical structures of Slavic languages (seven cases, three genders, four declension patterns). Ziljski described his language as free from “provincialisms” and “idiotisms”, and it was first intended for written communication and literary creation.

- *Esperanto-inspired projects*

Ignác Hošek's *Neuslavisch* was designed in 1907 for the Slavs in the Habsburg Monarchy, as well as the Germanic-speaking population of the region. It was built as an “umbrella” language for all Slavic languages and keeps the structural complexity of most Slavic languages (three genders, six cases, category of animacy ...). The grammar of *Neuslavisch* was published (in German) as a textbook, showing the author's focus on language acquisition.



*Slovanština*, created in 1912 by Edmund Kolkop, is the first schematic project for a constructed Slavic interlanguage. The reduced grammatical complexity, deletion of irregularities and agglutinative structure of the language was directly inspired by the Esperanto project.

Josef Konečný's *Slavina*, created in 1912 was presented by the author as "Slavic Esperanto". Although he regularized the declension patterns and standardized the plural forms for all genders, it is much more of a naturalistic project than a schematic one, and doesn't have the schematic structure of Esperanto.

- *Contemporary projects*

*Slovio* is a project started in 1999 by Mark Hučko, which aims at becoming a language for all Slavs and, eventually, an universal language. Hučko's political views, which can be qualified as Pan-Slavic, are an important part of the *Slovio* project, and the reason for the creation of an interlanguage. It is a schematic language, with analytic structures inspired by Esperanto and English.

*Slovianski* and *Novoslovienski* are two contemporary projects that I will review in the following part (1.3.2)

### 1.3.2. *Ruski Jezik* & Interslavic

- *Ruski Jezik (17th century)*

*Ruski Jezik* was created and used by the Croatian Catholic missionary Juraj Križanić (1618-1683) in the second half of the 17th century. It is based on Old Church Slavonic with elements of Russian, literary Croatian and other Slavic languages (Kolovrat-Butenko 2015). The creation of *Ruski Jezik* supported the political views of its creator, who believed in the Slavic religious and cultural unity, and wanted a common language to reinforce a Slavic unity against the Germanic and Turkish empires. Križanić published a complete grammar of this language (*Gramatichno izkazanje ob ruskom jeziku*, 1659-1666) that he wrote during his exile in Tobol'sk. He then wrote several books on politics, religion and history using his constructed language in lieu of Latin or Greek. *Razgovory o vladatelstvu* (Križanić 1663-1666), also known as *Politika*, is one of his most famous work. Because Križanić was "rejecting Church Slavonic which united only the Orthodox and requiring a genuine Slavonic vernacular - free of foreign elements, he insists - which would be acceptable to all Slavs" (Du Feu 1975). His quest for linguistic purity yielded, according to Du Feu a "capricious idiolect with a chauvinist slant".

The use of *Ruski Jezik* never spread to the Slavic world, and no authors other than Križanić published in this language. Still, his systematic work on Slavic languages and the creation of a Pan-Slavic language, as well as his political views, made him an important figure in the Pan-Slavic movement and a person of interest for aspiring language planners.

- *Interslavic (21th century)*

*Interslavic* refers to two projects of constructed Slavic interlanguage that merged together : *Slovianski* and *Novoslovienski*. According to Wikipedia ('Interslavic Language' n.d.), Interslavic has 2000 speakers, but measuring the number of speakers of an interlanguage like this one is difficult. Several learners are discussing the language and testing the communicative efficiency of Interslavic on forums, facebook groups and websites (see 'Interslavic - Medžuslovjansky - Меджусловјанскы' n.d.; 'R/Interslavic', n.d.). Most of the publications in Interslavic are on the web : they are mostly newspaper articles or posts related to Slavic culture, politics or history (see 'Publications about Interslavic', n.d.). In 2019, Interslavic was used in a movie ('The Painted Bird' 2020), offering some visibility to the language.

*Slovianski* is a project initiated by the Dutch linguist Jan van Steenberghe in 2006. It is a naturalistic project, but shows a lot of regularization and grammatical reduction compared to natural Slavic languages. It is aimed at Slavic speakers and non-speakers, and takes into account the struggles of non-Slavic speakers learning a Slavic language.

*Novoslovienski* is a project started by Vojtěch Merunka in 2010. He published an extensive grammar of the language in 2012 (Merunka 2012), and an introduction to the language for English speakers in 2018 (Merunka 2018). *Novoslovienski* can be written using both the Latin and Cyrillic scripts, but also the Greek and Glagolitic ones. Merunka defines *Novoslovienski* as a "dialect of Old Church Slavonic", which aims at creating a bridge between old texts and modern speakers of Slavic languages. *Novoslovienski* has obtained funding from the Grundtvig program of the European Union to teach the language, and its use has been adopted by several monasteries in the South-East of the Slavic area (Merunka 2018).

I will use the term "Interslavic" to refer to the fusion of both projects, but I will use Merunka's work and publications as a reference, therefore focusing my research on *Novoslovienski*.

### 1.3.3. Shared aspects of *Ruski Jezik* and *Interslavic*

*Ruski Jezik* and *Interslavic* are both *a posteriori* languages, based on Slavic material. Unlike *Slovio*, *Slovianski* and *Novoslovienski* (*Interslavic*) are naturalistic projects : they aim at creating natural-sounding languages that native Slavic speakers could instantly understand.

Although *Novoslovienski* was created centuries after *Ruski Jezik*, the two projects share some similarities. They both rely a lot on the Old Church Slavonic data and aim at being mutually intelligible with other Slavic languages. They follow a political vision of the Slavic unity : both projects are intended to ease communication between Slavic peoples and are connected to the Church. Their main difference is that *Ruski Jezik* aims at a form of “linguistic purity”, whereas *Interslavic* has communication for its main goal, and therefore can include foreign elements.

## 1.4. Relevance of the study

### 1.4.1. Constructed languages and mutual intelligibility

Issues in mutual intelligibility between Slavic speakers are the reason why interlanguages were designed. The study of constructed Interlanguage can provide good clues on the problematic areas of intelligibility between Slavic languages, and possible solutions to overcome those issues if they are proven efficient for communication. A modern interlanguage could be tested for mutual intelligibility with other Slavic languages the way natural languages are tested. It could also be a tool to study the mechanisms of second-language acquisition in situations of receptive bilingualism, and help draw a clear picture of the linguistic predictors of mutual intelligibility.

### 1.4.2. Comparative study of *Ruski Jezik* and *Interslavic*

Studying both *Ruski Jezik* and *Interslavic*, which date from very different periods, is interesting for several reasons. Although the different eras of their creation must be kept in mind, the linguistic features of *Ruski Jezik* and *Interslavic* can be compared in a sort of pseudo-synchronic study. This method gives the opportunity to discuss different - or similar - solutions to issues in mutual intelligibility.

### 1.4.3. Historical linguistics

Although many linguists did not consider constructed languages as valuable objects of study (Libert 2018), constructed languages might be a captivating area of study for historical linguists. Constructed interlanguages aiming at a “balance” between languages are sorts of adoptive daughters in the genealogy of existing languages. Both *Ruski Jezik* and *Interslavic* are preoccupied with a form of historical consistency : they are designed to become an organic part of the Slavic family.

In a way, interlanguages have a lot in common with reconstructed proto-languages. They are non-attested languages built as a set of resemblances between languages of a same group. Like proto-languages in comparative linguistics, they synthesize the shared features of related languages and draw a picture of their similarities in every linguistic areas (phonology, morphology, syntax, lexicon).

The comparative method used in historical linguistics can be applied “backwards” to Slavic constructed interlanguages. Instead of re-constructing a parent language from a set of languages, we start from one constructed languages and analyze whether its relationship to its adoptive daughter languages is consistent.

## 1.5. Structure of the thesis

### 1.5.1. Research question

Acknowledging the political and extra-linguistic aspects of Slavic interlanguages are an important dimension of their study, I chose to focus on the linguistic features of *Ruski Jezik* and *Interslavic*. I will study the solutions offered by Slavic interlanguages to overcome issues in mutual intelligibility by examining the two interlanguages.

**How do *Ruski Jezik* and *Novoslovienski* try and overcome the main obstacles to mutual intelligibility between Slavic languages, in the areas of lexicon, phonology and morphosyntax ?**

The thesis will be divided in two parts, each one answering to several subquestions :

#### **I. Approaches to Slavic mutual intelligibility and their conclusions.**

I.1. What are the different predictors of mutual intelligibility, and the measurement methods ?

I.2. What is the degree of mutual intelligibility in the Slavic area ?

I.3. What other elements will influence the design of a constructed interlanguage ?

## **II. Comparative study of Ruski Jezik and Interslavic : what solutions do Ruski Jezik and Interslavic bring to different issues in the areas of ... ?**

II.1. Lexicon

II.2. Phonology

II.3. Morphosyntax

## **1.8. Description of the method**

### **1.8.1. Part 1 : Approaches to Slavic mutual intelligibility and their conclusions**

In Part I, I will review the methods used to measure mutual intelligibility and the conclusions that were reached using them for the degree of mutual intelligibility of Slavic languages. I will focus on three linguistic areas, namely Lexicon, Phonology and Morphosyntax. I will then examine the mutual intelligibility of Slavic languages through studies that were led in this area. I will also discuss linguistic features found in Creoles, Pidgins and constructed languages like Esperanto that are classified as “easy” for L2-acquisition. Such features could potentially be found in interlanguages because of their reputation of “easiness”.

### **1.8.2. Part 2 : Study of Ruski Jezik and Interslavic**

In Part II, I will study my primary sources (the grammars of *Ruski Jezik* and *Interslavic*), as well as scholarly studies of *Ruski Jezik*, and observe the similarities and differences in the areas of Lexicon, Phonology and Morphosyntax. Using the theoretical knowledge of the factors of mutual intelligibility, I will discuss the solutions proposed by the constructed interlanguages.

## **I. Approaches to Slavic mutual intelligibility and their conclusions**

## I.1. Factors of mutual intelligibility

I will review here the different variables that must be taken into account when considering mutual intelligibility, in general and in the specific case of Slavic languages. I will briefly display the methods used to predict intelligibility in different areas of linguistics.

### I.1.1. Extra-linguistic factors

Extra-linguistic factors influencing mutual intelligibility belong to different fields of speech sciences, namely sociolinguistics, psycholinguistics and pragmatics.

A speaker's attitude or previous exposure to a language can influence their will and ability to understand it. Previous exposure has been proven to be more influential than attitude because of a "learning effect" which appears quickly, in real life as well as in experimental settings (Golubović 2016, 146).

Two psycholinguistic phenomena play an important role in mutual intelligibility. The number of words phonologically resembling another (word neighborhood) must be taken into account : the larger the number of neighboring words, the higher the chance of confusion and lower intelligibility. Consequently, word-length is also a relevant factor, because longer words tend to have less neighbors. Such phenomena are important for word-level intelligibility, and even more for text-level intelligibility (Jágrová et al. 2019).

In non-experimental settings of semi-communication, pragmatics and body language play an important part. The possibility for speakers to point at things or gesture is important for the success of the interaction. The "foreigner talk" that one adopts when talking to a non-native speaker of their language differs from their usual communication style. It usually includes slow speaking, using a wider pitch range, avoiding complex grammatical structures and contracted forms, and use "easy" or "international" words (Gooskens et al. 2018, 201).

A comprehensive model of mutual intelligibility between closely related languages necessarily has to be complex, because it should include many factors outside the scope of sole linguistics.

### I.1.2. Linguistic predictors of mutual intelligibility

I will review here the main linguistic predictors of mutual intelligibility. I will examine different linguistic areas (phonology, lexicon, morphology and syntax) and discuss their respective roles in mutual intelligibility. Most of the literature I will consider is about Germanic and Romance languages (Gooskens et al. 2018; Gooskens 2013; Gooskens and Swarte 2017; Gooskens, Heeringa, and Beijering 2008), except for Golubović' work on the Slavic languages (Golubović 2016). I will analyse their conclusions and where they diverge.

#### *I.1.2.1. Lexical distance*

Lexical distance is one of the most important predictor of mutual intelligibility. Quite intuitively, it seems obvious that speakers of languages without any common word could hardly, if not at all, understand each other. Lexical distance is simply expressed as the percentage of non-cognates words between two (or more) languages (Gooskens 2013). Lexical distance is usually calculated on a restricted list of words, usually inspired by the Swadesh list. The SlavMatrix, for instance, calculates lexical distance using Pan-Slavic vocabulary and "Top 100" of frequent nouns and verbs (Stenger 2020).

Lexical distance, put in a percentage, is an important predictor of mutual intelligibility between closely related languages. Calculation of lexical distance is essential, because the list of cognates obtained from this measure will be the base for measurement of phonological distance.

In Golubović 2016, the list of "cognates" used comprises "any words which have a common root and which are similar in form and meaning, which means that the expanded definition also included loanwords that Slavic languages might share" (Golubović 2016, 98). The definition of "cognate" might slightly vary between studies, sometimes including shared lexicon from contact or common borrowings from another language (for instance, English technology-related words).

#### *I.1.2.2. Phonological distance*

Phonological distance is calculated based on a list of cognates using Levenshtein distance. Levenshtein distance is "a simple distance metric derived from the number of edit operations needed to transform one string into another" (Greenhill 2011, 1). It counts how many operations are needed for a phonological string to transform into another. According to several studies (Gooskens, Heeringa, and Beijering 2008; Golubović 2016; Hilton, Gooskens, and Schüppert 2013) phonological distance, associated with lexical distance, is the most reliable predictor of mutual intelligibility.

An important issue with Levenshtein distance is that, in its default settings, it doesn't rank phonological processes and types of similarities. Because it only measures surface similarities, chance similarities are worth the same number of "points" than shared innovations or retentions (Greenhill 2011). This is important because shared innovations or retentions tend to yield regular phonological correspondences, whereas chance similarities or common borrowings can not be used as a base to establish regular phonological correspondences between languages. Regular phonological correspondences play an important role in mutual intelligibility (see II.2.1.3), and that is why a refined measurement of phonological distance should differentiate historical cognates and surface-similar cognates.

Another limitation of Levenshtein distance is that some morpho-phonological processes are computed as several operations when they are just one. Metathesis and reduplication, for example, weigh several operations, when the distance between a reduplicated morpheme and its non-reduplicated form is probably not as big as Levenshtein algorithm would let researcher think.

Several researchers use refined versions of the Levenshtein measurement. Gooskens uses a variant of Levenshtein distance where vowels and consonants are differentiated, following the assumption that "consonants function as reference points in words while vowels tend to be more variable and change over time more rapidly than consonants do". This assumption is based on Ashby and Maidment 2005 (Ashby and Maidment 2005, 13), where the authors show that this is the case "at least in some languages". As an evidence, vowel systems tend to change faster than consonant systems, (e.g. the Great Vowel Shift in English). The authors adds that "two accents of the same language are likely to differ much more in the vowels and diphthongs they use than in their consonant systems" (Ashby and Maidment 2005, 81). Such conclusions are mostly drawn from the English data which, compared to the Slavic languages under investigation, has a relatively large inventory of vowels compared to the number of consonants ('WALS Online - Feature 3A: Consonant-Vowel Ratio' n.d.). In any case, it seems relevant to measure phonological distances of vowels and consonants separately.

Gooskens (Gooskens, Heeringa, and Beijering 2008) classifies phonological processes by type (insertions, deletions ...) to measure the impact of each operations on mutual intelligibility. The INCOMSLAV platform, dedicated to the study of Slavic mutual intelligibility, adds calculations of conditional entropy to account for asymmetry in mutual intelligibility (Stenger 2020). The fact that speakers of language A can understand language B better than speaker of language B understand language A is important to understand in depth how mutual intelligibility works. The study of correlation between intelligibility and conditional entropy is a sublevel of the SlavMatrix, as detailed in Stenger 2020.



### *1.1.2.3. Morphosyntactic distance*

I put the study of morphology and syntax under the same category, morphosyntax, because it is hard to draw the line between them when discussing mutual intelligibility. It is a general consensus that lexical distance and phonological distance measured with Levenshtein Distance are the best predictors of mutual intelligibility. The methods used to measure them are quite well-established, although possible refinements can be added for more accuracy. Regarding morphosyntax, approaches vary a lot more and their results differ a lot. The importance of morphosyntax in predicting mutual intelligibility depends on the level of the study (text-level, word-level) and the linguistic features of the languages under examination.

#### *1.1.2.3.1. Methods of measurements*

Morphosyntactic distance is trickier to measure than phonological and lexical distance. It can be done either by calculating it using linguistic data detached from the speaker, or by evaluating how much of a language A speakers of a language B can understand in experimental settings where the focus is on morphosyntax.

Measuring the orthographic distance of affixes using the Levenshtein algorithm is a way to assess morphosyntactic distance. It consists in calculating the orthographic distance (number of operations to transform a string into another) between affixes of different languages. This method is used by Golubović (Golubović 2016) on Slavic languages. Affixes in Slavic languages are typically inflectional suffixes. However, affixes in Slavic languages are marked for several information, and orthographic distance can not untangle the many layers of grammatical information carried by one affix. It is then hard to distinguish what specific morphological category or marking is an issue in mutual intelligibility.

Another way of measuring morphosyntactic distance is to test a speaker's comprehension of another language in cases where only morphosyntax should be problematic, namely by using obvious cognates and phonologically close words. Such an experimental study was done (Hilton, Gooskens, and Schüppert 2013) on Danish speakers facing Norwegian morphosyntactic constructions not found in their native languages. Most of the morphosyntactic constructions that were tested consisted in an added morpheme (Norwegian double definiteness), which "does not necessarily falter the comprehension of the sentence". Other cases included morphological elements whose meaning was broader in Norwegian (possessive pronouns), and others where a morphological element was "missing from its canonical position, such as is the case for

the sentences where particles or negators have been moved” (Hilton, Gooskens, and Schüppert 2013, p.13).

