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LANGUAGE POLICY AND LANGUAGE BELIEFS IN SARDINIA: A CASE STUDY^[*]

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Abstract: The present dissertation investigates the Sardinian language policy, focusing on the language beliefs and attitudes of a specific educational institution's teaching staff. Language policy is considered to be composed of language practices, language beliefs and language management (Spolsky, 2004), and speakers' beliefs and attitudes are thought to be capable of conditioning the success of language management provisions (Baker, 1992; Spolsky, 2009). The language planning initiatives carried out by the Sardinian authorities have been trying to promote the use of Sardinian in various public settings, especially in schools, and therefore, teachers' language ideologies and attitudes might be particularly important for their implementation. The data – obtained from questionnaires and interviews – show that participants see Sardinian positively at a general level, because that language is part of their identity and cultural heritage. Furthermore, teachers acknowledge the importance of a plurilingual education that could include the local language. However, many teachers perceive that Sardinian lacks instrumental value and, being a minority language, it can hardly cover certain public functions without affecting individual rights. Consequently, a deep assimilation of Sardinian in the school context, especially as a medium of instruction, is not unthinkable, but it will probably be a rather controversial process.

Keywords: language policy, language beliefs, language attitudes, school context, Sardinian

1. Introduction

The present research is a case study, conducted in a Sardinian educational institution called 'Istituto Lugore' (pseudonym), on the beliefs and attitudes of a group of secondary school teachers towards the Sardinian language and towards the institutional language policies carried out in Sardinia, with a particular attention to the ones concerning the school setting.

In Sardinia, a process of language shift is taking place, since the Sardinian language has been largely replaced by Italian in most public and private contexts (Schjerve, 2017: 40). The Regional authorities have been trying to reverse such a process through explicit and official language policies aimed at improving the prestige of the minority language, enhancing its presence in various societal settings and promoting its use in schools within the curricular hours and as a medium of instruction. In this research though, the investigation of language policy is not restricted to the description of institutional rules and laws, but it also

[*] Passed as a successful MSc dissertation at the University of Edinburgh in 2017–2018. Previously unpublished. [Editor's note]

involves a study on the language beliefs and attitudes of a specific group of speakers. Indeed, language practices, language beliefs or ideologies, and language management are considered as fundamental elements of any language policy (Spolsky, 2004: 5). Language management may be in line or at odds with the language ideologies of a speech community (Spolsky, 2004: 14), and therefore, a case study on the beliefs and attitudes of a group of speakers could give indications on the degree of consonance or discordance between those two levels of language policy. Such indications are particularly important since positive attitudes towards official language policies, especially the ones that deal with endangered languages, have been often regarded as a relevant aspect for their success (Baker, 1992: 9; Garret, 2010: 10–11). Since the Sardinian official policies have often focused on the role of the local language in schools, this study is mainly concerned with language education policies and with the attitudes of potential implementers, i.e. secondary school teachers, towards the adoption of Sardinian in the educational context. Nevertheless, opinions regarding the use of the minority language in other domains were also elicited, in order to explore preliminarily participants' attitudes towards some of the other main points of the Regional institutional policies, and because it is plausible that teachers' beliefs about Sardinian and its perceived adequate uses are connected with their commitment to the introduction of the minority language into the school setting. The results of this research show that participants have contrasting beliefs and attitudes towards Sardinian and towards proposals that are intended to enhance its presence in societal and educational contexts. Teachers view the local language as an important part of Sardinians' identity and culture, and they are positively inclined towards a plurilingual education that involves the local language. Nevertheless, Sardinian is perceived by participants as a minority language with very little instrumental value. Moreover, using the local language in public settings, including schools – especially as a medium of instruction – is seen as problematic because it may create inequalities between those who can speak Sardinian and those who cannot.

In the next section, the Sardinian sociolinguistic situation and official language policies will be illustrated. The theoretical framework of the research will be presented in section 3. In section 4, the choice of participants and the methodologies used will be clarified. Section 5, instead, will be dedicated to the presentation of the results and relevant discussion. Since the results were obtained mainly from interviews extracts, it has been chosen not to separate the presentation of those extracts from the discussion on why they were considered as particularly significant. In the final section, the study will be summarised, in order to draw its conclusions and call for future investigations that can fill the limitations of this research.

