The Interslavic language as a tool for supporting e-democracy in Central and Eastern Europe

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Abstract: The quality of information systems to support democracy and public administration in the Slavic countries between Western Europe and Russia can be improved through the use of Interslavic, a zonal constructed language that can successfully replace English as a regional lingua franca, enhance participation and improve the overall quality of ICT used for e-Democracy assignments. Its potential role in improving computer translation between fusional languages with free word order by means of graph-based translation is discussed as well. This paper gives an overview of the pros and cons of various language options and describes the results of public research in the form of surveys, as well as the practical experiences of the authors. Special emphasis is given to the crucial role played by education: it is assumed that language, e-democracy, and education form a triangle of three inseparable, interdependent entities. Finally, the paper describes how these ideas can be developed in the future.
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**Keywords:** e-democracy; education; Interslavic language; lingua franca; zonal constructed language; receptive multilingualism; Slavic countries; Central and Eastern Europe; human-computer interaction.


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1 Introduction

E-democracy is a political dialogue in which citizens, and communities in general, engage in the political process using computer-based technology. It refers to the practical use of information systems to support democratic processes, and encompasses activities that increase citizen involvement, such as virtual town meetings, open meetings, cyber campaigns, feedback polls, public surveys and community forums such as e-voting, etc. In general, it is all about supporting communication and participation of people in various political, cultural and spiritual activities in the modern world, as defined in the higher levels of the Maslow’s hierarchy of human needs (Maslow, 1943).

Information systems, like any other system, consist of components and the links between them. These components are not just computer software and hardware, but also the people who determine the quality of the outcome (Wallace, 2015).

To communicate within Europe, people learn English. Yet, a lot of people still do not speak English sufficiently well. An alternative for using English might be receptive multilingualism: speakers of two different, but related languages both speak their own language and can understand each other to a certain extent. This is possible when languages are mutually intelligible. The Scandinavian languages, for instance, have a high degree of mutual intelligibility, and receptive multilingualism is widely used in Scandinavia. The advantage of this communication is that speakers can express themselves in their native language and only need to focus on understanding the other language.

The situation is Central and Eastern Europe is particularly challenging. The region is a patchwork of small, mostly Slavic countries, each of them having its own national language. Most of these languages are not mutually intelligible, and knowledge of English in generally low among their citizens. Besides, the political situation in the region is far from stable, and in several countries the development of democracy and civil society is severely hampered. Allowing them to lag behind in the process will inevitably lead to their isolation, which may turn out extremely dangerous for the stability of the entire continent. One might say that active support of participation and e-democracy are needed there more than anywhere else.

Effective multilingual behaviour to support civic participation in e-democracy requires proper education. After all, language is the most elementary tool for education, but without education it can hardly be promoted, applied and developed. The same goes for e-democracy, which requires both younger and older generations to be educated into citizens who consciously use ICT for development policies. The competences needed for this can only be achieved by means of a language that respects regional and national identities, and is understood by all citizens, including those without knowledge of foreign languages. Knowledge of this language is necessary not only to enable people to read, to fill out forms or to apply for subsidies and grants and the like, but also for broader communication in various other fields, like e-education, culture, science, politics, civic initiatives and economy, without the need of learning a completely new language.

We believe that the Interslavic zonal constructed language fulfils these requirements (Kocór et al., 2017). In this paper, we will attempt to demonstrate the interdependence between Interslavic, e-democracy and education in the light of the views and experiences of authors from different countries and scientific institutions.
2 Motivation

The Report on e-democracy by the European Parliament from 16 February 2017 (Report 2017) emphasises the need for simplification of institutional language and procedures and for the organisation of multimedia content that explains the keys to the main decision-making processes, in order to promote understanding and participation. Also, it notes that in order to ensure equal accessibility of e-democracy tools for all citizens, high-quality multilingual translation is important when information is to be disseminated and read by all citizens. In other words, comprehensibility of the used language is essential for working e-democracy, and obviously, not all citizens can be expected to master professional legal English. Besides, e-democracy is not merely about elections, official documents and legal deeds, but most of all about regional initiatives and direct contacts between groups and individuals in the fields of culture, tourism, sport, trade and education. The lack of English actively prevents people with much potential from taking initiatives, formulating ideas, inviting others and demonstrating good local practices.

Similarly, the OECD report of 2003 on e-Democracy (OECD, 2003) speaks about the need for using ICT to increase citizens’ participation by means of a comprehensible language, not by promoting English as the only language of ICT. Likewise, the conclusions of the International e-Democracy Conference in Athens (Katsikas and Sideridis, 2015) confirm that the interest in the use of ICT in public life (and, vice versa, technophobia against ICT), including social networks and community life, is directly dependent on the use of a language that the domestic population can understand.

For example, sophisticated software and associated education and training data and textbooks, such as of special GIS or business process visual simulators, and decision-support systems or workflow-based systems are generally either not localised into national languages at all, or the localised versions are very expensive and even obsolete. Yet, this type of software could significantly reduce the technophobia of participants in local life situations with a direct impact on the e-democracy (EFITA, 2013). One such example is the poor situation in the area of self-government of small municipalities where we have to solve many problems related to the development and expansion of small settlements, landscape care and over-all efforts to improve the quality of life and the level of democracy, while preserving the conditions of sustainable development (addressing living standard, cultural and historic value, agricultural and industrial production, transport infrastructure construction, tourism potential, etc.). Technophobia of local people is a significant factor here, because of the contrast with incoming investors and external people penetrating the rural area by urban sprawl tendencies (Frumkin et al., 2004).

Next, there is enormous pressure on the standardisation of legislation, implementing regulations and technical standards in the world, most of all within the European Union. Without this standardisation, the idea of e-democracy is impossible. Although it is true that the EU translates most of its publications (e.g., legislation, directives, other documents) into the national languages of its member states, these translations are often incomplete, and many older documents are not translated at all. Especially small nations are unable to have everything translated in time and thus end up maintaining the status quo in their national languages. This problem is even more serious in the case of countries that are currently not part of the EU, but hope to become members in the future.

During recent years, there has been a substantial increase in Euroscepticism among the populations of Central and Eastern Europe. Twenty years ago, membership of the EU
was broadly seen as their access ticket to a better world, but much of this optimism has faded away, and nowadays, Brussels is often perceived as ‘the new Moscow’ instead. Many citizens fear that the EU will lead to the destruction of their national identity – this was stated clearly by the international conference *Perspectives of language communication in the EU*, held in 2016 under the auspices of the V4 countries and the European Commission (Nitra, 2018). Undoubtedly, this feeling of alienation is strengthened by the fact that knowledge of any of the EU’s main working languages – English, French and German – is far from common in this part of Europe.

The consequence is that democracy is jeopardised through the loss of participation in public life and an overall loss of contact with the modern world, which to ordinary people merely means a different world dominated by English and computers. In addition, unless countermeasures are taken, the dichotomy between West and East European members, as well as the dichotomy between members and non-members of the EU, will inevitably lead to political instability on the European continent.