#### I.1.2.3.2. The importance of morphosyntax

The overall results of Hilton’s study were that a foreign morphosyntax has less impact on understanding than a foreign phonology, but the author herself admits that her experimental settings had its limitations. She also that word-order (i.e. when words are not found in their canonical positions) has a bigger impact on intelligibility than morphological differences.

Golubović, in her study on Slavic languages, reaches the opposite conclusion. She claims that “morphological and syntactic distance were significant predictors of text intelligibility” (Golubović 2016, 126). The measurements she makes on syntactic distance (using trigrams) show that word-order is not a relevant predictor of mutual intelligibility in the Slavic family. On the other hand, orthographic distance of affixes was an important predictor of mutual intelligibility. To carry out this study, the Latin alphabet was used and Cyrillic script were transliterated.

The differences between Golubović and Hilton et al. results show that the characteristics of the group of language studied - here, Slavic or Germanic - influences the degree of relevance of morphological and syntactic features in predicting mutual intelligibility. Because the majority of Slavic languages have inflectional morphology and a relatively free word-order, it makes sense that morphology plays a more important role than syntax in mutual intelligibility. This is illustrated by the case of Bulgarian which will be discussed later (see II.3.1.1 and II.3.2).

#### I.1.3. Conclusions

Several things must be taken into account when considering mutual intelligibility, including extra-linguistic factors like a speaker’s attitude and previous exposure, as well as pragmatics and context of communication. Orthographic variations between related languages can also become an obstacle to mutual intelligibility.

Three main measurements of purely linguistic mutual intelligibility exist. Lexical distance (percentage of non-cognates words between languages) is the most important one. Phonological distance, measured with a possibly refined Levenshtein algorithm is, paired with lexical distance, a main predictor of mutual intelligibility. Lexical distance and phonological distance in interlanguages will be discussed in part II.1 and II.2.

Morphosyntactic distance is complex to quantify, and conclusions on its influence in mutual intelligibility vary a lot more. Different elements are relevant depending on the group of languages under examination. Word-order, for example, is an important factor in Germanic languages but not in the Slavic family. This is explained by the generally free word-order and synthetic morphology of Slavic languages. Morphosyntax in the constructed interlanguages will be discussed in part II.3.

In the next part, I will focus on the specific situation of Slavic languages and their degree of mutual intelligibility.

## I.2. Mutual intelligibility in the Slavic area

### I.2.1. Degree of mutual intelligibility of Slavic languages

Due to the history of contacts in the Slavic area, Slavic languages are commonly believed to be very similar and to have a strong degree of mutual intelligibility. However, in her study on mutual intelligibility of European languages, Gooskens (Gooskens et al. 2018) concludes that there is a lower mean intelligibility (27,6%) in the Slavic family than in the Romance and Germanic families (36,4% and 40%). This conclusion is based on the results of a cloze test. It is noteworthy that in the Slavic family, the degree of mutual intelligibility between languages matches well with their historical divisions into subgroups (Gooskens et al. 2018; Golubović 2016; Avgustinova et al. 2015). Gooskens' explanation is that, because it is not common for Slavic speakers to learn or be exposed to neighbouring Slavic languages, no distinctions between exposed and non-exposed learners was made, and consequently their degree of mutual intelligibility simply followed the phylogenetic tree of Slavic languages. This conclusion seems a bit simplistic, because an extensive history of linguistic contact exists in the Western Slavic area, and the influence of Russian in the East and other languages in the Balkans (e.g. Turkish or Romanian) should not be forgotten.

Gooskens's study, because it is focused on Central Europe, does not involve East Slavic languages (Russian, Ukrainian, Belarussian), which is a questionable decision given the importance of the Russian linguistic influence in the Slavic area.

Gooskens comes to the interesting conclusion that :

“Slovak is the best understood language (38.2% correct across all language combinations) and the Slovaks are also best at understanding languages (39.4%). Bulgarian is difficult to understand for all groups (15.0% correct) and the

Bulgarians also understand very little of the other Slavic languages in our investigation (16.7%).” (Gooskens et al. 2018, 183)

This affirmation, that should be verified by other means, should be kept in mind when discussing the structures of Slavic interlanguages.

A comprehensive study of Slavic mutual intelligibility is led today using the INCOMSLAV platform (‘INCOMSLAV’ n.d.). It is built as a testing platform where speakers of Slavic languages can test their understanding of other Slavic languages. Variables such as age and previous exposure are taken into account. Non-native speakers of Slavic languages can also participate. The results are computed in the SlavMatrix (‘Result Statistics’ n.d.). The SlavMatrix functions with different levels (intelligibility, predictors, correlations), which can be used by scholars researching the mutual intelligibility of Slavic languages (Irina Stenger 2020). For now, the table is incomplete and many blanks are waiting to be filled. The most complete table is the automatically generated one for individual words. It is interesting to see that, contrary to the findings of Gooskens in text-level intelligibility (see fig. 1), Bulgarian generally scores high at word-level mutual intelligibility.

	Speaker			
Listener	BU	RU	CZ	PO
BU		69,9%	42,2%	42,3%
RU	68,6% <sup>1</sup>			
CZ	45,2%			
PO				

Fig. 1 : Word level intelligibility with Bulgarian, after the SlavMatrix (‘Result Statistics’ n.d.)

<sup>1</sup> Similar results were found in Stenger and Avgustinova 2020 : 71,33% of intelligibility in written form and 68,42% in spoken form.

	Speaker			
Listener	BU	(RU)	CZ	PO
BU			10,6%	7,1%

(RU)				
CZ	13,4%			
PO	13,7%			

Fig. 2 : Text-level intelligibility (cloze test method), after Gooskens et al. 2018.

Variation between the results of Bulgarian will be discussed in I.2.2. Slovak speakers score pretty high at word-level intelligibility, except when confronted to an Ukrainian stimuli, but the score of 4% is extremely low and seems like an extreme value that deserves further scrutiny. Those results lead Gooskens to the conclusion that Slovak is a “central” language, as opposed to more peripheral ones.

Because Gooskens study excludes the Eastern Slavic languages and the SlavMatrix is for now incomplete, it is hard to give an exact picture of the degree of mutual intelligibility of Slavic languages. However, some recurring elements like the outlying position of Bulgarian allow to understand the issues that a constructed Slavic interlanguage should address.

## I.2.2. The case of Bulgarian

Conclusions regarding the intelligibility of Bulgarian by other Slavic speakers vary a lot depending on the methods of measurement. At word-level, Bulgarian is generally very intelligible for speakers of other languages (see fig. 1 and fig. 2). At text-level intelligibility, the low scores of non-Bulgarian speakers contrast with their high scores in word-level intelligibility. Golubović notices that Bulgarian is less intelligible than its lexical and phonological distance with other Slavic languages would predict, and “Bulgarian was overall the least intelligible language in our study – it was not well understood even by the speakers of Croatian and Slovene” (Golubović 2016, 105). Although Croatian and Slovene are geographically close languages to Bulgarian, they hardly share more common innovations than Bulgarian does with other Slavic languages.

Both Gooskens and Golubović highlight the important differences in morphosyntactic structures between Bulgarian and other Slavic languages (see II.3.1.1 and II.3.2). They explain why the overall intelligibility of Bulgarian to other Slavic speakers is worse than its word-level intelligibility. These results highlight the importance of morphosyntax in the mutual intelligibility of Slavic languages : although lexical and phonological distance

are crucial, differences in morphosyntax will be an important issue in constructing an interlanguage. How the Bulgarian morphosyntactic structures are dealt with in interlanguages will be discussed in II.3.1.3 and II.3.2.3.

### I.2.3. Conclusions and discussion

The degree of mutual intelligibility between Slavic languages is sufficient for the creation of a Slavic interlanguage. The mutual intelligibility of Slavic languages matches very well their genetic classification, although areas of contact (e.g. the Balkans) have had some importance in the evolution of the languages.

A recurring outlier in tests of mutual intelligibility is Bulgarian. Although it is not so distant from other Slavic languages in terms of phonological and lexical distances, it is poorly understood by other Slavic speakers ; and Bulgarian speakers have a relatively low understanding of other Slavic languages. This points towards an important role of morphosyntax in mutual intelligibility, because it is the main area of divergence between Bulgarian and other languages.

In the next part, I will review a variety of more general factors related to mutual intelligibility and language acquisition.

## I.3. Other influences on constructed interlanguages

When designing his interlanguage, a contemporary author like Merunka has in mind issues in mutual intelligibility and a good command or linguistic knowledge of the family of language he is working on. In addition, discussions on Conlangs and studies in Creolistics and second-language acquisition also influence the way an interlanguage will be constructed. Therefore, I have to reckon with literature on supposedly “simple” linguistic features in order to understand some structures of Interslavic.

### I.3.1. Studies on Creoles and Pidgins

Morphosyntax of Creoles and Pidgins has been a privileged research field for scholars who believe in universals of linguistic simplicity, going so far as to say that “the world’s simplest grammars are Creole grammars” (McWhorter 2001). Scholars have shown that Creoles tend to have common structures, and are typologically similar to each other rather than to their respective lexifiers (Bakker et al. 2011). Their structures are described as simple and regular. For instance, morphophonemic rules are preferred over suppletion (McWhorter 2001) and Creoles follow the “unmarked alignment

hypothesis” (SVO/SOV word-order) even when their parent languages don’t have such a word order (Baptista 2017).

Pidgins around the world also show recurring patterns, such as absence of inflection and morphological marking of gender, isolating or agglutinative morphology and semantically transparent compounds (Sebba 1997).

McWhorter describes Creoles as languages “stripped of almost all features unnecessary to communication, and since then have not existed as natural languages for a long enough time for diachronic drift to create the weight of “ornament” that encrusts older languages” (McWhorter 2001, 01). Such claims are highly controversial, and many specialists in the field strongly disagree with assumptions that Creoles are less complex or “ornamented” than other languages (see for example Mufwene’s publications).

However, those claims have some influence in research on second-language acquisition, and a conlang designer might be tempted to use some Pidgin or Creole-like features in an interlanguage.

### I.3.2. The Esperanto model

Since its creation in the 19th century, Esperanto has had a huge influence on language creation in the field of interlanguages

Its creator, Ludwik Lejzer Zamenhof, designed Esperanto with second-language acquisition in mind. Esperanto is often described as “the easiest language to learn”. This claim should be restrained to Indo-European speakers, because Esperanto has an Indo-European lexicon and phonology. The grammar of Esperanto resembles that of many Indo-European languages, but has nothing in common with, for instance, Bantu or Austronesians grammars. Esperanto is a schematic project : its structures are purposely more simple and regular than those of natural languages.

It is noteworthy that many features selected by Zamenhof for their simplicity are also predominant in Creoles and Pidgins. Esperanto has no inflections, and only marks a difference between nominative and accusative by adding a -n suffix. The lexicon of Esperanto is made of semantically transparent compound (for example : *ĝuste* (correct)/ *malĝuste* (incorrect)). It uses morphophonemic marking for plural in a very regular and no suppletion, and follows the SVO word-order. Esperanto is agglutinative, and has a short closed list of grammatical exceptions.

At this point, it must be stated that the presumed simplicity of Creoles and Pidgins on one side and Esperanto on the other might only lay in the eye of speakers of Indo-European languages. Because European languages are involved in the genesis of virtually every Creole studied, “universally simple” features might simply be features familiar to Indo-European speakers ; just like Esperanto appears easy to them because it is built on Indo-European material.

### I.3.3. Conclusions

In this thesis, I will not assume that some linguistic features are objectively simpler than other. However, I believe it is important to keep in mind that such views might influence the design of interlanguages, especially Interslavic, as well as the learner’s attitude towards the grammar of an interlanguage. Because this thesis focuses on Indo-European languages, the simplicity models drawn from Esperanto or studies on Creoles will not be dismissed in the name of their Indo-European-centered structures. However, given the choice made in both *Ruski Jezik* and Interslavic to adopt naturalistic features in their general structures and in specific linguistic areas, I will highlight the areas where those “simplicity models” have been adopted instead.

## II. Study of Ruski Jezik and Interslavic

In the previous chapter, I have reviewed different linguistic and extra-linguistic predictors of mutual intelligibility that I will now discuss in the context of constructed interlanguages. In order to depart from the purely theoretical aspects of studies in mutual intelligibility, I will analyse the choices that were made in different linguistic areas in the design of *Ruski Jezik* and Interslavic. I chose to study these two languages because they were created at very different periods of time. *Ruski Jezik* and Interslavic were not designed using the same means, were not spread the same way and did not carry the same political ideals. Yet, they show some interesting resemblances and several divergences that can be examined in order to have a better understanding of the common features of Slavic languages, their diachronic evolution and their status in the 17th century and now. Moreover, *Ruski Jezik* and Interslavic allow us to discuss the different - and sometimes contradictory - ways of designing and using a conlang, as well as the limitations or areas of improvements in constructed interlanguages. I will focus on three main areas - lexicon, phonology and morphosyntax - favouring some aspects over others as some elements - such as the phonetic realisations of *Ruski Jezik* - can hardly be discussed properly due to the lack of resources aforementioned.



## II.1. Lexicon

### II.1.1. A Pan-Slavic lexicon ?

A paper by Sakhno (Sakhno 2018) provides an overview of the Pan-Slavic vocabulary - that is, lexical roots shared by all Slavic languages. Slavic languages share a lot of kinship terms and basic natural and human concepts. Many borrowings from other groups of languages (mainly Germanic, but also Indo-Iranian) dated from different periods are found in a majority of Slavic languages. More importantly, Slavic languages share common semantic innovations and word-formation processes. A famous example is Proto-Slavic \*medvĕdъ 'bear', which is a compound of \*medv- 'honey' and \*ĕdĭ 'food' ("honey-eater"). Such a word is found in every subgroup of the Slavic family ('medvĕdъ' in Derksen 1996), and is a taboo substitution of the PIE word \*h<sub>2</sub>rtko (which yielded Skt. *ṛ.kṣa-*, Lat. *ursus* ...) ('ursus' in de Vaan 2002). Sakhno describes the lexicon of modern Slavic languages as being "rightfully reputed to be remarkably homogeneous in denoting core concepts". Therefore, using the comprehensive and vastly shared Pan-Slavic vocabulary as a base for an interlanguage seems possible, and is a good way to create "immediate passive comprehension and parity between the different Slavic languages" (Meyer 2016). In the next parts, I will discuss the composition of the lexicon in *Ruski Jezik* and Interslavic.

### II.1.2. Ruski Jezik

Križanić' *Ruski Jezik*, unlike Interslavic, was not designed to balance all Slavic influences, but to "amalgamate the "pure" Slavonic elements into one language" (Du Feu 1975). Driven by a fantasy of linguistic purity, Križanić established Russian as the purest among Slavonic languages, followed by his native Croatian. He believed that all other Slavic languages were polluted by German, Hungarian, Turkish, Greek or Albanian elements ; and Polish and Belarussian were disregarded as tainted languages.

Because Križanić did not have on hand comprehensive grammars and dictionaries of every Slavic languages, it is relevant to list the languages he was familiar with. The author was fluent in his native Croatian, German and Italian. He knew Church Slavonic, Latin, Greek and had some knowledge of Polish, Hungarian, Belorussian and Serbian. His knowledge of Russian, as is often pointed out (Heaney 1975; Du Feu 1975), was flawed, and relied mostly on Russian Church Slavonic and not vernacular Russian.

Because of the many variations in Križanić writings, as well as the amount of lexicon which can not undoubtedly be connected to one language and not another, it is hard to

determine the exact weight of each Slavic languages in the blend that is Ruski Jezik. The Dutch Slavist Tom Eekman conducted a statistical study on the text of *Politika* (Križanić 1663), written using the *Ruski Jezik*. His results are the following : 60% of the lexicon is Russian, but has Pan-Slavic cognates : they roughly correspond to the basic vocabulary of Slavic languages. 10% of the lexicon is from Old Church Slavonic and Russian Church Slavonic ; 9% is of Serbo-Croatian origin ; 2,5% is of Polish origin. Other languages (Ukrainian, Belarussian ....) are also identified, but they are not as significant as the ones above. A part of *Ruski Jezik* lexicon, that Ekman and other researchers failed to associate with any Slavic languages, was apparently created by Križanić himself (Kolovrat-Butenko 2015).

### II.1.3. Interslavic

Interslavic, as explained in the introduction, is a mix of two originally distinct projects, *Slovianski* (by Jan Van Steenberghe) and *Novoslovienski* (by Vojtěch Merunka). *Novoslovienski*'s lexicon is mostly based on the attested vocabulary of Old Church Slavonic (Meyer 2016), whereas *Slovianski*'s lexicon is based on reconstructions of Proto-Slavic. According to Merunka (Merunka, personal communication), the merging of the two interlanguages' vocabularies was not problematic because the lexical stems they used were mostly similar. *Slovianski*'s lexicon, because it is more inclusive of common borrowings or internationalism, filled the gaps of Old Church Slavonic-based *Novoslovienski* in contemporary fields like technology. Interslavic also has a system of "voting machine" ("Voting Machine") where speakers of Interslavic and learners of Interslavic can submit words from several Slavic languages altogether and generate their simplified Interslavic orthography. The voting machine takes those manual entries into account to help generate new lexemes.