2. Sociolinguistic context and institutional language policies in Sardinia

Sardinia is an island situated in the Western Mediterranean; politically, it is an Autonomous Region of the Republic of Italy. Although Italian is the official language of all the Regions of the Republic (Parlamento Italiano, 1999), in Sardinia, a number of minority languages are also spoken: the Sardinian language, the Catalan variety of the city of Alghero, the Ligurian dialect called Tabarchino, and the Italian-Corsican dialects named Sassarese and Gallurese (Spiga, 2007: 65). Sardinian is a Romance language and it is by far the largest of the island's minority languages; it can be divided into several local dialects, whose number varies based

on the classification criteria that linguists use (Molinu & Floricic, 2017: 27–28). For the purposes of this study, it suffices to say that Logudorese and Campidanese are the two main macro-varieties, which are spoken respectively in the northern and in the southern half of the island (Blasco Ferrer, 1984: 195).

According to a sociolinguistic research commissioned by the Sardinian Regional Administration, 68.4% of people who live in Sardinia have an active competence in one of the local varieties that have just been mentioned (Oppo, 2007: 7). However, the UNESCO Atlas of the World's Languages in Danger (2010) defines Sardinian as “definitely endangered”. A language is considered as endangered when it is experiencing a significant reduction in the number of speakers, and when its domains of use are linked to low-prestige contexts and are becoming increasingly limited (Fishman, 1991: 81). Few decades ago, Schjerve (1990: 208; 1993: 278) noticed that, in Sardinia, Italian was becoming predominant in an increasing number of domains and even as the language of primary socialisation in family. The Italian-Sardinian bilingualism was moving from a diglossic condition to a situation of language shift (Schjerve, 1993: 171–172). More recently, Schjerve (2017: 40) highlighted that Sardinian is almost totally excluded from public and official domains, as well as from schools. Even within the families, the vitality of Sardinian is quite limited, and therefore, the intergenerational transmission of the minority language is at risk (Schjerve, 2017: 40).

Spolsky (2004: 14) explained that the linguistic practices of a speech community might be challenged by language management provisions carried out at institutional levels. Indeed, in the last twenty-one years, the Autonomous Region of Sardinia has undertaken multiple language planning initiatives in order to reverse the language shift that has been taking place in the island. The first significant intervention of the Autonomous Region of Sardinia in favour of its local varieties occurred in 1997, with the Regional Law n. 26: Sardinian was declared a language with “same dignity as Italian” (Regione Autonoma de Sardigna, 1997; my translation), although this equality kept being denied by the reality of the Sardinian society (Angioni, 2000). In 1999, the Italian Parliament approved the Law n. 482, designed to protect some of the minority languages within the Italian jurisdiction, including Sardinian. This Law has accorded the possibility of using the minority languages, and of recruiting personnel able to offer services in those languages, to all public offices, except for police stations (Parlamento Italiano, 1999). Moreover, it has allowed to employ the minority languages in nursery, primary and secondary schools of the territories in which those languages are historically spoken; however, the decision on whether and how using the minority language has been left to the individual educational institutions (Parlamento Italiano, 1999).

The National Law n. 482 had mainly status planning goals, i.e. it aimed at increasing the use of certain languages in various societal contexts (Kaplan & Baldauf, 2003: 202). Nevertheless, measures that try to alter the environment in which a language is used lead almost inevitably to attempts to modify and codify the internal structures of that language, namely to corpus planning activities (Kaplan & Baldauf, 1997: 28). Indeed, in 2001, a proposal of standardisation for Sardinian, called *Limba Sarda Unificada*, was produced by the Regional Administration, but it was widely rejected because of its proximity exclusively with Logudorese (Tufi, 2013). In 2006, the Regional Administration delivered a second proposal of standardisation, named *Limba Sarda Comuna (LSC)*, which tried to include more elements of Campidanese. In the presentation text, it was specified that this standard variety would have to be experimented by the Regional Administration in its official documents.