For all the reasons stated above it is clear that the use of a comprehensible language to the public is a crucial factor in the success of all e-democracy processes and technologies. The role of education cannot be underestimated here, because the state of education – its purposes, its contents, its level, its methods and means, the competences of teachers – is tantamount to both the willingness of people to learn the language in question, the level of their language skills and the political maturity needed for the application of modern information technology for development. In other words, e-democracy requires a solid motivational base, which is determined by language and education.

3 The linguistic landscape in Central and Eastern Europe

A particular opportunity for improving e-democracy by means of receptive multilingualism can be found in the zone between Western Europe and Russia. This region consists of no less than 19 countries, most of which are relatively small: 16 of them have less than 10 million inhabitants, which in terms of population makes them smaller than Belgium. Of these 19 countries, 12 can be considered Slavic nation states, whereas four others have a sizeable Slavic minority. None of these nations has any colonial past, and in general, their impact on the bigger European picture is minor.

The ‘Slavic zone’ is a patchwork of many different languages and cultures. Almost every small state has its own language. These languages have a strong, almost monopolistic position in the countries where they enjoy an official status, but for practically every Slavic language goes that it this is true in one small or middle-sized country only. In other countries, active knowledge is highly uncommon and mostly limited to mixed families and language professionals. The only exceptions here are populations that for a longer period of time have been exposed to some dominant language: Czech in Czechoslovakia, Serbo-Croatian in Yugoslavia and Russian in the Soviet Union.

This lack of linguistic cohesion puts these nations under considerable pressure in the modern globalised world, and significantly complicates the processes of e-democracy and advancing European integration, which is all the more threatening if one considers that together, the Slavic nations represent 1/3 of the entire population of geographic Europe.
It is important to realise that the Slavs have a lot more in common than ancient history, linguistic kinship and folklore. Less than 30 years ago, they all lived in closed, largely passive societies ruled by oppressive regimes, a few years later they all found themselves in a post-communist vacuum, each of them struggling to find its own place in a rapidly changing world. In today’s global village, national borders are losing their importance and isolation is no longer an option. To face the challenges of modern times, partnership within the same geopolitical realm is inevitable, especially since the emergence of a mental gap between life and culture of the own nation, and the ‘western’ outer world is very dangerous and can easily be abused politically.

Genuine partnership cannot be achieved without intensive communication on an international level, and this communication may not be allowed to be a luxury for the elites only. On the contrary, it is a *conditio sine qua non* for participation at any level. Without it, a significant part of society will be excluded from all progress and development, which in turn may jeopardise stability and democracy in the entire region.

3.1 The role of English

Due to its status as a global *lingua franca*, English is a common tool for the exchange of knowledge between nations, even though the UK is currently separating itself from Europe. However, a vast majority of people are excluded from this means of communication. Most Slavic speakers are either monolingual, or their knowledge of foreign languages is extremely limited. In Poland, the Czech Republic, Slovakia and Bulgaria knowledge of English is restricted to 20–30% of the population (Eurobarometer 243, 2006). In addition, the level of this knowledge is often low, insufficient for even the most basic communication. In Poland, for example, only 12.7% of the individuals who know a foreign language are actually proficient in it (Eurostat, 2015). The general tendency is that the further East one travels, the harder it becomes to have a conversation in any other language than the local one. In the Russian Federation, English is spoken by less than 5.5% of the population (All-Russian Census, 2010).

Nowadays, some people argue that English owes its popularity to the way it affects people. Indeed, it is often said that English is simple and hence a suitable *lingua franca*. However, as the American founder of linguistic anthropology, Edward Sapir, wrote: English is a ‘hornet’s nest’ of problems. Although it does not have grammatical cases (except for the ‘Saxon genetic’), English is a very specific language, with its own culture and a highly complex phonology, phraseology and vocabulary, not even to mention the problems with spelling. Its phonetics, grammar structure, semantics, syntax, etc., are radically different from Slavic. What Westerners are often unaware of is that to Slavs, English is an outright alien language, and that mastering it requires competences and predispositions that many people simply do not have at their disposal. Even though statistics display some slow improvement, it seems unlikely that English will be able to fulfil the same role in Central and Eastern Europe as it does in Western Europe.

On top of this, an extremely high level of homophony produces problems, both in learning the language and, especially, in using it in computer translations. This is why, for example, computer translations via Google Translate between Czech and Polish or Croatian are totally unusable, often even absurd and ridiculous. English is simply not suitable as a pivot language between Slavic (and not only Slavic) languages.

Phillipson (1992), who worked for many years in the British Council, explained in various details that English linguistic imperialism was a policy consciously adopted by
Great Britain and the USA as a means to achieve political, economic and other goals. For the same reason, English is poorly equipped for expressing a pan-European identity. After the Brexit, only 10% of the EU citizens can speak it well. Its exclusive use would therefore “exacerbate social inequalities, and be perceived as elitist” (Nitra, 2018). An example of these inequalities is the fact that submissions in the field of intellectual property and patent rights must be drafted in English, French or German, which leads to high translation costs for European businesses in countries where these languages are not official, costs that are not fully compensated. As a result, protection of intellectual property rights at a European level is much cheaper for a US or Australian subject than for a Slovenian or Polish one, for example.

Along with Phillipson (1992) and Wierzbicka (2014), we claim that monolingual orientation on English brings negative effects, such as weakening professional communication of neighbouring nations among themselves and even reducing the number and quality of professional publications and the decline of regional knowledge transfer. That is why not only the Central and Eastern Europeans, but also the Italians and the Portuguese, are not excited to speak English with the French or the Spaniards. That does not mean that English cannot serve as a lingua franca, only that it does not work well outside the Germanic realm. After all, it is a known fact that many Scandinavians, Germans and Dutch speak it excellently, sometimes even better than many British residents.

3.2 Russian as a lingua franca

It has been argued that Russian could reclaim its role as a lingua franca for Central and Eastern Europe. Russia, after all, is by far the largest Slavic nation, accounting for roughly half of all Slavic mother tongue speakers, and spoken fluently by a vast majority in Ukraine, Belarus, the Baltic states and other former constituents of the USSR. It is the only Slavic country with a long, unbroken tradition of statehood, and has always played a key role as a regional superpower. Besides, isn’t Russian the language of so many brilliant minds, with an incredibly rich literature and broad usage in science and technology?

The truth is, however, that Russian has irreversibly failed to ever become a successful Slavic lingua franca. For a long time, it has been overused as a tool for political domination, and people in other countries still tend to perceive it as the language of the oppressor. After all, a genuine lingua franca cannot be imposed with brutal political force, but must be chosen freely (Donskis, 2014).

Another problem is the Russian language itself. Had it been sufficiently simple and understandable to other Slavs, resistance against it could probably be overcome with time. But Russian has specific phonetics, a very complicated grammar, a particular Cyrillic alphabet and a lot of vocabulary that lacks universal Slavic qualities – all things that place it far from the imaginary linguistic centre of Slavic.

3.3 Receptive multilingualism

A lingua franca is not the only possible means of communication between people who do not speak each other’s language, and this brings us to the issue of receptive, or passive, multilingualism. In short, this means that each side speaks their own language, while trying to actively understand the language of the other side.
Compared to other languages families, the Slavic languages have a relatively high degree of mutual intelligibility. More than anything else, this is due to the fact that their common ancestor Proto-Slavic started developing into separate branches and individual languages at a relatively late point in history. In the 10th century there still was a reasonable degree of linguistic unity with no more than some dialectical differentiation. Even in the 19th century Pan-Slavists voiced the opinion that all Slavic languages were dialects of a single Slavic language, an assumption they based on the example of other languages with highly divergent dialects, such as Greek, Arabic, English and German. If all dialects of these languages could be united under a single language, they argued, why could not the same thing be achieved for Slavs? (Majar, 1865).