Regarding basic lexicon (kinship terms or words relating to basic concepts and body part mentioned in II.1.1), Interslavic is very close to Proto-Slavic forms, as long as they are still recognizable by modern Slavic speakers. For instance, Proto-Slavic *\*žena* is identical to Interslavic *žena*, Proto-Slavic *\*j ĭ mę* is very similar to Interslavic *ime*, which has been modified following natural phonological developments in Slavic languages (loss of the nasal and initial yotization) ('Interslavic Dictionary' n.d.).

An important issue for the Interslavic lexicon are the so-called "false friends", that is similar stems having a different meaning in various Slavic languages. Different strategies exist to solve this problem in Interslavic. Provided that it is only a small minority of languages that does not follow a widespread pattern, the majority solution takes priority, assuming that this is an uncommon situation and that speakers of the minority

language could easily get used to the semantic shift. This is the case of Interslavic “nedělja/недеља” (‘Sunday’), which has this very meaning in every Slavic languages except Russian, where *неделя* (*nedelja*) means “week” and the word for “Sunday” is *Воскресенье* (*Voskresen'e*).

If the semantic divergence is important between groups of languages, several options exist. For example, a semantic equivalent with a shared Pan-Slavic meaning is used instead. Finally, another solution is to use an internationalism (common borrowing, for example from English) instead of a Slavic stem if its meaning is the same among Slavic speakers. This is the case for the word “Week-end”. Interslavic has two words for this concept : “konec tydňa/конец tydňa” (literally “end of the week”) and the internationalism *vikend/викенд* [vikɛnd]. The internationalism for “week-end” is well-known to every Slavic speaker, and using it instead of the Slavic form of “week-end” can avoid confusion and make communication easier (typically, with Russian speakers).

It is safe to say that, if communication using Interslavic fails, it is not because of the lexicon. According to the creator of *Novoslovienski* (Merunka, personal communication), compiling the lexicon of the interlanguage-to-be was a very easy part of the creation process.

## II.1.4. Conclusions and discussion

Ruski Jezik was designed with the purpose of eliminating Turkish, Greek and German “impurities” from the lexicon. Because it is based on the linguistic knowledge of one man with political goals, there is a predominance of the Russian influence. Unlike Ruski Jezik which carries an ideal “linguistic purity”, Interslavic, designed centuries later with different means and different goals, includes foreign words and recognizable internationalisms because its primary goal is clear and easy comprehension. In both cases, Slavic roots and lexemes are still prioritized over foreign roots. Thanks to the relative lexical homogeneity of Slavic languages, both Ruski Jezik and Interslavic appear successful in having a lexical stock that is potentially understandable by their respective target audience, and can be used as a solid base in the design of an interlanguage.

## II.2. Phonology

### II.2.1. Slavic phonology

#### II.2.1.1. Scripts

Slavic languages can be divided into two families according to their national scripts, Latin or Cyrillic. The division between users of Cyrillic scripts (Belarussians, Bulgarians, Macedonians, Russians, Ukrainian) and users of Latin scripts (Poland, Slovenia, Croatian (?), Czech) can roughly be reduced to the old division between Eastern Orthodox Slavs and Roman Catholic Slavs. Nowadays, the use of the Cyrillic alphabet tends to decline in non-Slavic countries, but stays consistent in Slavic countries. Serbia has a unique position on the question : although Cyrillic is officially preferred (it is used in administration), Serbian speakers equally use the Latin alphabet, and are familiar with the equivalences between the two scripts.

Scripts will be discussed briefly because *Ruski Jezik* was used for written expression before anything, and contemporary speakers of Interslavic are, first and foremost, *writers* of Interslavic - on blogs, forums or Facebook groups.

Modern Slavic users of Cyrillic scripts are familiar with the latin script, and Slavic users of Latin scripts usually have some contact with Cyrillic-written texts in their lives. Because they were educated nobles or clerks, the readers of texts in *Ruski Jezik* were obviously familiar with the Cyrillic script used. Therefore, scripts are not a major issue for the intelligibility of *Ruski Jezik* and Interslavic.

Nevertheless, the use of diacritics or specific letters in the interlanguages and the orthographic choices that were made - simplification, complexity - are interesting elements for this study.

It is then relevant to observe how the division between scripts in the Slavic world is dealt with. A base for intercomprehension is possible between Slavic speakers of different languages using a similar script.

#### II.2.1.2. Accentuation

Accentuation in the Slavic languages, especially from a diachronic point of view, is an extremely complex topic that cannot be dealt with entirely here. I will give a brief

overview of the different types of accentuation found in modern Slavic languages. Sources on the accentuation of Ruski Jezik can be contradictory, and usually focus on the relation between the accentuation of Ruski Jezik and Križanić's native dialect.. I will discuss those few elements and focus more on the phonology and morphology of his interlanguage. Concerning Interslavic, I will analyse how its accentuation is positioned compared to the living Slavic languages. The different types of accentuation in modern Slavic languages are summarized in the table below :

		Free/mobile	Fixed	Pitch accent	Intensity
<b>Proto-Slavic (reconstruction)</b>		Yes	-	Yes	-
<b>East-Slavic</b>	Russian	Yes	-	-	Yes
	Belarusian	Yes	-	-	Yes
	Ukrainian	Yes	-	-	Yes
<b>South-Slavic</b>	Bulgarian	Yes	-	-	Yes
	Macedonian	-	Antepenult.	-	Yes
	Slovene	Yes	-	- <sup>1</sup>	Yes
<b>West-Slavic</b>	Bosnian/Serbian /Croatian	Yes	-	Yes	-
	Slovincian	Yes	-	-	Yes
	Czech	-	Initial	-	Yes
	Slovak	-	Initial	-	Yes
	Sorbian	-	Initial	-	Yes
	Polish	-	Penult.	-	Yes

fig. 3 : the different types of accentuation in modern Slavic languages and Proto-Slavic, after Pronk 2014.

The role of accentuation in mutual intelligibility of Slavic languages has not been studied yet, not even in Golubović's comprehensive study on Slavic mutual intelligibility. Accentuation is connected to different phonological and morphological processes, and it is hard to untangle them in order to measure the specific role of accentuation in mutual intelligibility. There is no study on the role of suprasegmental features in mutual intelligibility of Slavic languages that I know of, therefore I can only assume that accentuation must have *some importance* in mutual intelligibility.

Examining how the accentuation of interlanguages is designed (free or fixed accent, pitch or stress accent) could actually give us some clues regarding the role of

<sup>1</sup> Although the majority of speakers do not have a pitch accent, standard Slovene officially has it.

accentuation in intelligibility. One would expect rather “neutral” accentuations that would not trigger phonological changes impacting intelligibility. For instance, the vocalic reduction of non-accented vowels in Russian (koróva ‘cow’ is pronounced [karóva]) could be an issue for intelligibility. This is due to the discrepancy between written and spoken vowels.

### II.2.1.3. Phonological inventory

Giving an extensive overview of every differences between the phonological inventories of each Slavic language would be a Herculean task. Therefore I will limit myself to highlighting the common features of Slavic languages in phonology, as they can be used as a base when designing an interlanguage. I will also review the reconstructed phonology of Proto-Slavic and Old Church Slavonic, which are used in both interlanguages.

Researching the WALS draws a general picture of the phonological features of Slavic languages. For example, all Slavic languages allow complex syllable structures and have an Average to High Consonant-Vowel ratio (‘WALS Online - Feature 3A: Consonant-Vowel Ratio’ n.d.). Slavic languages are well-known for their complex consonant clusters (e.g. Rus. *vstrechat'sja* ‘to meet each other’) and complex segments like affricates. Such information is not, of course, a comprehensive description of Slavic phonology. Yet, it can help in designing and assessing the success of a Slavic interlanguage that aims at being naturalistic.

To get a better grasp of Slavic phonology, the comparative method comes in handy, in particular since it was used in the design of the two Slavic interlanguages under examination. Two main inspirations for the historical consistency of *Ruski Jezik* and *Interslavic* are Proto-Slavic (for *Interslavic*) and Old Church Slavonic :

	Labial				Dental				Palatal				Velar	
Plosive	p	b			t	d							k	g
Fricative				v			s	z	ʃ (š)	ʒ (ž)			x	
Affricate							ts (c)	dʒ (ʒ)	tʃ (č)					
Glide											j			
Resonants		m						n, l, r						
									/tʰ/, /dʰ/, /sʰ/,					

									/z <sup>1</sup> /		
Resonants (palatal)									/ř/, /ń/, /l/ ;		

fig. 4 : Proto-Slavic (dated -2000 to -600) : Consonants, after Schenker 1995.

Oral				Nasal	
i		y	u		y
e	ь	ѣ	o	e	o
ě					
		a			

fig. 5 : Proto-Slavic : Vowels (Pronk 2014)

	Labial				Dental				Palatal				Velar	
Plosive	p	b			t	d							k	g
Fricative			f	v			s	z	š (š)	ž (ž)			x	
Affricate									tš (č)		ts (c)	dz		
Glide											j			
Resonants		m						n						
Glides								l r						
Resonants (palatal)									/ř/ , /ń/ , /l/					

fig. 6 : consonants of OCS (dated 9th-11th), after Pronk 2014.

Oral				Nasal		Yodization			
i			u		u	ji			ju
e	ь	ѣ	o	e	o	je / je (nasal)	ь		jo (nasal)
ě						ě			
		a						ja	
Syllabic r, l, n									

fig. 7 : vowels of OCS (dated 9th-11th), after Pronk 2014.

In parts II.2.2.3 and II.2.3.3, I will examine the phonological inventories of *Ruski Jezik* and Interslavic and their relation to Proto-Slavic and Old Church Slavonic.

I will also investigate how regular phonological correspondences between Slavic languages are used in the design of Interslavic and, to a lesser extent, *Ruski Jezik*. In terms of mutual intelligibility, regular correspondences are a solid base in understanding a closely related language, as Golubović suggests in her study of Czech and Croatian intercomprehension (Golubović 2016, p.143-149). In this experimental study, Czech and Croatian speakers go through 4,5 hours of language lessons to improve their understanding of the other language in the written form. The lessons focus on three aspects : learning the most regular correspondences of graphemes ; introducing lexicon (most frequent non-cognates) and introducing rules concerning affixes. The results of this test were compared to the results of a previous test where mutual intelligibility was measured without any previous exposition or language lesson. The study shows that, with only 4,5 hours of classes centered on lexicon and phonological correspondences, Czech speakers improved their understanding of Croatian by 105%, when the test group (which did not follow any lessons) improved it by 27%.

Regarding phonological inventories, the following elements could be problematic for mutual intelligibility. First, the Late Common Slavic period was a long time ago (600-900, see Kamphuis 2020) and Slavic languages have evolved since, creating a number of irregular or obscured phonological correspondences between languages. The phonology of Old Church Slavonic (dated 900-1600) is already a Southern Slavic phonology, and therefore can not be used as a central base for an interlanguage : its weight should be balanced with that of other influences. Second, synchronic phonotactic constraints vary across Slavic languages : Czech, for instance, tolerates accented syllabic consonants in nucleus positions (tr.vat ‘to last’) whereas Polish’s trapped consonants can not be accented (trwąć ‘to last’), making them questionable nucleus (Scheer 2003). As interlanguages are expected to share Slavic phonotactics, such a situation could show to be a hindrance on the path to historical consistency. In the following part, I will detail several issues in Slavic phonology that will be discussed in depths in part II.2.2.4 and II.2.3.4.

#### II.2.1.4. Selection of issues in Slavic phonology

- Palatalization



In Slavic studies, the term “palatalization” is used to describe two different phenomena. What I will call “phonemic palatalization” corresponds to the “coarticulation of consonants with a neighboring vocalic segment” (Iskarous and Kavitskaya 2018). This yields the so-called “soft” and “hard” consonants, that are phonemic in Russian (e.g. брат /brat/ ‘brother’ vs брать /bratʲ/ ‘to take’). When examining the general situation of phonemic palatalization in Slavic languages, we can see that Russian is an exception. However, because of its importance in the Slavic world and the diversity of situations in the Slavic languages regarding that matter, phonemic palatalization must be discussed. An overview of the situation is given in fig.x :

PROTO-SLAVIC	EAST SLAVIC			WEST SLAVIC					SOUTH SLAVIC			
CONTRAST	R	Ukr	Br	P	US	LS	Slk	Cz	Blg	M	SC	SL
v-vʲ	+	—	— V	— V	— V	— V	—	—	— V	—	—	—
p-pʲ	+	—	— V	— V	— V	— V	—	—	— V	—	—	—
b-bʲ	+	—	— V	— V	— V	— V	—	—	— V	—	—	—
m-mʲ	+	—	— V	— V	— V	— V	—	—	— V	—	—	—
d-dʲ	+	+	d-dʲ	d-dz	d-dʲ <sup>a</sup>	d-ʒʲ	d-z	d-z	— V	—	—	—
t-tʲ	+	+	t-tsʲ	t-tc	t-tʲʃ	t-ʃʲ	t-c	t-c	— V	—	—	—
z-zʲ	+	+	+	z-z	—	—	—	—	— V	—	—	—
s-sʲ	+	+	+	s-c	—	—	—	—	— V	—	—	—
n-nʲ	+	+	+	n-ɲ	n-ɲ	+	n-ɲ	n-ɲ	— V	n-ɲ	n-ɲ	—
l-lʲ	+	+	+	w-l	w-l <sup>b</sup>	w-l	l-ɫ	—	— V	l-ɫ	l-ɫ	—
r-rʲ	+	— V	—	r-ʒ	— V	+	—	r-ɾ	— V	—	—	—

TABLE 2. Palatalization contrast in modern Slavic languages. Key: R: Russian, Ukr: Ukrainian, Br: Belarusian, P: Polish, US: Upper Sorbian, LS: Lower Sorbian, Slk: Slovak, Cz: Czech, Blg: Bulgarian, M: Macedonian, SC: Serbian and Croatian, Sl: Slovenian. ‘+’: contrast is still present in all environments; ‘—’: contrast is absent, with only the nonpalatalized variant present; ‘— V’: restricted presence of contrast—only before vowels.

fig. 8 : Palatalization in Slavic languages, after Iskarous and Kavitskaya 2018

A more widespread position on phonemic palatalization is that it is contrastive only in prevocalic position. Such a situation is common in West-Slavic languages and is found in Bulgarian and, in some cases, in Bielarussian. Kochetov (Kochetov 2002, chapter 2 and 5) shows that “less salient articulatory/acoustic differences between the segments under investigation and, consequently, a high rate of confusion of the segments should correspond to the neutralization of the contrast in a given environment”. He highlights that contrastive palatalization tends to be maintained in syllable onset position and before vowels, and disfavored in coda position. This conclusion echoes the frequency where contrastive palatalization is found in specific positions across Slavic languages. Kochetov emphasizes the importance of phonological environment rather than prior knowledge of a language in identifying contrastive palatalization. He demonstrates that native Russian speakers and native Japanese speakers have similar results when it comes to distinguishing palatalized and non palatalized consonants in Russian (Kochetov 2002, chapter 4.5).

Acoustic perception and optimality might be the decisive factors in deciding whether a Slavic interlanguage should keep contrastive palatalization in a maximum of phonological environments - like in the case of Russian. However, it is expected that because of their prior knowledge of palatalization patterns in their native languages, Slavic speakers would project it onto an interlanguage, especially onto familiar lexical items. Consequently, different elements (such as acoustic optimality, variations across Slavic languages and etymology - discussed in II.2.3.4 - Palatalization) should be taken into account when designing the positions and nature of contrastive palatalized consonants.

- Vocalic system

In relation with accentuation, vowels in Slavic languages have different distinctive features in each respective language. For instance, length is phonemic in Serbo-Croatian, but is not in several other Slavic languages, and Russian has the reduced unaccented vowels discussed in Part II.2.1.2. Polish has a distinction between nasal (two vowels) and oral vowels that is not found in any other Slavic language. The role of vowel features does not seem central in studies on mutual intelligibility. In her study, Golubović is obviously aware of the existence of phonemic length in Czech and nasal vowels in Polish (see also Golubović 2016, 214), but she does not emphasize their role in mutual intelligibility. The difference between Czech short -i which regularly corresponds to Croatian -y and Czech long -í which regularly corresponds to Croatian -ji in final position is not discussed. In a theoretical paper on measurements of phonological distance (Sanders and Chin 2009), the binary features used for vowels by the Levenshtein algorithm are the following : back, high, Advanced Tongue Root (ATR), low, round. Vowel length and nasality are completely removed from the equation. In her doctoral thesis, Eden has an oral/nasal distinction applied to vowels in Romance languages (because of French and Portuguese), but she notices that “Polish is variously analysed with and without nasal vowels” ((Sanders and Chin 2009, 86). Levenshtein calculations generally seem to disregard vowel nasality and vowel length when used on Slavic languages. They are not explicitly dealt with in any of the comprehensive studies on Slavic mutual intelligibility used in this thesis.

This would point either to a minimal impact of vowel features for mutual intelligibility, or to an inconsistency in Levenshtein calculations. This is a question I will not address directly, as the available data is not sufficient to come to a conclusion. I will study the vocalic systems of Ruski Jezik and Interslavic, and examine the roles vowel features play in them, for instance by discussing which ones are phonemic and which ones are “optional”.

- Vowel-zero alternations in paradigms

What Merunka calls “losing vowels” (Merunka 2012, 38) are found in some nominative forms of nouns and disappears in the genitive (e.g. Czech NOM.SG /pes/, GEN.SG /psa/ ‘dog’) of several Slavic languages, as well as in other positions depending on the language. Such alternations originate in the Fall of the Jers (9th-11th century). The Jers - ѣ and ь - disappeared following regular patterns described by Hávlik in 1889. Hávlik’s law, named after him, can be summarized as follows :

“Counting from right to left, a jer is weak in word final position, strong before a weak jer and weak before a strong jer or any other vowel.”