However, it was also intended to be a reference point for the gradual creation of a common Sardinian language (Regione Autonoma de Sardigna, 2006). Contrasting reactions have been triggered by this proposal. For example, Corongiu (2006) claimed that the LSC is a valid solution to the problem of standardisation, since it mediates among the different varieties of Sardinian. On the other hand, Calaresu (2008) emphasised that, before tackling the issue of standardisation, which might not even be helpful for the revitalisation of the language, the Regional authority should have investigated the ideologies and beliefs of the community about such an issue (Calaresu, 2008).

A more recent and comprehensive strategy on the part of the Regional Administration was the three-year plan for the enhancement of the Sardinian language, released in 2011. Once again, the main objective of this strategy was to increase the domains of use of the minority language in the society. The use of Sardinian in cultural activities, in the mass media and in religious settings was financially supported (Regione Autonoma de Sardigna, 2011: 34, 41, 63). As far as language education planning is concerned, the document explicitly declared that the introduction of the minority language into schools should be a gradual process, not forced by top-down impositions. Nevertheless, the Regional authority encouraged the use of Sardinian at school, even though the CLIL methodology (Regione Autonoma de Sardigna, 2011: 54–55), which is an acronym for Content and Language Integrated Learning and which is, as García (2009: 46) explained, another name to refer to the notion of bilingual education.

The latest piece of language management of the Autonomous Region of Sardinia is the Law n. 22, entered into force the 3rd of July 2018. First, the Law delegates corpus planning activities to a new entity, called ‘Sardinian language Board’, in charge of developing another proposal of linguistic standard and of defining its domains of application (Consiglio Regionale della Sardegna, 2018a). Moreover, the Law creates the possibility of obtaining certifications that attest the level of proficiency in Sardinian in compliance with the criteria of the Common European Framework of Reference for Languages (Consiglio Regionale della Sardegna, 2018a). This is clearly a prestige planning initiative, namely a provision aimed at improving the image of a language and promoting its intellectualisation (Kaplan & Baldauf, 2003: 222). As far as status planning measures are concerned instead, the Regional Administration becomes responsible for the implementation of the section of the National Law n. 482 regarding the presence, in public offices, of personnel able to deliver services in the minority language (Consiglio Regionale della Sardegna, 2018a). Finally, a good part of Law n. 22 is dedicated to issues related to the use of Sardinian at school. First, a ‘Committee for the Learning of Sardinian’ is instituted, which is in charge of giving general guidelines about the teaching of the minority language to all public educational institutions in Sardinia (Consiglio Regionale della Sardegna, 2018a). Despite that, each single scholastic institution keeps a certain degree of autonomy to decide the methods and timing of use of the local language. Even in accordance with the National Law n. 482, all schools are given the possibility to introduce, at an optional level, the Sardinian language as a subject within the curricular hours and as a medium of instruction of any subject of the curriculum (Consiglio Regionale della Sardegna, 2018a).

The relevance of this dissertation lies also in the fact that it is one of the first studies that takes account of this very recent piece of institutional language policy, and tries to investigate beliefs and attitudes of a group of future implementers towards its main contents. Indeed,

top-down language management efforts, in order to be successful, should take into consideration the language beliefs that are present at lower levels of the speech community (Spolsky, 2009: 7). Similarly, the language attitudes of those who are affected by official language policies are considered as a fundamental element in assessing the likely success of those policies (Baker, 1992: 9). Because of these reasons, in this research, the linguistic beliefs and attitudes of a particular group of speakers, i.e. secondary school teachers, were investigated. The research question, hence, wonders whether the language ideologies, beliefs, opinions and attitudes of the investigated teachers are likely to strengthen or weaken the Sardinian institutional policies, in particular the ones that deal with the school context.