During the last two decades, research has been conducted on Slavic intercomprehension. Pioneer in the field is the Slavist Lew Zybatow, who initiated and led the project EuroComSlav, aimed at enhancing intercomprehension by showing the learner how much he already knows without actually knowing that he knows. This is achieved by means of ‘seven sieves’, the most important of which are: international vocabulary, common inherited vocabulary, and recognising correspondences between languages in sound, spelling and pronunciation (Zybatow, 2002).

Another recent project exploring receptive multilingualism among Slavs is the Mutual intelligibility of closely related languages (MICReLa) project of the University of Groningen. One of the outcomes of this research is that receptive multilingualism functions among Czechs and Slovaks in much the same way as it does among Scandinavians, and although the same cannot be said about combinations like Slovak/Croatian, Slovak/Polish or Croatian/Slovene, receptive multilingualism is possible here as well, albeit with some practice. Other combinations, however, tend to be more problematic, especially when Bulgarian is involved (Golubović and Gooskens, 2015).

Although MICReLa focuses on the six Slavic languages spoken in the European Union, we may assume that the same conclusions can be applied to the remaining Slavic languages as well. Thus, a Pole will understand Ukrainian or Belarussian reasonably well if it is spoken slowly and clearly. As soon as languages are more remote, however, communication is not so simple anymore. In contacts between, for example, a Russian and a Slovene, or a Czech and a Bulgarian, it is unlikely that resorting to gestures or some other intermediary language can be avoided. As Heinz demonstrates, Slavic intercomprehension is especially problematic when it comes to auditive transfer, because prosody and the absence of orthographical differences are minor advantages compared to problems of a phonological nature, such as incorrect identification of phonemes and word boundaries, as well as misinterpretations on a morphological and lexical level, caused by deceptive cognates and wrong associations (Heinz, 2009).

Another issue is the difference in scripts. The border between the Latin and Cyrillic alphabets runs right through the middle of Slavic territory, coinciding more or less with the border between Roman Catholicism and Orthodoxy. At the left side of this border (especially in Poland, the Czech Republic and Slovakia), knowledge of the Cyrillic alphabet is rather uncommon. One might expect that most people who speak a language that uses a non-Latin alphabet must have enough knowledge of the Latin alphabet, but a recent study reveals that a lot of young people in the former Soviet Union have serious problems understanding Slavic texts written in a Latin alphabet.

In other words, receptive multilingualism is possible, but only on a limited scale. The direct consequence of this fact, in combination with widespread monolingualism and
the lack of a widely known and accepted lingua franca, is that many Slavic people are practically cut off from the world outside their own country, which forces them into isolation and makes participation impossible. This is especially dangerous in countries where pluralism leaves much to be desired, and access to neutral, reliable information is scarce.

4 The Interslavic experiment

What significantly stands in the way of mutual intelligibility is the fact that every Slavic language has idiosyncrasies (specific phonological alterations, changes in grammar, shifts in the meanings of words, borrowings from neighbouring, non-Slavic languages, etc.) that make it harder to understand for speakers of other languages. However, these hindrances can be overcome. All Slavic languages are characterised by the presence of large amounts of international vocabulary, a similar grammatical structure, and a considerable number of common inherited words (Zybatow, 2002) provides a list of 1500 words labelled as Pan-Slavic). A connecting factor is also that the sound changes that distinguish the modern languages from their common ancestor Proto-Slavic tend to be highly predictable. For example, the Proto-Slavic phoneme є (writtenѧ in Old Church Slavonic) practically always becomes ja in East Slavic and e in South Slavic. Once a person knows this, it becomes relatively easy to recognise correspondences.

The seven sieves of the EuroComSlav project (Zybatow, 2002) are aimed at recognising elements in other Slavic languages. However, the same principles can also be taken one step further, namely by applying them actively. This can be achieved by consciously avoiding the aforementioned idiosyncrasies, using words and grammatical elements that are broadly understandable in the Slavic world, and presenting them in a spoken and/or written form that makes them easily recognisable. This idea has culminated in the creation of an Interslavic language, the main premise of which is that it should be understandable to all Slavs, no matter which nation they belong to.

The idea of such a language is far from new. In the 16th century the Croatian priest Šime Budinić published his translations of works by Peter Canisius into a complex literary language he called Slovinsky, in which he mixed Serbo-Croatian, Church Slavonic, Czech and Polish, using both Latin and Cyrillic. In the years 1659–1666 another Croatian priest, Juraj Križanić, was the first to actually describe the language itself, which he also used for his magnum opus Politika and several other works. At the height of Pan-Slavism in the 19th century several language projects were published in the process of creating a literary standard for South Slavic, all of them essentially modernisations of the Old Church Slavonic language, and during the 20th century various authors have attempted to create a simplified ‘Slavic Esperanto’ (Meyer, 2014, p.158).

The Interslavic Project was initiated in 2006 under the name Slovianski. Initially, different possible language models were being experimented with, thus all based on the modern Slavic languages. In 2009, it was decided that only the most naturalistic version, initiated and developed by Jan van Steenbergen, would be continued. In 2011, a close collaboration was started with another project, Neoslavonic by Vojtěch Merunka, which had been published one year earlier. Unlike Slovianski, Neoslavonic was geared towards modernising and simplifying Old Church Slavonic, although surprisingly both approaches gave almost identical results. During subsequent years, differences between
both ‘dialects’ have gradually vanished, allowing them to evolve into a single language standard called Interslavic instead (van Steenbergen, 2016). In the summer of 2017, the last remaining differences between both grammars were eliminated.

Interslavic can be classified as a so-called zonal constructed language, an artificial language created to facilitate communication between speakers of a group of closely related languages. Languages of this type are fundamentally different from languages intended for global communication, such as Esperanto. The latter are typically characterised by simplicity and regularity, whereas in zonal languages the main focus lies on familiarity and immediate passive understanding. That does not mean that a zonal language cannot be simple, only that the type and level of simplicity are always conditioned by the speakers of the particular language family it serves.

It has been disputed whether Interslavic can really be considered a constructed language. Before the 20th century, authors certainly did not believe so. In their view, Slavic was a single language with highly divergent dialects, a process they hoped to reverse by using a modernised form of Old Church Slavonic as its literary standard, similar to the highly archaic form of Greek known as Katharevousa, aimed at unifying many Greek dialects. Since several Slavic languages already had a well-established standard at the time, this would essentially qualify Interslavic as a Slavic Koiné language. On the other hand, the fact that various improvised forms of Interslavic have been used in multi-Slavic environments for centuries, without ever having any native speakers, could also justify its classification as a pidgin language (Vagner, 2017, p.36).