OR “Counting from the back weak and strong jers alternate. When you encounter a vowel, the pattern starts again”. (Kamphuis 2020, 39)

For instance, Old Church Slavonic *vъsъ* ‘all’ has a final weak jer which disappears, yielding *vъs* in the nominative. In the genitive form of the word, *vъsego*, the weak jer ь disappears, yielding *vsego*. This explains the synchronic vowel/zero alternation between NOM.SG *vъs* (Rus. *vec*) and GEN.SG *vsego* (Rus. *vsego*) (‘vъśъ’ in Derksen 1996). Synchronically, vowel/zero alternation can be given a phonological explanation. In Czech, for instance, the alternation *pes/psa* can be explained by the fact that *\*ps#* contradicts the phonological rules of Czech (no /s/ in nucleus position, no words without a nucleus).

One variant of the vocalic alternations can sometimes have been generalized (Pronk 2014), but vowel/zero alternations are found in a majority of Slavic languages, although the quality of the vowel varies (/e/ and /o/ are the most common but /a/ and /ə/ are also found). “Losing vowels” are an important part of synchronic phonological rules and their existence is justified by etymologies. The patterns of vowel alternation and the decision to level - or not - paradigms will be studied in the cases of *Ruski Jezik* and *Interslavic*.

## II.2.2. Ruski Jezik

### II.2.2.1. Scripts

In a paper on Križanić’ orthography and phonology (Osłon 2012a), Osłon analyses the different inspirations for Križanić writing. In general, Križanić spelling is based on his native Old Croatian dialect, but the author is always trying to “generalise” his language by getting rid of local features to reach a more Pan-Slavic writing style. Križanić uses

several types of spelling, always in Cyrillic, depending mostly on the context. Križanić style is extremely variable and his spelling, as well as other linguistic features, are adapted to his target audience (Du Feu 1975). His use of Church Slavonic (Церковнославянское, “преводническо” *написание*) is exclusively limited to quotes from the Church texts that he annotates with recommendations. He uses a “Russian spelling” (Русское *написание*) which is in fact closer to Russian Church Slavonic than to vernacular Russian. This spelling, found in *Gramatichno*, has many inconsistencies, but is helpful to understand the phonology of Križanić. The Croatian spelling (Хорватское *написание*) is used by Križanić to transcript his native dialect and is a base for his Pan-Slavic writing. Križanić’s Croatian spelling is the main source to restore the phonetic pronunciation of his interlanguage. Finally, the “Common Spelling” (Общее *написание*) is a supra-dialectal writing that was specially created for the interlanguage (Osłon 2012a). This spelling differs from one work to another, but stays relatively consistent in each of his work.

Ruski Jezik does not have a unique writing system : Križanić’s use of script shows his mastery of different writing styles and his knowledge of Slavic languages.

#### II.2.2.2 Accentuation

Because Ruski Jezik was never spoken, and only Križanić was proficient in it, reconstruction of its accentuation is solely based on Križanić explicit recommendations (in the *Gramatichno*), its use of accentuation in his other works (Križanić 1663) and the scholarly reconstruction of his native dialect. Regarding accentuation, Križanić’s knowledge was essentially of his native dialect and - imperfectly - of Russian. It is important to remember that his main goal was to be understandable for Russian speakers - other Slavic speakers were not his priority. Therefore, it is relevant to study Ruski Jezik accentuation in comparison with Russian and Old-Croatian accentuations. Hamm (Hamm 1975) summarizes Križanić’s accentuation system as a (mobile) tri-accent system with one long falling intonated and one long rising intonated accent. Accents are annotated by Križanić in the *Gramatichno* as :

- 1) **High** (^), that can fall on any syllable
- 2) **Long** (-), that can never fall on a monosyllable. If the word is polysyllabic and it's the only accent, it automatically falls on the penultimate syllable. If there are two long accents in a word, they will fall on the final two syllables
- 3) **Quick** (/), that can fall on any syllable. If it comes after a long (-), they can stand on any two syllables, at the beginning or the end of a word.

- 4) **Uniform** (\), that can only fall on the final syllable and is used to semantically and phonetically distinguish between words.

The two long accents (^ and -) are distinguished by intonation. What Križanić was trying to accomplish with the accentuation of *Ruski Jezik* is summarized by Hamm as follows :

“He saw and felt that the Russians had a free accent, free as far as the place within a word or words is concerned - and this was the same, or nearly the same accent he himself used as a Chakavian speaker, except that Chakavian accent was also musical, polytonic, while the Russian was not, because it did not have rising intonations. it was justifiable for him to decide to stay with that supra-segmental system which was closest to him, which he mastered and to which he reacted spontaneously, all the time counting on that the Russians could, by neutralization of the intonation and of preaccentful lengths, which did not exist in their language, in his system easily find their own.” (Hamm 1975)

Recent research on *Ruski Jezik* (Osion 2012b) propose a different reconstruction of its accentuation, which would be a system with two different short accents determined by a phonological environment. It is worth noting that, relying on the fact that both his native accent and the Russian accent were mobile, Križanić assumes that some types of pitch accentuation will be translated into stresses by the Russian speakers. Such a hypothesis could be confirmed by the modern Serbo-Croatian situation. New Shtokavian dialects, used as a base for standard Croatian, have a four-tone system which is not found in the majority of Croatian and Serbian dialects. Although the accentuation of the standard variety is “unattainable” for most speakers, their ability to recognize and analyse the standard variety is equal to that of New Shtokavian speakers (Olof and Bradfield 2019)

Križanić’s accentuation is, so to speak, a Russian accentuation pronounced by a Croatian speaker ; or a pitch accent which can be easily “translated” into a stress accent. Typically Russian accentuation properties, like vocalic reduction of non-accented syllables, are not kept in *Ruski Jezik*, probably because of their impact on mutual intelligibility.

#### II.2.2.3. Phonology of *Ruski Jezik*

Before studying the phonology of *Ruski Jezik*, “it should always be borne in mind that though we may attribute a phonology to Križanić, it is essentially a written language, and we are really doing no more than discussing the links which may be established between the written word in Križanić and the known relation of written to spoken

forms in the natural Slavonic languages” (Heaney 1975). The reconstructed phonology of Ruski Jezik must be approached carefully, being mindful that it shows many irregularities and inconsistencies in the different writings of Križanić (Osłon 2012a). After studying different writings from Križanić (*Gramatichno*, *Politika*), Osłon reconstructs the phonology of Ruski Jezik as follows :

	Labial				Coronal						Dorsal			
	Bilabial		Labiodental		Dental		Alveolar		Postalveolar		Palatal		Velar	
<b>Plosive</b>	p	b			t	d							k	g
<b>Nasal</b>		m						n			ɲ			
<b>Fricative</b>			f	v			s	z	ʃ	ʒ			x	
<b>Affricatives</b>							c		č	ć				
<b>Approximant</b>											j			
<b>Trill</b>								r						
<b>Lateral approximate</b>								l			l̥			

fig. 9 : consonants of Ruski Jezik, after Osłon 2012.

i	ī			u	ū
e	ē	(ə)	(ǣ)	o	ō
		ɑ	ɑ̃		

fig. 10 : vowels of Ruski Jezik, after Osłon 2012.

Russian phonology is prioritized over Croatian forms, except in the case of palatalization of consonants (Heaney 1975), which will be discussed in part II.2.2.4. Phonotactic rules that are proper to Croatian, like the possibility for /r/ to be syllabic (*Hrvat* ‘Croat’), are not kept in *Ruski Jezik*, which resembles more Russian Church Slavonic. Finally, Heaney notices that “despite having no model of Common Slavonic from which to derive his forms, Križanić succeeds to a large degree in producing a phonology which can be directly related to Common Slavonic” (Heaney 1975). Križanić phonology is indeed close to the one reconstructed for Common Slavic (see 4-7, Part. II.2.1.3)

#### II.2.2.4. Selection of issues in Slavic phonology

- Palatalization

Russian, namely the only Slavic language where consonantal palatalization is always phonemic, was along with Croatian Križanić's main source of inspiration for his *Ruski Jezik* and, overall, "goal language".

"Križanić transforms the Russian system of palatalized consonants in free association with all types of vowel into a system where the palatalization of a consonant can be explained as merely a variant pronunciation which occurs only before a front vowel. [...] On the whole, therefore, Križanić was able to sidestep the problems posed by Russian palatal consonants and adopt the Serbo-Croatian system without too much hesitation" (Heaney 1975)

Palatalization in Russian, is phonemic and not conditioned by the phonetic environment ("free association with all types of vowels"). It can occur when followed by a vowel or in final position. In Križanić's system, palatalization is reduced to a phonetic variation conditioned by the environment (a consonant before a front vowel). In (1), the form *Kralʹ* (where the final *ʹ* indicates palatalization of the previous consonant) given as a paradigm title corresponds to the etymological orthography. In the declension, the nominative form has no final *ʹ*, showing the absence of palatalization in word-final position. In other cases (vocative, locative and others) where /l/ is followed by a vowel, it is palatalized.

(1) **Kralʹ** 'king' (name of the paradigm)

NOM.SG	Kral
VOC.SG	Krâlʹa
LOC.SG	Krâlʹb

Križanić's system differs from the Russian one by reducing the phonological environments where contrastive palatalization can happen (e.g. no contrastive palatalization in word-final position). On the other hand, a more important number of plain/palatalized pairs exists in *Ruski Jezik* than in Serbo-Croatian, where only /l/ and /n/ have a contrastive palatalization. In the end, contrastive palatalization in *Ruski Jezik* is reminiscent of the patterns found in Western Slavic languages, such as Polish or Lower and Upper Sorbian.

- Vocalic system

Ruski Jezik vocalic system has five vowel qualities, with phonemic lengths, that can be realised as accented or unaccented. The phonemicity of lengths is similar to the Croatian system and, although the general vocalic system is close to Croatian, it is possible that some sort of vowel reduction (like in Russian) existed in Ruski Jezik (Osion 2012a), but this is unclear.

i	ī			u	ū
e	ē	(ə)	(ē)	o	ō
		ɑ	ɑ̃		

fig. 11 : Vocalic system of Ruski Jezik, after Osion 2012.

Vowel quality is also related to the softening (palatalization) of consonants. This is visible in the nominal declension paradigms, where each gender is presented with a hard and a soft pattern. In the neuter patterns (reproduced in fig. 12), vowels /o/ and /e/ are respectively associated with hard and soft consonants in two different patterns :

	ЛИТО (hard) 'year, summer'		ЛИЦЕ (soft) 'face'	
	SINGULAR	PLURAL	SINGULAR	PLURAL
<b>NOM</b>	ли́то	ли́та	ли́це	ли́ца
<b>VOC</b>	ли́то	ли́та	ли́це	ли́ца
<b>ACC</b>	ли́то	ли́та	ли́це	ли́ца
<b>GEN</b>	ли́та	ли́т	ли́ца	ли́ц
<b>LOC</b>	ли́тѣ	ли́тѣх	ли́ци	ли́цѣх
<b>DAT</b>	ли́тѣ	литом	ли́цѣ	ли́цем
<b>INS</b>	ли́том	литми	ли́цем	ли́цми

fig. 12 : Declension of neuter nouns : hard and soft patterns, after Križanić (Križanić 1666)

Ruski Jezik's vocalic system keeps a number of features found in Croatian, such as phonemic length. Unlike Russian, palatalization of consonants is not orthographically marked in the following vowel, but in the consonant itself or by using a jer.

- Vowel/zero alternations in paradigms



Regarding this matter, Križanić establishes the following rule :

“в последнем слоге слова мужского рода с беглым гласным (в именительном падеже) может стоять только краткий /a/”<sup>2</sup>. (Osion 2012b)

The vocalic alternation vowel-zero is an alternation between short /a/ and zero. This is exemplified by NOM. *сàн* /san/ vs GEN. *снà* /sna/ ‘son’. The alternation system is therefore simplified to an alternation between one vowel and zero, differing from the Russian model (alternation e-o/zero). Križanić follows the Croatian model which, in this case, is also the simplest.

## II.2.3. Interslavic

### II.2.3.1. Scripts of Interslavic

Interslavic can be written in several scripts : Latin, Cyrillic, Greek, Glagolitic and ASCII (American Standard Code for Information Interchange). The Latin and Cyrillic scripts are the most common, and are generally found together on Interslavic websites (van Steenberghe 2020). I will focus on the use of those scripts. Merunka’s grammar of *Novoslovienski* (Merunka 2012) and then Interslavic (Merunka 2018) are written in the Latin script.

Interslavic follows a general principle that words sound the way they are written. There is a one-one correspondence between each grapheme and phoneme. The only exception is the sound [v], written -в- in the Cyrillic script, which is transcribed in Latin as -v- or -w-.

Digraphs are used to render some affricates (“dž” for [ǯ]) in the Latin script and palatalized consonants (“dj” for [ɟ]). Three diacritically marked consonants (č, š, ž) are used in the Latin script, following the usual transcription of the sounds [tʃ], [ʃ], [ʒ] in many Slavic orthographies using a Latin script. The Latin and Cyrillic scripts show a general symmetry : digraphs in Latin are digraphs in Cyrillic, and there are no Cyrillic characters equating two Latin characters and conversely. The only exceptions are the Cyrillic transcription of [ks] (Latin “x”) into a digraph кс, and the Latin transcription of Cyrillic -щ- which is -št- (Merunka 2012) or -šč- (Merunka 2018). Latin “j” is also

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<sup>2</sup> “In the last syllable of a masculine word with a losing vowel (in the nominative case), only short /a/ can stand.” [Translation Jade Joannot]

translated into Cyrillic in two ways : -j- to indicated jotization before a vowel, and -ѣ- to indicate consonant softening.

The symmetry between the two main scripts used in the Slavic world allows easy transliteration from one script to another. Between Merunka 2012 and 2018, a tendency to give up some spelling features of Old Church Slavonic is observable. Interslavic orthography explicitly tries and simplifies different writings of Slavic languages : use of diacritics, digraphs or trigraphs, which are numerous in Polish for instance, are reduced to a minimum.

### II.2.3.2. Accentuation

Although the writings of Merunka and Jan Van Steenbergen slightly differ regarding stress in Interslavic, both authors introduce a system where accentuation is relatively free. They only provide the learners with the following recommendations, in order to “stay on the safe side” (van Steenbergen, n.d.) :

- In disyllabic words, the accent is on the first syllable.
- In longer words, the stress falls on the first, second or third syllable. Merunka puts emphasis on phonological rules to determine the place of an accent : it should be on the heaviest syllable of the word. Van Steenerbergen indicates that inflection should not influence the accent placements, and that accentuation of morphological markings (prefixes, suffixes) should be avoided.

Interslavic, following the majority of modern Slavic languages, has a stress accent. The general rule is that the accent should be on the semantic root of the word rather than on inflectional morphemes or affixes, and as close as possible to the beginning of the word. However, it is underlined by both authors that accentuation in Interslavic is mostly free, and that the different accentuation patterns of native Slavic speakers can be used in Interslavic without causing issues in intercomprehension. At first glance, the Interslavic accent seems to be free. However, the numerous “suggestions” on how stress should fall on the first syllables of a word are recalling more fixed-accent systems. It seems that accentuation is not of much interest to the creators of Interslavic, and the freedom given to speakers in this area seems to reflect a belief that it is not so important for mutual intelligibility.

### II.2.3.3. Phonology of Interslavic in relation to other Slavic languages

The phonology of Interslavic is summarized in the following tables :

	Labial				Coronal						Dorsal			
	Bilabial		Labiodental		Dental		Alveolar		Postalveolar		Palatal		Velar	
<b>Plosive</b>	p	b			t	d					c	ɟ	k	g
<b>Nasal</b>		m						n				ɲ		
<b>Fricative</b>				v (v, w)	θ		s	z	ʃ	ʒ			x	
<b>Affricate</b>							ts		tʃ	dʒ				
<b>Approximant</b>											j			
<b>Trill</b>								r						
<b>Lateral approximate</b>								l			ʎ			

fig. 13 : Consonants of Interslavic, after Merunka 2012 & Merunka 2018.

i				ʊ (*[jʊ])
	ɛ ([ʲɛ])		(3)	ɔ
		a		

fig. 14 : Vowels of Interslavic, after Merunka 2012 & Merunka 2018

- Relationship to Old Church Slavonic

The phonology of Interslavic is largely based on Old Church Slavonic and aims at being its logical continuation while also considering the current state of living Slavic languages.

Interslavic phonology uses important amounts of data collected in order to produce a “balanced” interlanguage. Merunka (Merunka, personal communication) gives a description of the process that I summarize as follows :

First, sets of regular phonological correspondences between Slavic languages were listed. The more a phoneme in language A regularly corresponds with a phoneme in language B, the lesser their distance in the design of Interslavic phonology. For instance,

Croatian -r- and Czech -ř-, which correspond regularly in “a large number of words across all classes” (Golubović and et al. 2016, p.143), will be parsed as close phonemes in phonological calculations. Such calculations are done for each possible pair of Slavic languages, including Old Church Slavonic, generating multiple series of phonological correspondences.

This database allows to discover what Merunka calls a “gravity centre” (Merunka, personal communication) for each set of Slavic phonemes by analysing their articulatory features. Regularly corresponding phonemes usually share some articulatory features. For instance, Croatian -r- and Czech -ř- display common features : they are both voiced alveolar trills. Czech -ř- has a fricative feature that is not found in Croatian. The “centre of gravity” for this correspondence would then be the shared articulatory features of voicing, place and manner of articulation, yielding a kind of archiphoneme /R/ specified for the above mentioned features.