Besides, the process of creating Interslavic does not involve any creative activity, bearing more similarities to the codification of languages like Rumantsch Grischun, Bahasa Indonesia, Modern Hebrew and revived Cornish – languages that are generally considered natural, even though their very existence is the direct result of human intervention. In this context it is also worth mentioning that Interslavic is not the work of a single author, but the fruit of long-time scientific research performed by many. In addition, the ultimate shape of this language is also determined by input from its user community.

The place where Slavistics and interlinguistics intersect has long been ignored by scholars of both sides, probably because it fell outside their main scope of interest. In 1989, the Russian-Estonian linguist Aleksandr Duličenko was the first to express the need for a new discipline he called Slavic interlinguistics. Especially after 2010 the topic of Slavic intercommunication in general and Interslavic language projects in particular have found recognition in scientific circles (Meyer, 2014, p.64).

4.1 Characteristics

The Interslavic language is entirely based on material that can be found in all Slavic languages, or whenever there is no such solution available, in a majority of them. This goes for grammar, phonology, orthography, syntax and vocabulary. As a result, Interslavic has an inflecting grammar, similar to that of the Slavic languages: three grammatical genders (masculine, feminine, neuter), four basic noun declensions, seven noun cases, singular/plural distinction, adjective agreement, two basic verb conjugations and verbal aspect. The language has very few irregularities, which makes it relatively easy to use.

All elements of Interslavic are determined by two major design criteria. The first is that all six major sub-branches of Slavic (Russian, Ukrainian/Belarussian, Polish,
Czech/Slovak, Serbo-Croatian/Slovene and Bulgarian/Macedonian) are weighed equally in establishing the largest common denominator. The purpose of this approach is to place Interslavic in the middle of the Slavic language continuum, and to prevent any input language from getting undue weight. The second criterion is that Interslavic never borrows directly from any Slavic language, but applies a consistent system of regular derivation from reconstructed proto-forms instead. This is necessary to ensure etymological coherence and to prevent the language from becoming elements taken from different languages. As a result, Interslavic words are usually predictable for Slavic speakers.

Interslavic can be written in both alphabets, Latin and Cyrillic. Written texts are often presented in both orthographies, so that every Slav can read them in the alphabet that is most convenient for them. Apart from these basic alphabets, Interslavic orthography also has a set of optional characters conveying additional etymological information, called Scientific Interslavic. The home page of the project contains a tool for automated transliteration between all alphabet options.

A typical feature of Interslavic is that its components can easily be applied to any of the ethnic Slavic languages. This has the advantage that every new element one learns can be put to use immediately. As a result, the learning process differs significantly from the way other languages are learned, because it is essentially a matter of gradually learning how to transform one’s own native language into Interslavic. The more one learns, the closer one comes to the core of Interslavic: the scientific extrapolation of the language at the very centre of the Slavic languages. Our experience is that speakers of Slavic languages tend to perceive Interslavic either as an ancient or remote dialect of their own native language, or some neighbouring language closely related to their own. Even those who are sceptical about constructed languages do not recognise it as such, and people are often surprised how much they can understand of it without knowing what language it is.

It is important to note that Interslavic does not only allow a writer or speaker to make himself understandable to speakers of any Slavic language. Thanks to the seven sieves, it will also help him in getting a better passive understanding of other Slavic languages.

Although Interslavic is primarily intended to be used by Slavs in contacts with other Slavs, the same educational value can work equally well for non-Slavs, as it will allow them to get a basic understanding of all Slavic languages at once, and also considerably facilitate their access to the Slavic-speaking world.

5 \textbf{Practical experiences and research on Interslavic}

5.1 \textit{Conferences on the Interslavic language}

Since its inception, Interslavic has been much discussed in the press and on the internet, both within its circle of currently ca. 2000 users and interested bystanders and elsewhere. Extensive use in various contexts and feedback from all Slavic countries has made it clear that the primary purpose of Interslavic, to be understood by Slavs of any nationality without prior study, has been achieved. Until recently, however, this could be said only about written Interslavic, as experiences with spoken Interslavic were scarce and mostly limited to individual contacts.
On 1–2 June 2017 the first Conference on the Interslavic language (CISLa, 2017) took place in the Czech town of Staré Město near Uherské Hradiště. There were 64 active participants from 12 different countries, including representatives of several organisations and institutions and experts in the fields of informatics, Slavistics, pedagogy and history. Among the items discussed were: language problems in civil participation, e-democracy, knowledge transfer, and the potential role of zonal constructed languages in education, tourism, digital economy and the development of civil societies in a globalised world.

The conference was a milestone, because for the first time in history Interslavic was used during an official, public event. Most presentations and discussions were either held in Interslavic or translated consecutively into Interslavic, which turned out to be sufficient for all Slavic participants – including Poles and Bulgarians – to understand almost everything. A remarkable and rather unexpected side effect was also that a few participants, who had never learned Interslavic, suddenly started speaking it during the conference. This shows how easily passive multilingualism, with the right tools, can be transformed into active multilingualism.

A second conference (CISLa, 2018) took place on May 31 and June 1, 2018 in the towns of Staré Město and Hodonín, and was attended by 67 participants from 16 countries. Again, most presentations were either held in Interslavic or translated consecutively. In addition, most presentations also had visual slides in Interslavic, which made them significantly easier to follow.

The success of both conferences demonstrates clearly that the Interslavic language makes it possible to organise Slavic multinational activities, such as scientific conferences, cultural happenings, sports events and even beauty pageants with the help of a single interpreter.

5.2 International survey on the internet

Our international survey on the passive intelligibility of Interslavic has been conducted in all Slavic countries from November 2015 to June 2018. This survey consisted of five pages and took a few minutes to respond. It is still available at the website of the Slavic Union (www.slovanska-union.org). Information about this electronic survey was spread through advertising on the social networks Facebook and VKontakte. The target group was formed by the entire Slavic population in the age between 16 and 80 years, who identified themselves as having knowledge of any natural Slavic language, and at the same time were not members of our Interslavic language group.

Our statistical hypothesis was whether the Slavic population would passively understand the language at a level corresponding to that of a slightly advanced speaker. Concretely this means the ability to understand written text and to recognise at least five of seven missing words in the cloze test. The cloze test is a task where a certain number of words (in this case seven words) are omitted from a professional text and replaced by a gap. This gap is normally a horizontal line with the average length of all deleted words in the written version of the test, or a beep of uniform length in the spoken version. The participants’ task was filling in the ‘gaps’ with the right words. The cloze test was inspired by the MICReLa research group, based at the University of Groningen, University of Erlangen, Syddansk University in Odense, University of Copenhagen, University of Ljubljana, and Constantine the Philosopher University in Nitra, who developed a similar online language game to investigate passive intelligibility of
professional texts in various national languages of the Europe, compared to the desirability of English (MICReLa Research Group, 2016).

Until June 2018, we received 1822 valid responses in total. Female respondents were outnumbered by male respondents in the ratio of about 5:1, but gender differences in the results were minimal and far below the value of statistical error. Our respondents from different Slavic nations answered with different willingness and frequency – for example, there were more respondents from a small country like Slovenia than from Russia. For that reason, we recalculated (using weighted averages) our results according to the size of the real population in particular Slavic countries, in order to get a statistically correct representation of the whole Slavic population. We also obtained 56 responses from people whose native language is not Slavic, but who understand some Slavic language because of their surroundings (school, friends, …).

Our hypothesis was confirmed with a sufficient degree of probability, namely 0.816. We used the test “guess missing words in a professional text”. The mean values of all respondents are in the interval between 79% and 93%. (These results are in rescaled values, where 100% equals seven correct words from seven missing words in total, 86% equals six correct words from seven words in total, 71% equals five correct words from seven words in total, 57% equals four correct words from seven words in total, and so on). Only 18% of the respondents (315 out of 1766) answered below the expected five correct words from a total of seven unknown words. Our hypothesis turned out valid for respondents with a non-Slavic mother tongue, who learned a Slavic language later, too. The total mean value was 84%, i.e., nearly six correct words from seven unknown words in total. Some of the partial results of this survey are also very interesting (see Figures 1 and 2).

- There is no dependence on gender and almost no dependence on age.
- Northern Slavic nations expressed little better results in exact test but worse results in subjective test than southern Slavic nations.
- All Slavic nations expressed slightly worse values in their self-assessment than their actual intelligibility results (for example, the total mean value of real intelligibility is 84%, but the total mean value of self-assessment is only 70% in comparable rescaled values).
- There is a weak dependence on education. Slavic people who completed higher education have 88% of mean intelligibility; Slavic people without any university experience have only mean 73% of the average (secondary education only) and 72% of the average (primary education only).

Additional questions also showed that members of smaller nations understand the similar languages of their neighbours better than members of the bigger nations. The biggest asymmetry was between Belarusians, Ukrainians, and Russians. Ukrainians understand Russian at the level of 80% and Belarusians understand Russian at the level of 71%, but Russians understand Ukrainian at a level of only 46% and Belarusian at a level of 39%. In general, people were surprised how much information they were able to understand. Yet, especially younger people still preferred English, even though their English skills were very poor and they would understand much more using Interslavic.

In conclusion, we can say that passive understanding of Interslavic without any prior learning meets the conditions that roughly match the local language-skill requirements...
for immigrants to obtain citizenship in most European countries. Also, we dare say that Interslavic inscriptions on products, in public transport and in offices (e.g., town halls, local government bodies, bus and railway stations, airports, …) would be better for many people than the current inscriptions in English.

5.3 Survey in Bulgaria

In the first half of 2017, a survey was carried out in Bulgaria. Its goal was to study how Bulgarians perceive the Interslavic language. This survey is of special interest for the evaluation of Interslavic: because Bulgarian grammar differs significantly from the remaining Slavic languages, one might expect a relatively low level of mutual intelligibility. Because Bulgarians use the Cyrillic alphabet, the survey focused on their understanding of Interslavic written in the Latin alphabet, since texts in Cyrillic were expected to be significantly more understandable for Bulgarians.

Not a single Bulgarian has been educated to use the Interslavic language so far, and this goes for the people who took part in the survey as well. The motto of the survey, “This is a language of Slavophiles”, was very welcomed by all respondents.

The following hypothesis was subject to verification: the Interslavic language can be used by Bulgarians to support international communication and information exchange with little effort and without any special education. This hypothesis was based on the authors’ understanding that the Interslavic language is universally Slavic and that its structure consists of linguistic characteristics common to all Slavic languages.

The survey was set up as a software application in Google forms, and contained 20 questions of different types, divided into two main groups. The first group of
questions were linguistic questions aimed at studying the language experience, intelligence and logic of the respondents. The second group of questions was intended to reveal people’s language culture and their perception of the Interslavic language. Most of questions were open type and respondents were not given any hints.

The survey was filled out by students and colleagues of Trakia University as well as several people not working in Trakia University or the educational sphere. The total number of the respondents was up to 75, with less than five persons leaving some questions unanswered. The resulting raw data need to be processed further in-depth, so that connections between external conditions, level of education, cultural properties, language experience, age and social status can be revealed, and more conclusions can be drawn regarding the Bulgarians’ perception of the Interslavic language. The general outcome as presented and commented here, however, can be considered very positive and promising.

The answers to the first group of questions revealed that the words and short paragraphs were successfully translated by about 85–93% of the respondents. Ninety-four percent correctly recognised forms of the verbs ‘to have’ and ‘to be’ in various persons and tenses; 81% correctly found other verbs. 69% knew that if we change word order in a sentence, there is no loss of meaning. Only 50.8% recognised that there are noun cases in this language and guessed the right case endings, which is explained by the fact that noun cases are absent in Bulgarian. Interestingly, however, 85% of the respondents picked them up very quickly and did not repeat the mistakes.

The number of incorrect answers ranged from 7% (older students and colleagues) to 50% of mainly young people (first-grade students).

The following conclusions can be drawn after analysis of the survey results:

- The Slavic Latin alphabet is definitely a big difficulty for the young Bulgarians. They made mistakes and returned unexpected, funny answers. They have no experience with studying other Slavic languages and are not familiar with any other Slavic Latin alphabet at all. This is clearly a weakness of Bulgarian education system.

- Another problem was with Bulgarian Cyrillic, which has a character for semivowel ă, while other Slavic languages using this semivowel do not have such character in their Latin alphabets.

- Unlike other Slavic languages, Interslavic included, the Bulgarian language does not have noun cases. This was confusing to some respondents.

- In general, the Interslavic language is understandable for Bulgarians even when written in the Latin alphabet. Cyrillic, however, would give much favourable results.

- Sixty-seven percent of the respondents want to study this language in the future.

The authors of the survey believe that the results prove the hypothesis about the Interslavic language being sufficiently understandable without any prior training, notwithstanding its grammar based on cases and its Latin orthography.

### 5.4 Polish initiatives and experiences

Cooperation between institutions of higher education in Poland, the Czech Republic, Slovakia and other Slavic countries has been the source of numerous good experiences,
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casting a very positive light on the phenomenon of receptive multilingualism among Slavs. Many Polish scholars have used Polish or Interslavic in their communication with their contacts abroad, without any trouble in their mutual understanding. This cooperation has borne fruit in the form of Poles participating in numerous Czech and Slovak conferences and classes within the framework of the Erasmus program. During these occasions, everyone spoke his own language. This worked better than English, which not everybody was able to speak fluently. Other positive experiences include a field trip by a guest from Ostrava, editorial cooperation and co-authorship of many scientific works with Slovak scholars from Banská Bystrica, Nitra, etc. These contacts are continuously being maintained and developed via the internet.

During the first half of 2017, a poll has been conducted among 250 pedagogy students of the University of Rzeszów regarding their knowledge about the Interslavic language and the necessity of teaching it. A question about the need for implementing Interslavic was answered positively by most respondents. What they lacked, however, was broader knowledge about it. The students were also asked about their contacts with other Slavic countries, and although the opinions were divided here, those who had had more frequent contacts expressed themselves very positively about their scientific, cultural, touristic and other experiences. The respondents recognise the need for promoting and learning Interslavic, which in itself is an excellent argument for further, broader research to confirm these conclusions.