Next, Old Church Slavonic is used as a lexical base for Interslavic. Old Church Slavonic phonemes are converted into their corresponding archiphoneme (the “gravity center”) while taking into account typical phonological developments of Slavic languages (e.g. the loss of nasal vowels). The consonantal system of Interslavic is quite close to that of OCS, but its vocalic system is simpler because phonetic features like vowel nasality have disappeared from most Slavic languages, and therefore are far from the “gravity centre” of Slavic vocalic phonemes.

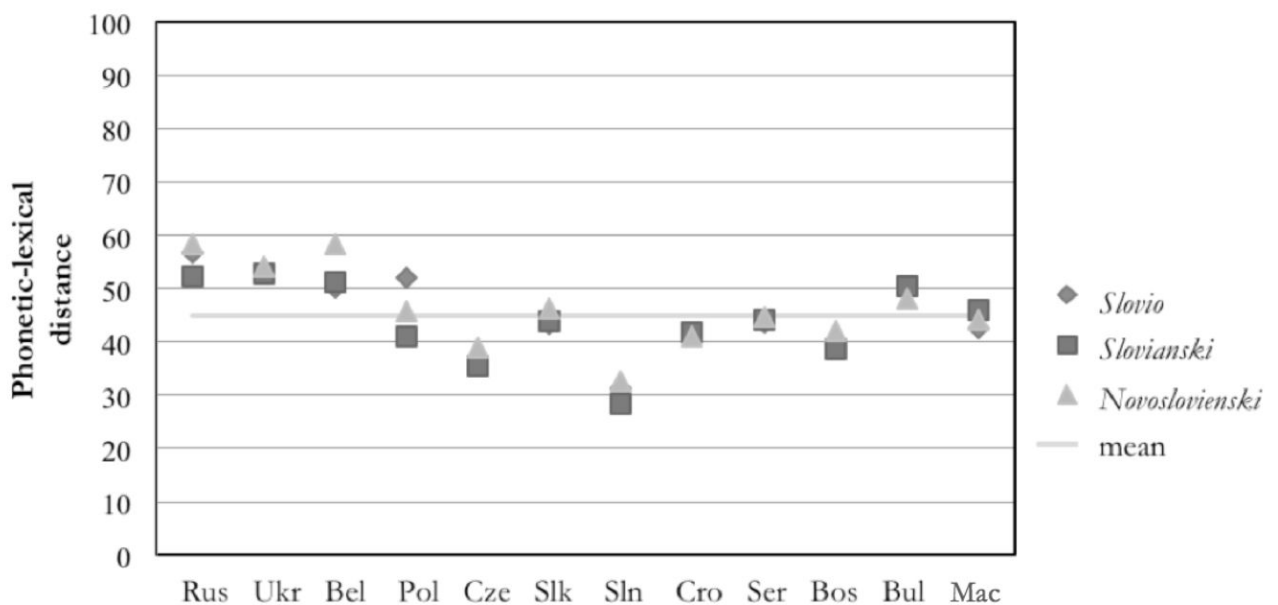
Finally, Additional calculations based on living Slavic languages were made to adjust the phonology of OCS lexicon (1) to modern Slavic languages, and to deal with discrepancies between OCS lexemes and modern Slavic languages (2) :

- 1) OCS *nosъ* (‘nose’) corresponding to : Rus. *nos*, Cz. *nos*, BCS *nôś*, Bulg. *nos* and others.  
> Interslavic ‘nose’ *nos*, similar to the OCS form while taking into account Slavic phonological developments (fall of a weak jer in final position). (‘*nôśъ*’ in Derksen 1996)
- 2) OCS has an adjective *sladъkъ* ‘sweet’ (*sòldъkъ* in Derksen 1996) and a verb *sladiti* ‘to delight’ (ṬṢ̌eitlin et al. 1994, 610), related to Rus. *sladkij* ‘sweet’, Slo. *sladiti* ‘to delight’, and others.  
> This etymology is reflected in Interslavic *osladiti/sladiti* ‘to sweeten’, but the Interslavic word for ‘sugar’, *cukr*, does not exist in OCS. It is based on a different etymology, which is also found in modern Slavic languages : Rus. *sákhār*, Bulg. *sákhār*, BCS *šećer* ... All those words are early Slavic borrowings from different neighboring languages (German, Turkish, Greek) (Kim, n.d.)

- Phonetic-lexical distance

To test the parity of Interslavic in the phonological and lexical fields, we can measure the phonetic-lexical distance of Interslavic with all other Slavic languages. Proximity to other Slavic languages is correlated with a good understanding of the interlanguage by the speakers.

In Meyer 2016, the author is using the ASJP (Automated Similarity Judgment Program) method to calculate the phonetic-lexical distance between three interlanguages (Novoslovienski and Slovianski - the parents of Interslavic, and Slovio) and each Slavic languages, using Levenshtein distance (the number of operations needed to transform a string into another). The lexemes are converted into the ASJP code, a simplified version of the IPA. This allows for unification Cyrillic and Latin scripts and reduce faulty results due to arbitrary orthographic features of different languages. ASJP lexical calculations are based on a reduced version of the Swadesh list, using 40 words or more if languages have a high number of cognates. Meyer presents her results in a graph that is reproduced here :



She draws four main conclusions from this study :

- 1) The lexicon of all three constructed interlanguages, including Slovio, are close to each other, and relatively close to every other Slavic languages.

- 2) Novoslovienski's lexicon is the one that differs from Slavic languages the most (in 8 cases), when Slovianski differs the least in 3 cases.
- 3) All three constructed languages show the greatest similarities with Slovenian and Czech. Generally speaking, the lexicon of the interlanguages is closer to Western and South-Western Slavic languages.
- 4) Bulgarian and Eastern Slavic Languages are the farthest to constructed interlanguages.

Such findings are explained by the author using both linguistic and extra-linguistic factors. Meyer mentions that Czech is the native language of Merunka, the creator of Novoslovienski. The important lexical distance between constructed languages and the Eastern Slavic group can be connected with a political will to not give Russian a bigger influence, although it has many speakers and has been very influential in the Slavic area for a long time.

Concerning linguistic factors, Meyer's idea that Slovenian is "generally regarded as the transitional language between the West and South Slavic languages" and therefore has the smallest lexical distance with the interlanguages echoes with Gooskens findings on "central" languages, which are strongly intelligible to their neighbors, as opposed to more peripheral languages. For Gooskens (Gooskens et al. 2018), such a position in the Slavic family is held by Slovak, whose lexicon is quite close to the Interslavic one on Meyer's graph.

Applying Meyer's methodology to a similar study including Old Church Slavonic would be a good way to evaluate and analyse the phonology of Interslavic.

In the meantime, we can conclude that the contemporary phonological inventories of Slavic languages have more weight in the design of Interslavic phonology than the phonologies of OCS or Proto-Slavic do. Meyer's study shows that in terms of phonological-lexical distance, Interslavic is closer to Western Slavic languages, including Slovak or Slovenian described as "central", than it is to Bulgarian or Macedonian, which are South Slavic languages like OCS. The overall system is a collection of shared features in modern Slavic phonology more than it is a reflection of the OCS system. It appears that mutual intelligibility and a search for simplicity are more important than historical consistency.

#### II.2.3.4. *Selection of issues in Slavic phonology*

- Palatalization

Regarding palatalized consonants, Interslavic follows a pattern found in several Slavic languages, i.e. contrastive palatalization exists in prevocalic position for every consonants (Bulgarian) or for certain types of consonants (labials and nasal consonants in Belarussian and Polish). In Interslavic, palatalization - or not - of a consonant before a vowel mostly depends on the etymology of the word. The -lj- sound in *nedelja*, for instance, is palatalized because it comes from a late Proto-Slavic palatal consonant. As a result, palatalization of consonants in Interslavic is phonemic only when preceding a vowel (Merunka 2012). Every type of consonant (including labials) can be plain or palatalized in theory. Merunka admits the Eastern pronunciation with the softening of consonants in non-prevocalic position in Interslavic. However, it is only a free phonetic variation, and it does not bear a phonemic contrast.

The author adds that “only in specific instances, where hardening could lead to the loss of clarity or could create a wrong homonym with another word, we would need to keep soft pronunciation and need to write soft consonants. (e.g. *konj* = a horse ↔ *kon* = termination; *mědj* = copper ↔ *med* = honey)” (Merunka 2012). The distinction between palatalized and non palatalized consonants in Interslavic is neutralized in word-final position, except if, due to etymological reasons, a contrastive palatalization exists in the last syllable of the stem (see 1-2)

- (1) OCS *kòňъ* ‘horse’ (*‘kòňъ’* in Derksen 1996), related to Cz. *kůň*, BCS. *kŏnj*, Rus. *kon’*, Bulg. *kon* ;  
> Interslavic *konj*  
> The etymological stem of *kòňъ* has a palatalized /n/ which became word-final with the Fall of the Jers.
- (2) Proto-Slavic *\*konǫ* ‘end, beginning’, (*‘konъ’* in Derksen 1996) related to Rus. *kon* ‘row, turn, kitty (in games)’, OCz. *kon* ‘end’, BCS. *kŏn* ‘beginning, end’ (in the expression *od kona do kona* ‘from beginning to end’);  
> Interslavic *kon-* (in *končati se* ‘come to an end’, *konec* ‘end’)  
> The etymology of the stem has a non-palatalized /n/, reflected in the daughter languages and in Interslavic.

Those cases where a word-final contrastive palatalization is found can be explained diachronically by acknowledging the evolution of each stem. However, their presence in the language does not match the consistency and regularity one would expect from a phonological system studied in synchrony, especially in a constructed language.

Therefore, the general system of contrastive palatalization in prevocalic position follows the logic of acoustic optimality, as well as the majority of Slavic languages where contrastive palatalization exists *at least* in prevocalic position. The etymological

exceptions discussed above are a compromise between the constraints of a phonological system designed for efficient communication and a will to legitimate the interlanguage using etymology. This allows Interslavic to blend in the Slavic family both as a modern tool for communication and a plausible daughter (or step-daughter) language to Proto-Slavic and OCS.

- Vocalic system

Although the consonantal system of Interslavic is always the same in its different descriptions, the vocalic system of Interslavic differs in the respective works of Merunka and Van Steenberghe.

The vocalic system of Interslavic is presented as follows by Merunka (Merunka 2012; 2018):

i				ʊ (*[jʊ])
	ɛ ([ʲɛ])		(3)	ɔ
		a		
Syllabic l, r.				

fig. 15 : Vowels of Interslavic according to Merunka (Merunka 2012 and Merunka 2018).

In comparison, here is the vocalic system of InterSlavic presented by Van Steenberghe :

	Front	Near-front	Central	Near-back	Back
Close					
Near-close					
Close-mid					
Mid					
Open-mid					
Near-open					
Open					

+ Syllabic r and optional r'

fig. 16 : Vowels of Interslavic according to Van Steenbergen (van Steenbergen, n.d.)



In Merunka 2012, two vowels have a joticized (soft) counterpart : hard /o/ and soft /e/ ; hard /ě/ and soft /i/. They are found in the two declension patterns - respectively the hard and soft patterns (see II.3.1.3). Such a distinction in the vocalic system is of the utmost importance, because it plays a decisive role in morphology.

Van Steenbergen's system, on the other hand, is a much more complex and irregular system, and is mostly built as a collection of the many Slavic vocalic systems. Seven vowels are phonemic and their pronunciation is fixed, but Interslavic also has "5 optional vowels (/ǎ/, /ě/, /ę/, /ò/, /ǔ/ ) whose pronunciation may vary" in the "flavorised versions of Interslavic" (van Steenbergen, n.d.).

Those two systems correspond to two visions of Interslavic : in Merunka's system, Interslavic is a mathematical "gravity center" for Slavic languages ; in Van Steenbergen's system, flexibility, adaptations and variations are the elements which allow every Slavic speaker to recognize and produce speech in the interlanguage. Merunka's system only preserves shared vowel features in a basic five-vowels system, whereas Van Steenbergen's system includes optional nasality, openness differences for similar vowel qualities ([ɔ] vs [ɒ]), and syllabic consonants.

- Vowel/zero alternations in paradigms

Van Steenebergeen provides an outline of cases where alternations between e/o and zero are found . They are the following ones (after van Steenbergen, n.d.) :

- In the nominative (and, in the case of inanimate nouns, the accusative) singular of masculine nouns, particularly those ending in -ec and -ok, as well as a few other nouns : nom.sg. *otěc* 'father' > gen.sg. *otca* ; nom.sg. *pěsok* „sand” > gen.sg. *pěska* ; nom.sg. *pěs* 'dog' > gen.sg. *psa* ; nom.sg. *són* 'dream' > gen.sg. *sna* ; nom.sg. *króv* 'blood' > gen.sg. *krvi*
- In the genitive plural of feminine and neuter nouns that would otherwise end in a consonant cluster : nom.sg. *okno* 'window' > gen.pl. *okn* ; nom.sg. *miska* 'bowl' > gen.pl. *misok*
- In the nominative singular masculine forms of certain pronouns : m.nom.sg. *věs* 'all, entire', f.nom.sg. *vša*
- Before certain suffixes : *piśmo* 'letter, script' > *pisěmny* 'written, in writing'.

Those are the cases where, like in *Ruski Jezik*, the alternation vowel/zero is kept because it originates in historical phonological developments (i.e. the Fall of the Jers).

- The prepositions **s** and **v** when preceding certain pronouns or consonant clusters, or when used as a prefix before a vowel or a consonant cluster : s ‘with’ + *mnoju* ‘me (instr.sg.)’ > *sŏ* ; *mnojyv* ‘in’ + *vsih* ‘all (loc.pl.)’ > *vŏ* ; *vsih-* + *držati* > *sŏdržati* ‘to contain’ ; *v-* + *idti* > *vŏjdti* ‘to enter’.

This is a phonetic epenthetic vowel which aims at breaking illicit consonants clusters and strange sonority slopes.

The choice of vowel quality (preference for -e-) in Interslavic is explained in a quite unusual way :

“Although there is a preferred losing vowel "e" because of its analogy with other European languages (e.g. Greek, Latin, Germanic, ...), it is also possible to use a losing vowel "o" because it is common in Eastern Slavic languages, Polish and Slovak. This reflects the change of the original hard reduced vowel "ъ" from the Old Church Slavonic to the vowel "o" in these languages. This "o" option applies only in case of replacement of the hard reduced vowel "ъ". Remember that the transformation of the soft reduced vowel "ъ" must go always only to the losing "e". example: son (a dream N), sna (a dream G), (based on the original OCS сънъ” (Merunka 2012)

This explanation combines two founding elements of Interslavic. First, the historical consistency. A phonological development that happened in Slavic languages supports the existence of Interslavic choice of phonemes : here, the development of OCS "ъ" into "o" in some Slavic languages (/a/, /e/ or /ə/ are other developments that happened) is used as a justification. Second, the analogy with the use of -e- in other European languages<sup>3</sup> is a more unconventional justification. It is unrealistic that a natural language would have a rule roughly summarized as “-e- will be our epenthetic vowel, because a majority of our neighboring languages uses -e- as an epenthetic vowel”. However, in the case of a constructed language, such a reasoning does make sense, because it relies on a widely shared linguistic feature that non-Slavic speakers learning Interslavic could use in the learning process.

## II.2.4. Conclusions and discussion

In this part, I have investigated several areas of phonology and the way they are handled in the respective grammars of Ruski Jezik and Interslavic.

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<sup>3</sup> French, for example, has an epenthetic -e- or -ə-, which is found in vocalic alternations schwa/zero or schwa/vowel/zero. A word like “fenêtre” (‘window’) can be pronounced /fə.nɛtʁ/, /fnɛtʁ/, or even /fœtʁ/ in a very articulated pronunciation. (Basbøll and Verluysen 1988)

*Ruski Jezik* and Interslavic both allow variations in their scripts. Scripts and orthography can be modified depending on the target audience of a specific text. In Interslavic, what Merunka calls “flavorisation” of the orthography has communicative efficiency as a purpose : a text is “flavorised” in the most understandable and simple way in order to be intelligible. In the case of *Ruski Jezik*, whose orthography can not be described as “simplified”, it is a way to improve intelligibility for a target audience and to promote the possibility for a Slavic script - Cyrillic - to be used in a Slavic *Lingua Franca*.

The impact of accentuation on mutual intelligibility of Slavic languages is difficult to measure precisely. Examining constructed interlanguages might be a way to understand its influence and mechanisms. Interslavic, like the majority of modern Slavic languages, has a stress accent. Although it is mobile, like in several modern Slavic languages and in the Proto-Slavic/OCS model, the numerous rules on where it should be positioned show that the fixed accentuation found in other Slavic languages has an influence on the interlanguage. Probably because it was designed by a native Czech speaker focused on written Interslavic, prosody and accentuation are not given a lot of importance in Interslavic. The mobile accentuation of *Ruski Jezik* is more interesting because it was built as a bridge between a pitch accent language (Croatian) and a stress-accent one (Russian). Although its exact nature and functioning are debated, Križanić’s effort to create a pitch accent “translatable” into Russian is an alluring idea with regards to mutual intelligibility, and it would deserve to be studied in depth.

Both *Ruski Jezik* and Interslavic have phonological inventories that can easily be related and derived from the reconstructed Proto-Slavic phonology. Both systems are based on shared features amongst Slavic languages and tend to put aside non-common phonemes or phonotactic rules (e.g. syllabic consonants). When looking at the big picture, both systems succeed in having a balanced phonology that would be intelligible to their respective target audiences.

I have discussed several issues in phonology that are of interest in the study of mutual intelligibility. Quite interestingly, *Ruski Jezik* and Interslavic often bring up similar solutions to the various issues under examination.

Firstly, contrastive palatalization. Although it is explicitly modeled on Russian phonology, *Ruski Jezik* allows contrastive palatalization only in prevocalic position. A similar situation is found in Interslavic, with some exceptions due to etymological considerations. Both interlanguage have large inventories of plain/palatalized pairs (e.g. labial consonants are included), but restricted environments where palatalization is contrastive. Despite the centuries separating their creations, it is noteworthy that both

interlanguages dismiss the Russian model of palatalization to follow an acoustically optimal model instead.

Secondly, the vocalic systems of the interlanguages under examination. Interslavic has two possible vocalic systems : a basic one with five vowels distinguished by features common to all Slavic languages, and an optional one which comprises features found only in a few Slavic languages (phonemic length, nasality ...). Ruski Jezik preserves the phonemic length of vowels, which is found in Croatian but not Russian. The vocalic systems of the two interlanguages are more complex and flexible than their consonant systems. This adds to studies on the restricted role of vowels in carrying linguistic informations (see I.1.2.2), as well as the vagueness of vowel features considered in Levenshtein calculations (see II.2.1.3). All those elements could be a good indication that the role of vowels in mutual intelligibility - and intelligibility in general - is less important than the role of consonants.

Finally, the vowel/zero alternations in paradigms. In both interlanguages, vowel/zero alternations in paradigms are preserved. In Ruski Jezik, short /a/ is the only vowel that can be found in such positions. Interslavic, based on etymological considerations, allows both /o/ and /e/. Interslavic preference for /e/ stems from analogy with other neighboring languages, and Ruski Jezik /a/ is inspired by the Croatian model. In both cases, an apparently arbitrary situation - the quality of the epenthetic vowel - is regularised by analogy with another language (Croatian in Ruski Jezik) or group of languages (Interslavic and Indo-European languages).

## II.3. Morphosyntax

### II.3.1. Nominal system

#### II.3.1.1. Nominal system in Slavic languages

- Categories and marking

In Slavic languages nouns, adjectives, pronouns and numerals belong to the nominal system. They are marked for gender, number and case. Slavic languages have three genders (masculine, feminine, neuter) and two numbers (singular and plural). Some languages also have dual forms (Slovene, Sorbian). Cases, of which there are commonly six or seven, are usually expressed through suffixes added to a stem ('WALS Online - Feature 51A: Position of Case Affixes' n.d., 51). This differs in the case of Bulgarian (and Macedonian), but I will discuss this distinction later.. All Slavic languages - except

Bulgarian/ Macedonian - have Nominative, Genitive, Dative and Accusative cases, as well as Instrumental and Locative cases. Some languages have a Vocative.

**Animacy.** Animacy is marked in the Accusative Singular of the Masculine. It is expressed using the Genitive Singular endings for animates, when inanimates are marked with the Nominative Singular endings. Some languages have this distinction in other cases (e.g. Polish and Czech distinguishing animate and inanimate masculine in the genitive singular) or in different genders and numbers (e.g. in the accusative plural, Russian has genitive marking for animates of all genders).

**Hard and soft declension patterns.** Slavic languages distinguish between soft and hard declension patterns. The assignment of nouns to a paradigm or another, as well as the effects of the soft/hard distinction, vary according to the language. The assignment of certain types of consonants (e.g. velar consonants) to a hard or soft pattern differs in all languages. For example, Russian velars /k/, /g/, /h/ always belong to hard patterns, but Polish velars have variants with soft endings -i or -ie, and therefore belong to the soft pattern.

**Marking.** Regular correspondences in the nominal morphology of Slavic languages are noticeable, for example in the nominative and genitive forms of the singular masculine. Some correspondences are listed in the table below. Those regular correspondences, which were used by Golubović (Golubović and et al. 2016, 133:149 ) to improve mutual intelligibility between Czech and Croatian speakers, are crucial data in the design of an interlanguage. Some of them are given as examples in the following table :

		Russian	BCS	Czech	Polish
SINGULAR	NOM	student	student	student	student
	GEN	studenta	studenta	studenta	studenta
	DAT	studentu	studentu	studentovi	studentowi
	ACC	studenta	studenta	studenta	studenta
	INS	studentom	studentom	studentem	studentem
	LOC	studente	studentu	studentovi	studentcie
	VOC	-	studente	studente	studentcie
PLURAL	NOM / VOC	studenty	studenti	studenti	studentci
	GEN	studentov	studentāta	studentů	studentów
	DAT	studentam	studentima	studentům	studentom

	<b>ACC</b>	student <b>ov</b>	student <b>e</b>	student <b>y</b>	student <b>ów</b>
	<b>INS</b>	student <b>ami</b>	student <b>ima</b>	student <b>y</b>	student <b>ami</b>
	<b>LOC</b>	student <b>ah</b>	student <b>ima</b>	stendent <b>ech</b>	student <b>ach</b>

fig. 17 : Hard declension of the word 'student' (meaning "student") in Russian, BCS, Czech and Polish, after Heinz and Kuße 2015, 121-122.

Regular marking correspondences are found in the Nominative, Genitive, Accusative and Instrumental singular cases, as well as in the Nominative plural, where the regularity of correspondences is demonstrated based on the endings (e.g. Russian -y corresponding to BCS and Czech -i and Polish -i with palatalization of the stem). In some other cases phonological correspondences are irregular and don't display obvious phonetic similarities. Although a solid common ground exists for the nominal morphology of Slavic interlanguages, exceptions do exist and should be taken into account.

- The Old Church Slavonic model and the Bulgarian-Macedonian exception

**Old Church Slavonic.** Old Church Slavonic is explicitly used as a model in both *Ruski Jezik* and *Interslavic*. The nominal system of Old Church Slavonic, although it is close to those of modern Slavic languages, has specific features not found in all modern Slavic languages. Old Church Slavonic has a Vocative case, which is found in several modern Slavic languages (Polish, Serbo-Croatian, Bulgarian, Czech, Macedonian, Sorbian ..). On top of singular and plural numbers, OCS has a dual number with three different markings (Nominative-Accusative-Vocative, Genitive-Locative, Dative-Instrumental): dual is found in modern Slovene and Sorbian. The old case forms of dual have remnants in several Slavic languages (e.g. Russian and BCS). In modern Bulgarian, they are reinterpreted as a "specific dependent quantified plural form for masculine non-personal nouns, used only in combination with cardinal numerals and other quantifiers", as in *dvà koraba* ('two ships'), *tri konja* ('three horses') (Nitsolova 2017, 118:122).

**Bulgarian.** Another element that must be taken into account in the design of an interlanguage is the nominal system of modern Bulgarian and Macedonian, which widely differs from that of other Slavic languages. I will discuss here the nominal system of Standard Modern Bulgarian to illustrate the issues a Bulgarian speaker might face if an interlanguage follows the nominal patterns displayed above.

**Loss of case system.** Bulgarian, like other Slavic languages, has the categories of gender (masculine, feminine, neuter) and number (singular, plural). Its peculiarity is that, in the course of its evolution, Bulgarian has lost its case system. Nowadays, Bulgarian only

distinguishes between a common and a vocative case, although remnants of the case system are found in some of its dialects, in old proverbs and in written texts from the 19th-20th centuries (Nitsolova 2017, 118). Syntactic relations are expressed using prepositions with the non-vocative forms. Although the marking of Bulgarian vocative comes from the Old Bulgarian vocative case, it is not strictly speaking a morphosyntactic element. It is only used to express address and does not indicate any syntactic relation in a sentence.

The absence - or loss - of case systems is commonly found in the *Balkan Sprachbund* (among others : Romanian, Albanian, Bulgarian, Greek and Turkish) but strikingly contrasts with the structure of Slavic languages. Bulgarian has a highly analytic structure in its nominal system, opposed to the synthetic structures of other Slavic languages, as shown in the following example :

- (1) Objects in Bulgarian are doubled with a short dative or accusative pronoun highlighting the syntactic role of the subject, which is rendered in other Slavic languages by case endings.**

Bulg. : *Na nègo mu dàdoha gramotà* : 'to him they gave him a diploma'

Rus. : (Oni) *emu dali gramotu* : '(they) to him gave a diploma)

**Marking of (in)definiteness.** Finally, Bulgarian displays a quite unique feature : the morphological marking of (in)definiteness by means of articles. Definiteness is a complex topic at the crossroads of semantics, morphology and pragmatics. All Slavic languages have ways to indicate (in)definiteness of a noun, but Bulgarian is an exception in having it marked by an article. The Bulgarian definite article stems from Old Bulgarian anaphoric demonstrative pronoun -t(V) marked for gender and number. In modern Bulgarian, it is marked for gender and number, and it is a productive morpheme. A related -t(V) element is found in other Slavic languages (e.g. Rus. -to- in *kto-to/čto-to*), but it has an anaphoric function which implies definiteness only because it refers to a previously mentioned object. Indefiniteness in Bulgarian is shown in two ways : either by the lack of a definite article (zero marking), or by using the article *edin* (M. *edin* ; F. *edna* ; N. *edno* ; PL. *edni*). The form *edin* is related to the numeral *edin* ('one'), but has detached from and is marked for number and gender when used as an article.

Prepositions in Bulgarian carry more syntactic information than they do in other Slavic languages, where such information is found in case endings. On the other hand, Bulgarian nominal morphology marks an information (definiteness) that is not found as such in other Slavic languages. Both Golubović and Gooskens (Golubović et al. 2016; Gooskens et al. 2018) mention those differences when it comes to mutual intelligibility between Bulgarian and other Slavic speakers.

- Conclusions

After comparing nominal systems of Slavic languages, it is easy to draw a general common system that could be used in an interlanguage. With the notable exception of Bulgarian, all Slavic languages share a similar case system (with nominative, accusative, genitive, dative, instrumental and locative cases) as well as common categories, such as animacy, which are part of the morphological marking of nouns. Slavic languages share common patterns such as the distinctions between hard and soft declensions, but the assignments of nouns to one or another category vary a lot among languages.

Regarding marking, regular phonological correspondences exist in many case endings, but some of them (see fig. 17) diverge a lot. Categories such as dual number or vocative cases are missing from several Slavic languages, but have remnants in the modern Slavic languages.

Finally, the outlying structure of Bulgarian in terms of nominal morphology must be considered when discussing the structure of an interlanguage, because it might pose a problem for the intelligibility of Interslavic by Bulgarian speakers.

### II.3.1.2. *Ruski Jezik*

It must be kept in mind that *Ruski Jezik*, unlike Interslavic, does not aim at balancing every Slavic influence, but rather at assembling “pure” Slavonic elements into a language. Križanić’s native dialect and his knowledge of Russian were the two main inspirations in the design of *Ruski Jezik* (Du Feu 1975). Therefore, it is relevant to discuss the nominal system of *Ruski Jezik* in comparison with them, and not with, for instance, modern Bulgarian.

- Categories

**Case system.** *Ruski Jezik* has a declension system with seven cases and three genders (masculine, feminine, neuter) (Križanić 1666). According to Du Feu (Du Feu 1975), although some remnants of dual forms (e.g. dual pronouns) can be found in Križanić’s work, the dual is dismissed as a category, because “it serves no purpose, nor does it add any beauty to the language, but only creates confusion and a lot of inconvenience” (Du Feu 1975, 123). Nevertheless, dual forms of nouns are given in Križanić 1666 with a declension pattern similar to that of Old Church Slavonic (syncretism of Nominative-Vocative-Accusative, Genitive-Locative, Dative-Instrumental). It is noteworthy that, although Križanić explicitly acknowledges that both Russian and his native dialect had no Vocative case at that time, he chose to keep it in his system with a morphological marking distinct from the Nominative in the Singular Masculine and Singular Feminine (hard) declension patterns.



**Animacy.** Animacy is a category of Ruski Jezik and, following the Russian example, is morphologically marked by using the genitive endings in the masculine singular form : according to Du Feu (Du Feu 1975), “Križanić’s misapprehension of the accusative for a nominative has already been referred to in connection with the relatives. He condemns the usage at length and insists on the genitive type forms with masculine animates”.

**Hard/soft patterns.** Declension patterns follow a hard/soft division marked orthographically in the vowels (*lito/lice* - see II.2.2.4) or in consonants.

- Marking

The endings of the nominal system of Ruski Jezik largely resemble those of Russian from that time, as is shown in the following table :

	Ruski Jezik		Russian (17th century)	
	Брат 'brother'		Соколъ 'falcon'	
	SINGULAR	PLURAL	SINGULAR	PLURAL
NOM	Брат	Брати	Соколъ	Соколы
VOC	Брате	Брати	Соколъ	Соколы
ACC	Брата	Брати	Сокола	Соколовъ
GEN	Брата	Братов	Сокола	Соколовъ
DAT	БратѸ	Братом	Соколу	Соколамъ
INS	Братом	Братми	Соколомъ	Соколами
LOC	Братѣ	Братѣх	Соколѣ	Соколахъ

fig. 18 : Hard masculine animate declension, after Križanić and Lomonosov (Lomonosov 1757)

It is significant that, unlike Lomonosov, Križanić’s orthography omits the final jers which are not phonetically realised. Such jers are preserved in Lomonosov grammar (see *соколъ* pronounced /sokol/). Regarding this matter, *Ruski Jezik* seems to favour simplicity over the standard orthographic forms of Russian. Although a vocative case is still mentioned in Lomonosov grammar, it is visibly collapsing with the nominative forms in 17th century Russian. *Ruski Jezik*, on the other hand, has distinct vocative endings in most declension patterns, following the Old Church Slavonic model. Animacy is only marked in the Singular Accusative form (use of Genitive endings), unlike in Russian where a similar distinction is made with plural nouns.

### II.3.1.3. Interslavic

Unlike *Ruski Jezik*, Interslavic was designed using data from all Slavic languages, and therefore has to deal with greater diversity in nominal morphology. Because Bulgarian speakers are also targeted by Interslavic, the nominal morphology of Interslavic and the solutions it brings to the Bulgarian issues will be discussed. The nominal system of Interslavic follows a naturalistic pattern.

- Categories

**Case system.** The typical case system of Slavic languages is kept as it is, including a vocative case, although it is not found in all Slavic languages. Interslavic has three grammatical genders (masculine, feminine and neuter) and three numbers (singular, plural, dual). Dual is treated as an “optional” case : “Neoslavonic has the optional dual as well, which is like a special form of plural for exactly two objects. [...] In this book we will not use the dual because it is not absolutely needed for basic communication. We will address it only with respect to paired body parts (e.g. eyes, ears)” (Merunka 2012, 45). The presence of the dual and the vocative case shows that Interslavic, emphasizes on the importance of the OCS and Proto-Slavic models, and aims at including every existing nominal category found in Slavic languages.

**Hard/soft patterns.** Interslavic has a distinction between soft and hard patterns, which are reduced to two regular patterns per gender. Merunka provides general rules to identify the gender of a noun : “generally, the majority of feminine words are ending in -a, neuter words ending in -o or -e, and masculine words ending in a consonant, but a beginner can not rely absolutely upon this” (Merunka 2012, 45). Gender assignment is mostly a grammatical feature because it depends on the endings, but what Merunka calls a “visible sex” (e.g. *žrebec* = a stallion, *byk* = a bull) can give a clue regarding the gender of a noun. Gender assignment follows rules found in all Slavic languages : for instance, cubs are all assigned to the neuter gender (Merunka 2012, 45).

**Animacy.** As in a majority of Slavic languages, the distinction between animate and inanimate is visible in the Accusative Singular of the Masculine gender, but not in plural forms or other genders.

**Nouns and adjectives.** According to Merunka (Merunka, personal communication), his first model of Interslavic had similar case endings for both Adjectives and Nouns, but he ended up proposing a model with a different pattern for adjectival declension, after the requests of Interslavic learners. This situation shows that the naturalistic view in the nominal system was preferred by speakers over a schematic reduction of case endings, although such a reduction might seem easier or more logical at first glance.

- Marking

It is noteworthy that the declension patterns of Interslavic resembles a lot those reconstructed for Proto-Slavic, with a focus on avoiding similar endings for the oblique cases. Genitive Plural, for example, has an ending *-ov* in Interslavic, similar to the Russian and Polish ones (see fig. 17). This ending has been changed throughout the history of Slavic languages to avoid ambiguity (PSl. gen.pl *bràtъ* is similar to nom.sg and acc.sg forms). Interslavic keeps the disambiguated ending rather than one closely resembling Proto-Slavic.

INTERSLAVIC			PROTO-SLAVIC	
Brat 'brother'			Bràtъ (bràtrъ) 'brother'	
	SINGULAR	PLURAL	SINGULAR	PLURAL
NOM	Brat	Brati	Bràtъ	Bràti
VOC	Brate	Brati	Bràte	Bràti
ACC	Brata	Braty	Bràtъ	Bràty
GEN	Brata	Bratov	Bràta	Bràtъ
DAT	Bratu	Bratam	Bràtu	Bràtomъ
INS	Bratom	Bratami	Bràtъmъ (north), Bràtomъ (south)	Bràtŷ
LOC	Bratu	Bratah	Bràtě	Bràtěxъ

Fig. 19 : Compared markings of Interslavic and Proto-Slavic in the masculine hard declension for the word *\*brat* 'brother' (after Merunka 2012)

These similarities reinforce the historical consistency of Interslavic and its position of step-sister language to OCS. Additionally, a marking system similar to that of OCS allows for not choosing endings typical of a group of Slavic language over all others

- The Bulgarian issue

A simple solution to the Bulgarian issue is, according to Merunka (Merunka, personal communication), to rely on the Bulgarian speakers' knowledge of another, more "typical", Slavic language (mostly Russian or Serbian) in order to understand the system of Interslavic. However, Gooskens and Golubović's (Gooskens et al. 2018; Golubović 2016) studies show that, although Bulgarian speakers may be aware of the grammatical system of surrounding Slavic languages, they still score quite low on mutual

intelligibility tests. Prior knowledge of another Slavic language is not a satisfying solution to reach optimal communication, and surely an insufficient one from a theoretical point of view. However, it is the only one proposed by Interslavic.