Further empirical research about the subject has been carried out in 2018 among students of various disciplines, mostly among future teachers, tutors and pedagogues who are currently students at the University of Rzeszów. Later this year, the same research will be extended to other social groups, too. This time the respondents were enquired about their level of passive understanding of Interslavic, as well as their willingness to learn it. To a certain degree, the same research tools have been used as those applied in Vojtěch Merunka’s survey (http://slovane.org/cinnost/166-nstest). People were asked to fill in missing words in text fragments, taken from http://interslavic-language.info and http://steen.free.fr/interslavic/news_2006.html.

Besides, 250 students were asked for their opinion about the chances for the practical use of Interslavic. They were also enquired about the benefits of Interslavic for an educational system that is open to any citizen, its benefits in the field of culture and, by the same token, its benefits for the development of e-democracy among the citizens in Poland, Central and Eastern Europe and the European Union.

Although this research is still a work in progress, the preliminary results confirm the hypothesis that to the majority of respondents, simple written and spoken Interslavic texts are perfectly understandable without any prior learning. Most respondents in this survey were students of higher education, selected deliberately because of Vojtěch Merunka’s assertion (conclusion) that passive comprehension of Interslavic is dependent on one’s educational level, and therefore also on education itself. After all, these are the people who may become the leaders of the Interslavic language in their own environments, especially since they are the same future teachers, tutors and pedagogues among whom most research has been conducted.

These linguistically and educationally constructive experiences have been a major reason for participating in both CISLa conferences and the Days of Polish and Croatian culture in June 2017, and strengthen us in our belief that the Interslavic language deserves to be promoted, taught and used. Our participation in this enterprise has convinced us even more that Interslavic is a very accessible and understandable language
to everyone. The contacts that were established during this conference, and cooperation in the fields of science, education and culture between representatives from various countries (Czech Republic, Netherlands, Bulgaria, Poland, Russia, Serbia), all communicating in Interslavic, gain more and more supporters and have proven increasingly beneficial to our European initiatives.

6 The issue of computer translation

The Slavic languages are examples of fusional (or inflected) languages. Languages of this type do not rely on the position of words for expressing grammatical categories. Instead, most information about the grammatical category of a word and its role in the sentence is contained in endings (declension and conjugation), and as a result, word order tends to be rather flexible. Other examples of fusional languages are Indo-European languages like Sanskrit, many of the modern Indo-Aryan languages, Greek (both classical and modern), Latin, Lithuanian, Latvian, Albanian and Icelandic. Another notable group of fusional languages are the Semitic languages (Hebrew, Arabic, Aramaic, etc.). Besides, the same type of structure can also be observed in agglutinating languages like Japanese, the Uralic languages (Finnish, Estonian, Hungarian, etc.) and the Turkic languages. Some degree of fusion can be found in many other languages throughout the world.

English, on the other hand, is an example of an analytic language, i.e., a language with a low morpheme-per-word ratio. Whether a word is a noun, adjective, verb, subject, object or something else is determined almost entirely by its position within the sentence. Because English has very few declension and conjugation suffixes, a fixed word order is indispensable as a means to recognise grammatical categories.

This relative simplicity of English is the basis of the Google Translate algorithm, which is based on simple search and replacement of the longest sequences of words (Google's Neural Machine Translation System, 2016; Sutskever et al., 2014). The Google database has a very huge number of parallel texts, many of which originating from institutions of European Union:

- If we want to translate something from one language to another, the algorithm searches if the whole sentence has already been translated, and
- if not, it searches for the longest fragments and then glues them together.
- Finally, even if it does not find any fragment, it looks for a transitive path and mostly finds the translation way through English.

It is obvious that this algorithm gives bad results in translating the fusional languages of Central and Eastern Europe, because these languages have free word order, and in addition, there are not enough parallel texts in the Google database. This is the cause of unusable, bizarre and ridiculous translations that have been made through English.

Interslavic, like all other Slavic languages, is a fusional language. Thus, it operates with words that contain unambiguous grammatical information, and a fixed position within a sentence is not needed to express its precise meaning. Because word order is basically free, it can be manipulated for expressing the finer details of communication.

Of course, this does not mean that Interslavic words can be mixed in any haphazard way. For example, if adjectives belong to a specific noun, they should be positioned either before or immediately after the corresponding noun, and other elements of the
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A sentence cannot intervene between them. Metaphorically, an Interslavic sentence is like a branched tree, whose branches represent particular sentence components. Within branches word order may be flexible, but elements within each branch must not be mixed with elements of another branch. From a theoretical perspective, an Interslavic sentence is a multidimensional oriented graph rather than a linear sequence of words (see the examples in Figures 3 and 4).

**Figure 3** The sentence linearised by the S-V-O order (see online version for colours)

![Sentence diagram](image1)

**Figure 4** The same sentence linearised by a different word order (see online version for colours)

![Sentence diagram](image2)

The syntactic tree of this new sentence is the same as in the previous example. The only difference is in the order of branches, but this cannot easily be expressed in English.

However, it is not possible to mix everything in any order, because words cannot be mixed across their sub-trees (e.g., subgraphs). Figure 5 follows an example of an incorrect sentence, in which words have been incorrectly mixed among multiple branches (making it somehow resemble the chaotic language of master Yoda from Star Wars).
6.1 Ontology-based language model

Our approach to language modelling is based on the use of the ontological model of the world. The usual linguistic approach is based on Chomsky’s conception of language as a tree structure. This is a concept that suits English and similar languages very well. However, this model is totally unsuitable for inflectional languages like the Slavic languages, Latin and Greek, among many others. Our basic principle is the assertion that human language is a linearised form of a more general multi-dimensional reflection of the real world. This is due to the simple fact, that human speech is sound – one linear channel of transmitting information. Therefore, we need to move the language-language translation process from the level of linear sequences of words to the more abstract level of multi-dimensional graphs. Our idea is shown in Figure 6.
6.2 Language model of translation

Our approach lies in the fact that the ontological model can fully cover both languages (source and destination). This follows from its definition (a definition of our ontological model). Furthermore, given that the ontological model is a general graph, we only need to perform the initial de-linearisation, subsequent graph transformation (as described in yEd, for example) and the final linearisation. In addition, if we have an intermediate reference language, we do not need to build \( N \times (N - 1) \) translators among \( N \) languages but only \( 2N \) translators. In the particular case of the Slavic languages, Interslavic is perfectly suitable to fulfil this role as a pivot language.

We postulate that Interslavic is a very useful intermediary instrument for the translation between various Slavic languages. Therefore, it is necessary to establish a correct model of the language for translation purposes. In our case, this means creating three formal models: a model of the source language, a reference model, and a model of the target language. The reference model is de facto an ontological model of the real world around of us, as seen in general. In the Slavic world, the Interslavic language can be used as a common standard of this reference model for translation between all Slavic languages.

Unlike more conventional approaches in linguistics, we do not use the standard language model of a linear sequence of words. The author of the standard model is the very famous contemporary linguist Chomsky (2002), but his scheme is fit for context-free languages based on linear sequences of words. Typical examples of such languages are programming languages. Human languages are much more complex, however, in the case of human languages based on a fixed order of words, where the position in the sentence gives semantic information, this original theory is also applicable. On the other hand, as Zabrocki (2016) wrote, classical languages such as Greek, Latin and Sanskrit, as well as the Slavic languages almost do not use the order of the word in the sentence to determine the grammatical category, because they have a rich apparatus of various grammatical prefixes and suffixes. That is why we propose a different language model instead, based on a conceptual model of linguistic ontology expressed by a directed graph (Davis and Weyuker, 1983).