**Case system and prepositions.** Golubović's study (Golubović 2016, 49) the issues in mutual intelligibility that Bulgarian speakers encounter without giving more details. There are no studies on this specific matter that I am aware of. Testing what mistakes Bulgarian speakers make when learning a "typical" Slavic language (Russian, Polish ...) would be an interesting way to determine what morphosyntactic features are the most difficult for them to produce or recognize. Observing how native speakers of different Slavic languages - including Bulgarian - use Interslavic could give some indications on the morphosyntactic features they recognize and use first, and the ones they struggle with.

For instance, one could assume that Bulgarian speakers would tend to use Interslavic prepositions. These prepositions are similar in shape and general meaning to their related forms in Slavic languages, including Bulgarian ; but, unlike in Bulgarian, they are not mandatory and should be followed by a declined noun. Interslavic provides some tools for Bulgarian speakers to recognize and produce morphosyntactic reconstruction, but it seems to be assumed that nominal morphology will not be that big of an obstacle for mutual intelligibility.

**Articles.** The marking of (in)definiteness in Interslavic is, like in most Slavic languages, not mandatory. By default, a noun is indefinite if it is not preceded by an article. Indefiniteness can be expressed using the numeral "one" (m. *jedin*, f. *jedna*, n. *jedno*) to emphasize the unfamiliarity with an object. However, the Interslavic "one" is not as grammaticalized as *edin* is in Bulgarian, and it is only used with a strong emphatic purpose (Merunka 2012, 44). A definite article m. *toj*, f. *ta*, n. *to*, pl. *ti*. exists in Interslavic and has a similar meaning to the Bulgarian -t(V). However, Interslavic -toj is an anaphoric pronoun rather than an article : like in Russian and other languages, definiteness is only indicated as a consequence of anaphoric reference. Therefore, the marking of definiteness in Interslavic uses morphemes similar to those of Bulgarian, but their use is more restricted. Consequently, it is possible for Bulgarian speakers to express definiteness through familiar means in Interslavic. A general understanding of Interslavic, with the help of context, should be enough to assert the (in)definiteness of a noun.

#### II.3.1.4. Conclusions

Because Slavic nominal systems are very similar overall, both *Ruski Jezik* and Interslavic have extremely naturalistic nominal systems. They include most categories existing - or having existed - in the Slavic family. Both interlanguages retain the dual

number and the vocative case, which are not used - or even exist - in many modern Slavic language, but stem from their shared ancestor.

Both interlanguages have preserved Pan-Slavic features like the morphological marking of animacy in the accusative of the masculine singular declension, and the distinction between hard and soft patterns of declension - reduced and regularized in Interslavic.

Both interlanguages have nominal endings resembling those of their linguistic models. *Ruski Jezik* has endings similar to those of 17th century Russian, and the orthography of *Ruski Jezik* is a more accurate reflection of the phonetic situation of Russian at that time. The endings of Interslavic resemble reconstructions of Proto-Slavic : they could possibly have developed from Proto-Slavic endings.

Bulgarian speakers, which are a concern for Interslavic, are given some options to get a better grasp on Interslavic. The elements used to mark (in)definiteness in Interslavic are similar to the Bulgarian ones, and the rich inventory of Interslavic prepositions can be used in order to communicate in the interlanguage.

Overall, *Ruski Jezik* and Interslavic display similar nominal systems. They are both naturalistic systems with markings explicitly inspired by their respective linguistic models. Although the nominal morphology of Bulgarian is, in theory, an issue for Interslavic, it is looked over because it does not match the way every other Slavic languages function.

The nominal systems of both *Ruski Jezik* and Interslavic are inclusive and naturalistic models : they have a lot of categories, including some that were lost in many languages. This solution is the opposite of what an Esperanto-like language would demonstrate : it is only made possible by the relative homogeneity of Slavic categories in the nominal system.

In the next part, I will focus on verbal systems of Slavic languages and how they are rendered in Interslavic and *Ruski Jezik*.

## II.3.2. Verbal system

### II.3.2.1. Verbal system in Slavic languages

Unlike nominal systems, verbal systems differ a lot across Slavic languages. The Bulgarian (and Macedonian) verbal system is once again an exception in the Slavic world, because it retains and develops many features of the Common Slavic verbal system, which is well-preserved in Old Church Slavic. I will focus here on aspect and

tense - and their interaction - in the verbal system, because both their meaning and their morphology vary a lot across Slavic languages.

- Aspects

Aspects are a typical feature of Slavic languages. They are briefly defined as follows : “Perfective expresses the actualization of an inherent boundary (change of state) (cf. Lindstedt 1985), [whereas] Imperfective expresses [an] inherent boundary [that is] defocused (effects: iterativity, conativity, durativity, etc.)” (Kamphuis 2020, 22). Anaspectual verbs, which cannot be classified as imperfective or perfective, have “a large aspectual potential [because they have] many different forms and context” (Kamphuis 2020, 19-20). The exact meanings and uses of aspects in Slavic languages are debated. I will adopt here the position defended by the East-West Theory of Slavic Aspect as developed by Adriaan Barentsen and Stephen Dicken, and summarized in Fortuin and Kamphuis (REF). The “East” group comprises Russian, Ukrainian, Belarussian and Bulgarian, and the “West” group comprises Czech, Slovak, Slovene and Sorbian (Fortuin and Kamphuis 2015, 168) :

- In the East, but not in the West, only the ipf aspect can be used in the case of past habitual contexts. In the West, both the pf and ipf are possible;
- in the East, but not in the West, only the ipf pres. tense can be used in the case of the historical pres. In the West, both the ipf and the pf are possible;
- in the East, but not in the West, a past tense narrative context requires the use of the pf in sequences of events. In the West, the use of ipf in such past tense narrative contexts is more common;
- in the East, but not in the West, the ipf past tense can be used with single complete terminative events without a process phase. In the West, the ipf past tense is only possible with terminative events that have a process phase. (Fortuin and Kamphuis 2015, 204)

Although the meanings and uses of aspect vary, aspect couples are formed in a similar manner in all Slavic languages. A perfective verb is formed with a corresponding imperfective verb by placing a prefix in front of it (eg. Russian ipf. *pisat'* - pf. **zapisat'**, **dopisat'**, **napisat'**). Because prefixes add some meaning to the stem (Rus. ipf. *pisat'* ‘to write’, pf. **zapisat'** ‘record, write down’), an imperfective counterpart can be created to a perfective by adding an imperfective suffix (Rus. pf. **zapisat'** > ipf. **zapisivat'** ‘record, write down’).

Slavic aspectual couples are formed using similar morphological processes, but the important divergences in their meanings is an issue that should be addressed by a Slavic interlanguage.

In addition, verbal aspects in Slavic languages cannot be understood properly without considering verbal tenses. In Old Church Slavonic for instance, there is a strong connection between specific verbal aspects and tenses, visible in the graph below :

### Grammatical profile of three main groups

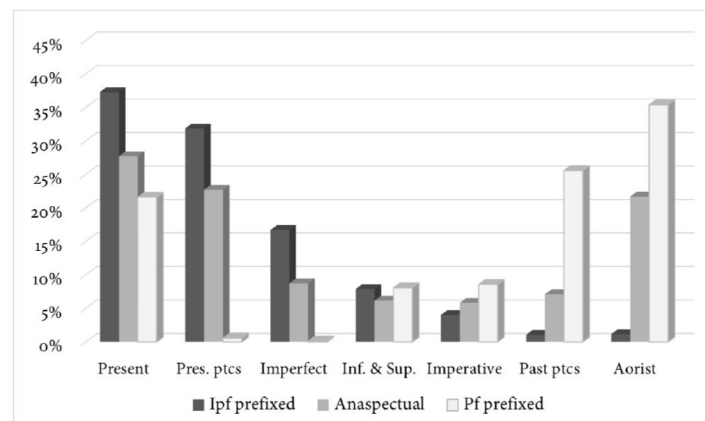


fig. 20 : Correlations between aspects and tenses in Old Church Slavonic, after (Kamphuis 2020, 36). The three bars correspond to three aspects, and their frequency in percentage is quantified for each tense.

Imperfects, for instance, chiefly select imperfective verbs, whereas aorists select mostly perfective verbs. This is consistent with the semantics of perfective or imperfective aspects and imperfect or aorist tense.

Complex verbal systems like the one of OCS have been reduced in many modern Slavic languages, where redundant aspect-tenses semantic similarities (typically, the important overlapping of Imperfect-Imperfective and Aorist-Perfective) have been reduced to aspectual differences (e.g. Russian has one past tense, with imperfective or perfective aspects).

- Tense

Tense systems in the various groups of Slavic languages differ greatly. The complex verbal system of Proto-Slavic has been preserved in Old Church Slavonic and in some South Slavic languages (e.g. BCS), and extended in Bulgarian. On the other hand, verbal tenses in modern Eastern and Western Slavic languages have generally been simplified and reduced to a three-member system, aside from a few remnants.

**Past tenses.** All Slavic languages can form past tenses using the so-called L-participles (i.e. a verbal stem to which -l- followed by a mark of gender and number is added) : Rus. *pisa-l-i* and Cz. *psa-l-i* ‘they were writing’. In Polish, Czech and South Slavic languages, the L-participle is accompanied by an auxiliary verb *byti* ‘to be’ ; in Russian, the L-participle stands alone. In Bulgarian, L-participles pasts are a possibility amongst other past tenses.

**Present & future.** Regarding the formations of the present and future tenses, there is a divergence between Eastern and Western Slavic languages, and between Balkanic Slavic languages (Bulgarian, Macedonian, also BCS). In the former, future tenses are formed using the auxiliary verb ‘to be’ (*byti*) followed by a form of the infinitive (or L-participles in Polish), whereas in the latter it is the verb ‘to want’ (*htjeti*) that is combined with the infinitive. Future tenses in Bulgarian will be discussed in detail later.

The formation of the future tense in Slavic languages, and its relationship to the present tense, is a good example of interactions between tenses and aspects. For instance, the use of a perfective verb in the present tense has a future meaning in Russian and in Czech, but only in Czech can it also be used as an habitual present (compare 1.a & 2 below – after (Fortuin and Kamphuis 2015) :

(1) **Russian**

- a. *Ja vyp’ju rjumku vodki*  
I **drink(PF)-1SG** glass(F)-ACC.SG vodka(F)-GEN.SG  
‘ I will drink a glass of vodka’
- b. *Každyj den’ ja vypivaju rjumku vodki*  
Every day I **drink(IPF)-1.SG** glass(F)-ACC.SG vodka(F)-GEN.SG  
‘ Every day I drink a glass of vodka ‘

(2) **Czech**

**Vypije** jednu skleničku vodky  
**Drink(PF)-3SG** one glass(F)-ACC.SG vodka(F)-GEN.SG  
*denně*  
daily  
‘ (S)he drinks one glass of vodka every day ‘

- Bulgarian and Old Church Slavonic verbal systems

I will discuss here the verbal systems of Old Church Slavonic and Bulgarian for several reasons. Firstly, OCS is an important source of inspiration for both *Ruski Jezik* and



Interslavic. Secondly, the Bulgarian verb system differs a lot from that of other Slavic languages, making it an interesting outsider which should be considered in the design of an interlanguage. Finally, although it is an exception in modern Slavic languages, the Bulgarian system is quite close to the one of OCS.

**Infinitive and Supine.** OCS has a nominal form called supine, resembling the infinitive in its morphological making and used after verbs expressing motion. Already in OCS times, supines were disappearing and their function was taken by infinitives. Supines survived in Slovene, Czech and Lower Sorbian (Nandriş 1959, 155), but were replaced by infinitives or other constructions in most Slavic languages

**Past/Non-past opposition.** The OCS verbal system is based on a past/non-past opposition, and a similar opposition is found in several Modern Slavic languages. In OCS, the future is a “shade of the present” (Gardiner 1984), understandable because of context. Therefore, the present tense of OCS has a broad range of meanings. It corresponds to the actual present but can also be used for generalities or to describe iterative actions, possibilities, hypothesis and intentions. There is no historical present in OCS : the aorist is used instead. Actual present is mostly expressed with imperfective verbs, and future meaning is often conveyed by perfective verbs. However, imperfective verbs in the present tense can also bear a future meaning. The differentiation comes from context rather than from morphosyntax, unlike in modern languages like Russian where perfective verbs in present tense *always* have future meanings.

**Past tenses.** The verbal system of OCS shares many similarities with modern Bulgarian and Southern Slavic languages in general. OCS has four past tenses : the aorist, the imperfect, the perfect and the pluperfect. Aorist and imperfect are the most common.

The OCS aorist has three morphological forms (sigmatic, asigmatic, enlarged sigmatic (Nandriş 1959) and is the most frequent for the narration of events at a definite past time. The imperfect “sets the background against which the narration develops, and is in contrast with other past tenses, particularly the aorist” (Gardiner 1984, 124) : it is formed using a derivative suffix -AX’b almost exclusively with imperfective verbs.

The perfect and pluperfect tenses are less frequent in OCS manuscripts. The perfect “indicates that the action of the verb has taken place at a time which is past from the point of view of the time of speaking, and that this action is related to the events which are mentioned by the speaker [or are] taking place at the time of speaking.” (Gardiner 1984, 125). OCS perfects are rare except in the 2SG and 2PL (Kamphuis 2020). The pluperfect “is used in a similar way, but instead of referring to the present it refers to a time which is past from the point of view of the time of speaking.” (Gardiner 1984, 127). Bulgarian, like OCS, has four past tenses (aorist, imperfect, perfect, pluperfect), which roughly correspond in their functions to the OCS past tenses.

**Future formations.** In OCS, a “periphrastic future” is formed using the auxiliary ХОТѢТИ (*xotěti* - 'want', often implying intention or inclination) and ИМѢТИ (*iměti* - 'have', implying inevitable outcome or destiny) (Gardiner 1984) in the present tense followed by an infinitive. The forms with ‘want’ + infinitive are now typical of South Slavic languages (Heinz and Kuße 2015).

Bulgarian expands the system of OCS by developing four future tenses (Nitsolova 2017, 432-451). The Future Tense is formed with a petrified auxiliary verb *šte* (from *šta* ‘to want’) and refers to an act performed after the temporal reference interval, which includes the speaking utterance. Its morphosyntactic making (petrified *šte* + present tense of the verb) is a typical Balkanic construction. The Past Future Tense refers to a forthcoming activity with respect to a past temporal interval. It is made with the imperfect of the verb *šta* ‘to want’, the particle *da* and the present tense of the verb. This future is controversially referred to as the “Balkan conditional” by several linguists. The Future Perfect tense (future tense of the auxiliary ‘to be’ *sâm* or *bâda* + aorist participle) refers to an activity performed before a future reference time interval, when the result of the activity will be available. Finally, the future perfect in the past is a complex tense with a resultative meaning. It uses two intervals in the past, one for which the event is forthcoming, and another where the result is available. It is formed with the past imperfect of *šta* ‘to want’, the particle *da*, the present tense of the verb *sâm* and the aorist participle of the main verb. Examples of the four futures are given below (‘Bulgarian Verbs’ 2020) :

(1) **Future Tense**

(Az) *šte četa kniga*  
‘I will read a book’

(2) **Past Future Tense**

*štjah da četa kniga*  
‘I would read a book’ [from a past time reference]

(3) **Future Perfect**

*šte sâm čela*  
‘I (feminine) will have read a book’

(4) **Future Perfect in the Past**

*štjah da sâm čela*  
‘I would have read a book’

**Evidentiality.** A verbal feature found in Bulgarian (and Macedonian) but in no other Slavic languages is evidentiality. Bulgarian has a four-member system of evidential forms, resembling what is found in many Turkic languages ('WALS Online - Feature 78A: Coding of Evidentiality' n.d.). It is explained in the following examples from (Nitsolova 2017, 471-475) :

- (1) The indicative corresponds to the basic "witness" evidentiality.  
*Ivan četeše*  
'Ivan was reading'
- (2) The conclusive, which infers a conclusion from another piece of information.  
*(Znači) Iven e četjal*  
'So, [it means] Ivan was reading'
- (3) The renarrative, which reports a second-hand piece of information.  
*Ivan četjal*  
'[Allegedly] Ivan was reading'
- (4) The dubitative, which emphasizes the distance of the speaker with second-hand information.  
*Ivan bil četjal*  
'[Allegedly] Ivan was reading [but I doubt it]'

Evidentiality in Bulgarian is marked through different morphosyntactic means, and overlaps with modality and tenses. The perfect, for instance, specialises in expressing indirect information, while other past tenses (aorist, imperfect) specialise in expressing witnessed actions (Nitsolova 2017).

- Conclusions

The complex interactions of aspects and tenses are briefly summarized in fig. 21. It shows the system OCS, which inspired *Ruski Jezik* and Interslavic ; Bulgarian because of its specificity ; Russian because it has one of the "simple" systems and is very similar to many Slavic languages. The system of BCS is displayed because it displays some features of OCS and Bulgarian but also because it is, along with Russian, familiar to the creator of *Ruski Jezik*.

	Old Church Slavonic	Bulgarian	BCS	Russian

<b>PAST</b>	Aorist (mostly pf)	Aorist (mostly pf)	[Aorist (mostly pf)]	
	Imperfect (mostly ipf)	Imperfect (on ipf stem)	[Imperfect (almost exclusively ipf)]	
	Perfect (ipf and pf)	Perfect (auxiliary + ipf or pf)	Perfect (auxiliary + L-participle of ipf or pf)	
	Pluperfect (ipf and pf)	Pluperfect (imperfect auxiliary + ipf or pf)	Pluperfect (perfect auxiliary + L-participle of ipf or pf)	
<b>PRESENT</b>	Present (ipf and pf)	Present (ipf and pf)	Present (ipf and pf)	Present (ipf)
<b>FUTURE</b>	Present forms (with pf, also ipf) - from context			Present form of pf
	"Periphrastic future" (auxiliary + ipf or pf)	Future (petrified auxiliary + ipf or pf)	Future (auxiliary enclitic + ipf or pf)	Analytic future (auxiliary + ipf)
		Past future tense "Balkan conditional" (imperfect auxiliary + da + present tense of ipf or pf)		
		Future perfect tense	Future II (auxiliary	

		(future auxiliary + aorist participle of ipf or pf)	+ L-participle of mostly ipf), used in subordinate clauses	
		Future perfect in the past (past future of the auxiliary + aorist participle of ipf or pf)		

fig. 21 : Compared verbal systems of OCS, Bulgarian, Russian and BCS, after (Heinz and Kuße 2015; Nitsolova 2017; Gardiner 1984; Browne and Alt 2004). BCS tenses between brackets are only found in certain dialects and literary languages (Samilov 1957).

Differences between Slavic verbal systems are more important than their divergences in nominal morphology, and therefore should be addressed by interlanguages. Several elements are problematic :

First, although aspectual couples are formed by similar means in Slavic languages, they are used in different ways and have different meanings across languages.

Second, when examined in relationship with tenses, the meanings of aspects diverge even more cross-linguistically. Even if some morphological markings (e.g. the l-participles in past formations) are shared by every language, the formation of tenses actually differs a lot across languages. Future formations are an obvious example because they use both aspects and tenses to convey a future meaning. Bulgarian has developed a future tense system that has no match in the other Slavic languages.

Considering that both interlanguages under examination use OCS as a model, it is important to remember that its complex tense system - which was extended to Bulgarian and other South-Slavic languages - does not resemble the majority of verbal systems in modern Slavic languages.

#### II.3.2.2. Ruski Jezik

The verbal system of *Ruski Jezik* varies depending on the writings of Križanić under examination.

**Past tenses.** In three short articles ("Besída ko Czirkásom", "Pûtno opîsanie ot Lewówa do Móskwi", "Usmotrenie o Carskom Wełiczestwu" 1659-1661) written before the publication of *Gramatično*, no aorist or imperfect tenses are found : only perfect tense (oftentimes without auxiliary) is used. This follows the Russian (as well as Polish, Ukrainian, Czech, Slovak, Slovene, Bielarussian) model, where

such tenses were already lost (Du Feu 1975). In *Gramatično*, on the other hand, aorist and imperfect are retained, although the author advocates for the use of the compound past (auxiliary + l-participle) instead of the aorist form. Regarding this matter, *Ruski Jezik* clearly aims at imitating the Russian model rather than Križanić's native Croatian where imperfect and aorist might still have existed at that time (Du Feu 1975). Complex tense systems are found in both Croatian and Old Church Slavonic, and are part of the history of Slavic languages. Therefore, it is interesting to note that, despite his quest for "linguistic purity", Križanić dismissed these two tenses. This could be interpreted as an attempt to favour simplicity and mutual intelligibility over "purity" in the design of *Ruski Jezik*'s verbal system.

**Future tenses.** The formation of future tense in *Ruski Jezik* is a complicated matter. The use of *budet'* + infinitive is deemed a "Germanism taken over by Poles and Russian" (Du Feu 1975) in the *Gramatično*, although there are examples of its use in Križanić's previous writings (REF). He only advocates for its use with l-participles following *budet'*, in a more "Slavic-looking" construction close to the one found in modern Polish. However, Križanić's main recommendation is to use the typically Serbo-Croatian future after the conjunctions *ako*, *kogda* or *da* in conditional clauses referring to the future (Du Feu 1975).

**Marking.** The endings of Križanić's verbal system are taken from Russian or Russian Church Slavonic (Du Feu 1975) with only few modifications.

### II.3.2.3. Interslavic

- Aspects

The perfective aspect in Interslavic is described as "the unitary view without any internal temporal flow" ; and the imperfective as "the non-bound view with reference to some internal temporal flow" (Merunka 2012, 92). Merunka acknowledges the different uses of aspects across Slavic languages, as well as the fact that perfective verbs can be used to convey future meaning. Aspects in Interslavic are regularized based on their morphological formations, as summarized in the table below :

	Imperfective	Perfective
Infinitive in <i>-vati</i>	X	
Infinitive in <i>-nuti</i>		X
No prefixes	X	

Prefixes		X
----------	--	---

fig. 22 : Morphology of verbal aspects, after (Merunka 2012, 93).

Van Steenberghe is more flexible and admits irregularities in aspectual pairs : “sometimes aspect pairs are irregular, for example *nazyvati* (impf.)/*nazvati* (pf.) „to call, to name”, *prihoditi* (impf.)/*prijdi* (pf.) „to come”, *podimati* (impf.)/*podjeti* (pf.) „to take up, to undertake” (‘Interslavic – Verbs’ n.d.). He underlines the fact that motion verbs have different meanings for aspects. Anaspectual or biaspectual {Updating} verbs are not categorized as such, but it appears that the verbs *byti* ‘to be’ and *imati* ‘to have’ have a special status in Interslavic : they don’t have an aspectual pair and they can be used with both imperfective and perfective meanings without prefixation or suffixation.

- Tense system

The tense system of Interslavic is made of three basic tenses (past, present, future) and can be extended to a six-tense system. Interslavic has an imperative and a conditional, as well as an optional dual number which is not discussed in Merunka’s basic grammars (Merunka 2012 and Merunka 2018). Each verb has a present and a past stem that might be identical to each other. Each basic tense (past, present, future) has a corresponding “prior” tense, yielding the following system :

<p><b>Past tense</b></p> <p>&gt; L-participle past tense : addition of -l- and gender/number marked endings</p> <p>&gt; “Simple past tense” with past stem and a distinct set of endings (similar to BCS, Bulgarian, OCS, Sorbian ...)</p>	<p><b>Prior past tense</b></p> <p>&gt; Auxiliary <i>byti</i> ‘to be’ in past tense + L-participle of the verb</p>
<p><b>Present tense</b></p> <p>&gt; Present stem and present set of endings</p>	<p><b>Prior present tense (composed past tense)</b></p> <p>&gt; Auxiliary <i>byti</i> ‘to be’ in present tense + L-participle of the verb</p>
<p><b>Future tense</b></p> <p>&gt; Auxiliary <i>byti</i> ‘to be’ in the future tense + infinitive of the verb</p>	<p><b>Prior future tense</b></p> <p>&gt; Auxiliary ‘<i>byti</i>’ in the future tense + L-participle of the verb</p>

fig. 23 : The symmetrical tense system of Interslavic, after (Merunka 2012, 73, 83-86)

Unlike its nominal system which looks extremely naturalistic, the verbal system of Interslavic is more schematic. It is based on “symmetrical” categories and morphological marking which are not found as such in any living Slavic language.

**Present tense.** Like in modern Slavic languages, it is built with a set of specific endings and has a distinct present stem.

**Past tense.** Past tense in Interslavic can be formed in two ways. The first one is typical of Southern Slavic languages (also found in Sorbian, and not in Slovene) : it is a simple past with past stem and its own set of endings. The other one resembles what is found in Eastern and Western Slavic languages, with the use of L-participles.

**Future tense.** It is formed in an analytic way (auxiliary *byti* + infinitive). The use of perfective presents to convey future meaning, which is familiar to Eastern Slavic speakers, is not found in Interslavic.

**Prior tenses.** Prior tenses are formed in a mathematical way. They are a combination of a L-participle indicating that something is anterior with an auxiliary *byti* conjugated according to the moment the action was prior to (i.e. past for past prior tense, present for present prior tense, future for future prior tense). Although such categories and their formations may have equivalents in the variety of Slavic languages, the symmetrical relation they have in Interslavic is far from the naturalistic vision displayed in the nominal system. This mathematical structure aims at balancing the diversity of Slavic verbal systems.

- Marking

Interslavic has two conjugation patterns, named “hard” and “soft” by analogy with the nominal system. They could be referred to as “first and second conjugations” but, in order to follow Merunka’s terminology and its symmetry with the nominal system, I will call them “hard” and “soft”. Hard and soft endings are similar, except the soft one which include -i/-j- can lead to the palatalization of the final consonant of the stem :

		Hard pattern	Soft pattern
1.SG	<i>ja</i>	-u	-ju
2.SG	<i>ty</i>	-eš	-iš
3.SG	<i>on, ona, ono</i>	-e	-i
1.PL	<i>my</i>	-emo	-imo
2.PL	<i>vy</i>	-ete	-ite
3.PL	<i>oni</i>	-ut	-jut/it

fig 24 : Present tense endings of Interslavic after (Merunka 2012, 73).



The division between hard and soft patterns can be related to the verbal class division established by Leskien in OCS (Leskien 1871).

**(1) Old Church Slavonic Classes I and III and Interslavic Hard Pattern**

**a. OCS (Leskien Class III)**

inf.	znati
1.sg	zna-j <sup>o</sup>
2.sg	zna-ješi
3.sg	zna-jetъ

**b. Interslavic (Hard Pattern)**

inf.	znati
1.sg	zna-ju
2.sg	zna-ješ
3.sg	zna-je

**c. OCS (Leskien Class I)**

inf.	moš-ti
1.sg	mog- <sup>o</sup>
2.sg	mož-ešъ
3.sg	mož-etъ

**d. Interslavic (Hard Pattern)**

inf.	mož-ti
1.sg	mož-u
2.sg	mož-eš
3.sg	mož-eš

**(1) Old Church Slavonic Leskien Class IV and Interslavic Soft Pattern**

**a. OCS (Leskien Class IV)**

inf.	pros-i-ti
1.sg	proš- <sup>o</sup>
2.sg	pros-i-ši
3.sg	pros-i-ti

**b. Interslavic (Soft Pattern)**

inf.	pros-i-ti
1.sg	proš-u
2.sg	pros-i-š
3.sg	pros-i

**c. OCS (Leskien Class IV)**

inf.	var-i-ti
1.sg	var-j <sup>o</sup>
2.sg	var-i-ši
3.sg	var-i-ti

**d. Interslavic (Soft Pattern)**

inf.	var-i-ti
1.sg	var-ju/var-i-m
2.sg	var-i-š
3.sg	var-i

(after Merunka 2012; Birnbaum and Schaeken 1999; Tšëitlin et al. 1994)

The hard pattern (see (1)) comprises verbs of Leskien Classes III and I - as well as II - although the regular conjugation model is closest to Class III : it implies the palatalized vowels -je/-jo as thematic vowels. Alternations between palatalized and non-palatalized forms (see 1.c) are regularized into one palatalized form all across the paradigm in Interslavic (see 1.d). The soft pattern (see (2)) contains mostly Leskien Class IV verbs with -i- as a thematic vowel. This leads to euphony and palatalization of the stem final consonant, visible in the first person of 2.a-d. In Interslavic, a set of endings without palatalization in the 1.sg also exists (see 2.d). Irregular verbs of Interslavic (*byti* 'to be',

*jasti* ‘to eat’, *imati* ‘to have’ ...) basically correspond to the Leskien Class V of athematic (and irregular) verbs.

- Relationship to OCS and Bulgarian

The system of Interslavic is reminiscent of that of OCS and South Slavic languages, including Bulgarian, more than it resembles the Eastern model. Although a tripartite system like the one of Russian would seem “easier” for an interlanguage, a more complex system does exist in Interslavic. This probably has to do with the historical consistency aforementioned, as such a verbal system is a way to “legitimize” the interlanguage.

#### II.3.2.4. Conclusions

It is noteworthy that, although they belong to different eras and have different purposes, *Ruski Jezik* and Interslavic share similarities regarding the functioning of their verbal systems. Both interlanguages tend to prefer more analytic options over synthetic ones, even if the latter are more “Slavic” when taking the history of Slavic languages into consideration.

For instance, both interlanguages recommend using analytic futures (with an auxiliary and an infinitive, or a conjunction and a participle) rather than using the perfective forms of verbs, like it can be done in Russian. Formations of past tenses prioritize the use of compound forms or L-participles over aorist or imperfect tenses.

The prior tenses of Interslavic are good examples of how analytic structures are injected into the verb systems : L-participles indicate anteriority, while the tense of the auxiliary indicates the point in time used as a reference for the action.

Regarding marking, both *Ruski Jezik* and Interslavic display endings resembling those of their linguistic inspiration : *Ruski Jezik* has very Russian-looking endings while Interslavic has OCS-inspired endings which follow the classification made by Leskien of OCS verbs.

Finally, Interslavic has extremely regularized verbal patterns : endings, hard/soft patterns and aspects all give their specific morphological markings, and most alternations between palatalized and non-palatalized consonants in verbal stems have been removed from the interlanguage.

# CONCLUSION

Slavic languages have a sufficient degree of mutual intelligibility to create a naturalistic interlanguage. When applied to Slavic languages, measurements of phonological-lexical distance interestingly match with the historical classification of the languages. Morphosyntactic distance is trickier to measure and conclusions on its influence on mutual intelligibility are less clear.

Predictors of mutual intelligibility (i.e. phonological, lexical and morphosyntactic distances) are considered, at least to a certain amount - in the design of both interlanguages. Ruski Jezik was created using the author's "intuition" of linguistic differences in those areas. Interslavic uses a big amount of statistical data collected in every Slavic language. Both interlanguages assemble common Pan-Slavic elements in order to be instantly understandable for any Slavic speakers. Other influences, like the simplicity models established by Esperanto or Creolistics, might influence the structure of an interlanguage - especially Interslavic. Simplicity models go against the naturalistic vision of Ruski Jezik and Interslavic, and therefore the reason for their presence should be analyzed carefully.

Assessing the efficiency of interlanguages in overcoming obstacles to mutual intelligibility was done in different areas.

In the lexical area, Ruski Jezik and Interslavic globally succeed in compiling a Pan-Slavic lexicon ready to use for communication. Both interlanguages have flexible writing systems adaptable to a specific target audience.

Their accentuation system, on the other hand, are quite different. It is a bit of a neglected question in Interslavic, whereas it is important in Ruski Jezik where Križanić tries to design a kind of "translatable" pitch accent that Russian speakers could understand.

Regarding phonology, both Ruski Jezik and Interslavic use shared Slavic phonemes and phonotactic rules and leave aside more local ones. Their phonological inventories are globally well-balanced and potentially understandable for every Slavic speakers. Ruski Jezik and Interslavic consonantal systems have a lot in common, but their vocalic system differs and are more complex (e.g. phonemic length in Ruski Jezik) or flexible (e.g. Van Steenberghe system in Interslavic). This points towards a more important role of consonants than vowels in carrying linguistic information.

Phonological elements like palatalization and vowel/zero alternations are dealt with in relatively similar ways in both languages. Contrastive palatalization is kept only in prevocalic position, and vowel/zero alternations are usually simplified to have only one vowel alternating.

In the morphosyntactic area, nominal and verbal morphology are handled in different manners

Because nominal systems of Slavic languages are overall quite similar, the systems of Ruski Jezik and Interslavic have very naturalistic patterns, including specific shared Slavic features like morphological marking of animacy.

The endings found in the interlanguages are inspired by their respective models - Russian and OCS - and, in the case of Interslavic, adapted to modern Slavic phonology. The Bulgarian nominal system is not properly taken into account in Interslavic where the nominal structures of the majority of languages are adopted.

The situation of verbal systems in Ruski Jezik and Interslavic contrasts with the nominal one. Although the overall system does look Slavic, especially in its endings, it is not as naturalistic as the nominal system. Verbal systems in Slavic languages differ a lot and it is striking that both interlanguages - with the means of their time - have more schematic structures than in the nominal system. Ruski Jezik uses mostly analytic futures and compound past, and Interslavic has a symmetrical - in meaning and morphology - tense system that has no match in Slavic languages. Interslavic also has a strict regularization of endings, patterns of conjugation and formation of aspectual pair that has no counterpart in the nominal system.

In conclusion, *Ruski Jezik* and Interslavic, despite the centuries between them, often come up with similar solutions to certain issues in Slavic mutual intelligibility. Morphosyntax is worth discussing more in depth, because measuring its influence in mutual intelligibility is harder than measuring lexical-phonological distance. The fact that both interlanguages have extremely naturalistic nominal systems but more schematic verbal system to make up for the differences between Slavic languages would make an interesting base to better understand morphosyntactic intelligibility. This thesis describes solutions brought to some issues that were highlighted. The proper assessment of these solutions should rely on literature on Slavic mutual intelligibility or difficulties encountered by Slavic speakers learning another Slavic language, which is very scarce.

Experiments where Interslavic was tested on speakers of different Slavic languages have been posted on youtube, but a rigorous settings where different elements are tested separately (e.g. the schematic verbal system, the naturalistic

nominal system with Bulgarian speakers ...) and where the production of Interslavic speech by speakers of different Slavic languages is yet to be done.

Such an experiment would evaluate the efficiency of Interslavic for communication and, if the results are good, would help the language gain legitimacy in the Slavic world. From a theoretical point of view, researchers could use this constructed language as tool to understand better what specific areas are problematic for mutual intelligibility by observing how efficient Interslavic structures are in communication and, eventually, modifying some of their features to test their specific roles in mutual intelligibility.

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