Our new language model expresses the content of a sentence independently of word order, because it is based on a form of a multidimensional graph. Of course, it remains possible to linearise this graph into a sequence of words. We will describe this later in the text, but first, we will describe a language-independent language model. The general ontological idea of our model is shown in Figure 7. We selected the UML standard (ISO/IEC 19501, 2005). As Guizzardi and others say, there is also a growing interest in the use of UML standard as a formal instrument to represent various ontologies; therefore this software-engineering standard was the most logical solution (Guizzardi et al., 2004).

All elements of this model are derived from the root element of our metamodel, \( Universalia \), which represents anything. There are two major classes derived from it:

- **Fact**, which represents the facts in the world around us, such as persons, things, seeing, running, etc.
- **Attribute**, which represents the properties of these facts.
Next, the class Fact has two subclasses: Element, which represents real or abstract objects from the real world, like for example cars, persons, ideas and so on, and Relationship, which represents the relations between Elements.

Figure 7  UML metamodel of our language translation model

The process of translation is explained in Figure 6. If the source language is expressed as a graph, we are looking for a subgraph that corresponds to the transformation rules in order to build step by step a graph model of the target language. Concretely, if we find such a subgraph in the source model, we replace it with another subgraph following the translation rule. Subsequently, we keep repeating this approach until there is no rule left to apply. Finally, we obtain a new graph that represents our target language model, which is then linearised to the text output. These graph transformations are more general than transformations of linear sequences to other linear sequences. We can demonstrate our method by using a simple sentence as an example.

A model of a real sentence is shown in Figure 8. The sentence is annotated in English, and the individual elements of the model are expressed in their base forms. For example, nouns and adjectives are shown as nominatives, but will be declined into their proper cases during the linearisation process.

Figure 8  Model of the same sentence transformed into the Interslavic language with one example of more possible output linearisations

The basic principle of language interpretation and translation is very simple. It is based on graph transformations. In the source model, expressed as a graph, we are looking for a subgraph that corresponds to the transformation rule. If we find such a subgraph in the
source model, we replace it with another subgraph that follows this rule. Step by step, we apply all transformation rules to the source model sequentially. The whole process will end once there is no rule left to apply. At last, we obtain a new graph that represents our target model. The graph transformations are more general than transformations of linear sequences to other linear sequences. We can demonstrate our method by means of the same simple sentence:

*Our best player is playing tennis at the Olympics today*

A model of this sentence in Interslavic is shown in Figure 8. The same sentence translated to Russian is shown in Figure 9. Using linear approach to translation of these languages would generate unusable results. But when we build a word order independent graph (e.g., Figure 8), we can then recognise particular sub-graphs, which must be transformed into other structures, because simple linear replacement word-sequence-by-word-sequence is not possible. In our example, they are three sub-graphs:

1. ‘our best’, where a specific Russian idiom expressing ‘the best’ is used
2. ‘to play tennis’, where Russian has an additional preposition to a noun
3. ‘Olympics’, which is translated into multiple Russian words.

The transaction result can then be as follows:

Interslavic:

*Naš najlučší igrač igraje dnes na Olimpijadě tenis*

The same in Russian (transliterated from the Cyrillic):

*Samyy luchshiy nash igrok segodnya igraet v tenis na olimpijskih igrah*

Of course, the same applies to translation between other Slavic languages, too. Moreover, even very close languages, such as Croatian and Serbian, or Czech and Slovak, do not only differ in pronunciation and orthography, but can also put almost the same words in a different order, and use different prepositions and different cases in the same sentences.

*Figure 9*  Model of the same sentence transformed into the Russian language with one example of more possible output linearisations (in this example, an English-based transcription of Russian Cyrillic is used)
6.3 Human language inaccuracy and false friends

One feature of English that significantly complicates its use as a pivot language in automatic translation is the large amount of various homonyms with different meanings in different situations. The correct translation must often be deduced from a wider context, which in computer translation is very hard to accomplish. This is especially true when English serves as an intermediate language for translation between another languages.

The Slavic languages have a much lower degree of homonyma than English. However, the relatively high level of mutual intelligibility between the Slavic languages brings about another, similar problem: that people take it for granted that an identical or similar word also has the same meaning. Usually this is indeed the case, but sometimes one word can have different meanings in different Slavic languages, either because the meaning of a word has drifted into various directions, or by sheer coincidence. This type of words is known as ‘false friends’. In most situations these similarities will not cause any problems. For example, Polish piec ‘stove’ is not likely to be confused with Russian pet ‘to sing’. In some cases, however, misunderstandings are lurking, for example godina, which means ‘year’ in South Slavic and ‘hour’ in West Slavic.

This is why our Interslavic translation approach has included a corrective tool for resolving problems in situations where the same word has different meanings in different Slavic languages. It is a table-based document of shared word forms with different meanings between languages. If the translation algorithm (and also our approach for building the Interslavic dictionary) finds a word that is in the ‘false friends table’, this word should be replaced by a synonym. The original author of this free document is Daniel Bunčić who made it under GNU Free Documentation License (GNU, Wikimedia).

We may add, especially for non-Slavic readers, that the Slavic languages are not the only group with ‘false friends’. They occur in all language families. For comparison, one might check any dictionary for the meanings of the English word gift and the German word Gift, or the Arabic word lekhem and Hebrew word lekhem.

7 Interslavic, e-democracy and education

Active participation of European citizens in e-democracy is hard to achieve when a substantial part of them do not know the language used in the process and are unable to spend time and effort on learning it. The Interslavic language, due to its high level of passive intelligibility, can solve this problem. Our research proved that Slavs of any nationality can understand it reasonably well without any prior preparation, and one might expect that some minimal preparation could enhance its passive intelligibility even further. In this context it should be noted that for Slavs, learning Interslavic is not a matter of learning a new language, but merely of learning how to recognise correspondences.

Creating training materials and special software localisation into Interslavic would not only reduce translation costs (instead of many just one version) but would also greatly support the knowledge transfer across countries of the Central and Eastern Europe. Thus, entire groups in Central and Eastern Europe can be prevented from being marginalised and, consequently, excluded from public life. That is why Interslavic is definitely worth considering as a good social and educational alternative when it comes to levelling the
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chances of participation in e-democracy by Central and Eastern Europeans who do not know English.

In addition, Interslavic can also play a positive role as an intermediary language in the process of automated translation between various Slavic languages. In situations when it is impossible to have documents translated into many different languages, much of the translation work can be computerised. This would significantly diminish the burden currently carried by translators.

These considerations should be a stimulus for broader research on the willingness of citizens in different countries to use the Interslavic language, as well as its potential role in cultural development and the rise of cyberdemocracy. Of particular importance is also research on the possibilities of implementing Interslavic in education. In the search for reciprocal connections between language, education and e-democracy, the theoretical model at Figure 10 can be proposed. This triangle can serve as a basis for empirical research in the various countries where the project is initiated. It requires further argumentation and detail, as it displays the mutual relationship between three complex processes that simultaneously constitute the basic values of the information society.

Figure 10  Modern civil society development triangle [authors]

Civic activity by means of information technology requires knowledge of the language used by the latter, and therefore e-democracy depends on language. However, language usage is also dependent on e-democracy, because that is where leaders and activists engage and where they can create, propose and advertise a language that both supports e-democracy and can work in the daily life of Slavic Europe.

There is a close connection between educational and scientific activity, information technology and knowledge of the language used to support e-democracy. The correlation between a higher level of education and passive comprehension of Interslavic has been aptly demonstrated by Vojtěch Merunka’s research (Kocór et al., 2017). Therefore, the role of education in preparing people for the use of Interslavic in e-democracy can hardly be underestimated. Moreover, Interslavic can play a role of equal significance in the education of citizens of Slavic countries who do not know English, regarding their development in the fields of education, research, science and the international exchange of students, teachers and scholars.

In other words, the interdependence between language and education works in both directions, and the same can also be said between education that is open to e-democracy and e-democracy that is open to all citizens knowing a common language. Language supports education, education supports e-democracy, and the other way round: e-democracy is beneficial to open education and the rise of an understandable language, depending on the conditions and needs. After all, what can e-democracy do for e-democracy, what can language do for language, and what can education do for education, if these three elements do not work together, supporting each other
and encouraging each other’s constant improvement? This thought deserves discussion on a global level, because it might reveal an authentic need of the *homo interneticus* (Walat, 2016), who is still insufficiently adapted to the conditions imposed on him by media and politics.

In view of the above, M. Kocór voiced the idea of a common research project at the CISLa 2017 and 2018 conferences in Staré Město. Based on the new arguments and considerations mentioned in this paper, this research could be expanded with the relation between the Interslavic language, e-democracy and participation at various levels of education in the Slavic countries. Especially in those Slavic countries where knowledge of English is low, research on the openness of citizens towards a more comprehensible Slavic language in the context of improving e-democracy and the need for corresponding education is warranted. In this context, it is crucial to investigate what the needs and experiences of citizens are when it comes to using and comprehending the Interslavic language, and what they expect from education in terms of language, media and informatics.

The expected outcome of this outlined project is that educational models will be proposed and introduced at different education levels, both directed at a common language for the Slavic countries and the e-democratic development of their citizens. Subsequently, these models will require evaluation, and proposals can be made for improvement. After all, e-democracy should not merely concentrate on motivating people and forming an understandable language, but also on a critical, creative and responsive attitude from those engaged in the process.

Of course, implementation of these suggestions requires not only citizens’ participation but also actions to be taken on behalf of the governments. The first step we are trying to take in this direction is acquiring an ISO 639-3 code and an IETF language tag for the Interslavic language as a means to open the way for e-government software in Slavic countries. Of course, not all inhabitants will have to learn Interslavic; they will merely benefit from its advantages, namely that it is sufficiently comprehensible without learning. Only those who will need Interslavic actively, such as translators of official EU documents, tutors, trainers, etc., will have to learn it. For this reason, we have been running the peer-reviewed journal SLOVJANI.info, which is indexed by the CEEOL (Central and Eastern European Online Library) and appear both in print and online. CEEOL is a leading provider of academic e-journals and e-books in the field of humanities and social sciences from and about Central and Eastern Europe. It is based in Frankfurt am Main in Germany and offers services to subscribing institutions and their patrons to make access to its content as comfortable as possible. Furthermore, it allows publishers to reach new audiences and promote the scientific achievements of the Eastern European community to a broader readership. In addition, we have published several Interslavic books and training materials with an adequately registered ISBN codes.

The second step we are planning is to organise an international project and get financial support for open-access software for automatic translation of arbitrary texts between national languages and Interslavic.

8 Conclusion

Although the Slavic countries of Central and Eastern Europe constitute roughly one third of the entire continent, their populations are under heavy pressure in a world in
which borders gradually lose their meaning and traditional values need re-evaluation. Democracy and civil societies are still a relatively young phenomenon in the region, with political instability constantly lurking behind the corner. Under such conditions, building, developing and protecting e-democracy is paramount in helping these societies reach socio-political maturity and preventing them from missing the boat.

A major factor that stands in the way of full participation is language. Knowledge of English and other foreign languages is at a persistently low level in the region, resulting in the situation that many people are effectively cut off from the world outside their own countries. Research demonstrates that passive understanding of other Slavic languages (receptive multilingualism) can play a positive role, but on a rather limited scale. We have substantiated reasons to believe that a zonal constructed language, namely Interslavic, can be the solution to this problem. Because Interslavic is based exclusively on elements that exist in all or most Slavic languages, it is well understood by Slavs of any nationality: they tend to perceive it as an ancient or remote dialect of their own native language, or as an unidentified neighbouring language closely related to their own.

The people-friendly Interslavic language – the collaborative effort of different people involved in the improvement of information systems for civilians who are not necessarily ICT experts with good knowledge of English – can help us to overcome the technophobia that complicates the deployment of e-democracy applications in practice, while simultaneously saving costs, because instead of creating 15 different Slavic language versions, we can need only one version. Because of its structure, the Interslavic language is also very suitable as an intermediary (‘pivot’) language in computer translation between Slavic languages. As such, it can significantly diminish the work for translators and allow for a much larger volume of documents to be translated.

Our research performed under the populations of various countries on their ability to comprehend Interslavic, allows us to draw far-reaching conclusions regarding its usefulness and the possibility for people to use it easily and effectively without much preparation. Our research also shows a correlation between the level of one’s education and one’s ability to understand and use Interslavic. In other words, its deployment in e-democracy as well as other fields can be greatly supported by proper education. As we have attempted to demonstrate, e-democracy, language and education are inseparable parts of the same triangle, each of them being conditioned by the other two. This interdependence definitely merits further discussion and research.

Apart from e-democracy applications, other possibilities for its use as a common language for Slavs are in business, international transport (information texts and labels in trains, buses, planes), marketing (product manuals and descriptions), sport, tourism (information leaflets, news, brochures…) and social events. For example, Interslavic could serve as a practical auxiliary language for multinational Slavic groups in touristic destinations, historical and cultural places and exhibitions, companies and religious communities. It can also play a positive role in science, research and education. Based on our experiences described above, excellent results can be achieved through scientific and didactical travels, common projects, grants, exchange of students and scholars, and other forms of international cooperation.

In view of all the above, we believe the practical implementation of Interslavic on a broader scale in economy, trade, tourism and culture, but especially also in e-democracy, at various levels of education and in computer translation deserves support in order to improve the quality of life and to strengthen the awareness of the common European identity in the region of Central and Eastern Europe and beyond.
References


CISLa (2017) Rezultaty i memorandum iz prvoj naučnoj konferencije o međuslovljanskom jeziku (English: Results and memorandum from the first scientific conference on the Interslavic language, CISLa 2017), http://cisla.slavic-union.org/


The Interslavic language as a tool for supporting e-democracy


MICReLa Research Group (2016) *Mutual Intelligibility of Closely Related Languages, the Language Game*, http://www.let.rug.nl/gooskens/project/


Websites
SLOVJANI.info, on-line and printed expert peer-reviewed Interslavic journal, p-ISSN 2570-7108, e-ISSN 2570-7116, http://slovjani.info