3. Theoretical background

3.1 *Language policy, beliefs and attitudes*

Throughout the last decades, language policy (LP) has been studied from different, albeit related, perspectives, which Baldauf (2012) summarised in four main approaches: the classical approach, the language management theory, the domain approach and the critical approach. According to Spolsky (2004: 40–42), the study of LP is most efficiently conducted within the frame of sociolinguistic domains, for instance families, schools, workplaces, or even bigger ones like regional or national governments. Within such a domain approach, Spolsky, alongside other scholars, has proposed that language policy should be understood as a concept composed of multiple dimensions. At first, Spolsky & Shohamy (2000: 2) noticed that it was important to differentiate the language practices of a specific community of speakers, their ideas and beliefs about languages and the explicit language policies that try to impact on those practices and beliefs. Developing from this, Spolsky (2004, 2009) included the notions of practices, beliefs and management as essential components of any language policy:

“a useful first step is to distinguish between the three components of the language policy of a speech community: its language practices – the habitual pattern of selecting among the varieties that make up its linguistic repertoire; its language beliefs or ideology -- the beliefs about language and language use; and any specific efforts to modify or influence that practice by any kind of language intervention, planning or management” (Spolsky, 2004: 5)

Analogously, Shohamy (2006: 54) used the term “de facto language policies” to refer to the actual uses of a language, which Bonacina (2010: 11) then labelled as “practiced language policies”. Shohamy (2006: 54–55) talked of language policies also in terms of ideologies and perceptions, to which Bonacina-Pugh (2012: 215) referred as “perceived language policy”. Finally, Shohamy (2006: 54) proposed the notion of “declared policies” to indicate the explicit, official statements and rules about languages. Less recently, Ball (1993) described LPs as texts and discourses. Language policies are textual documents that try to intervene in the concrete linguistic practices. At the same time, they involve a series of presumptions and ideologies about what it is appropriate to do with certain language varieties in particular contexts (Ball, 1993). In other words, a speech community bestows values on its language varieties and their uses, and this set of values constitutes the language beliefs or ideology of

that community (Spolsky, 2004: 14). It is worth specifying that speakers' language beliefs may not be aligned with top-down language planning provisions (Spolsky, 2004: 14); nonetheless, the success of "centralized language management" might be affected by grass-roots language ideologies (Spolsky, 2009: 7).

Drawing on Spolsky's theoretical framework, Lau & Lin (2017) investigated the opinions and beliefs of 38 international students of a Taiwanese university towards a Mandarin-English bilingual educational policy. The researchers were able to find out that some factors, such as the perception of the increasing economic power of Mandarin Chinese, are slowing down the process of adoption of English as medium of instruction (Lau & Lin, 2017). Kulyk (2011), in his study about the use of Ukrainian and Russian in Ukraine, put in evidence that beliefs about the status and the corpus of a language interact with each other and influence the perception of appropriateness of that language in certain contexts. Indeed, the institutional attempts of raising the status of Ukrainian seem to be partially obstructed by the perceived inferiority of its corpus in comparison to Russian (Kulyk, 2011).

The notion of language beliefs has been very often associated to the concept of language attitudes (Baker, 1992; Garret, 2010). Language beliefs, in effect, and similarly also language opinions, are generally considered as the cognitive element of linguistic attitudes (Baker, 1992: 12–14), although, according to Garret (2010: 31), they cannot be completely separated from the affective component. In any case, a language attitude can be defined as a stance, a position towards certain language varieties and uses and even towards certain language policies (Garret, 2010: 20). The language attitudes of people who are affected by a language policy can be a key factor for the success or failure of that policy (Baker, 1992:9). In particular, speakers' positive attitudes towards endangered languages are considered as essential for a successful implementation of policies aiming at the revitalisation of those languages (Baker, 1992: 21; Garret, 2010: 10–11). In this respect, Bell (2013) claimed that the likely positive or negative disposition of the communities towards certain linguistic uses should be taken into account in planning efforts for the revitalisation of Aboriginal languages in Australia. In regard to the governmental language policies carried out in Wales instead, May (2000) investigated trainee teachers' attitudes towards the Welsh language. The results of that study showed that the minority language received very positive attitudes at a general level, whereas, when participants were asked about the use of Welsh for specific purposes, their opinions were much more contrasting and controversial.

3.2 Language education policy

Language education policy (LEP) is concerned with the acquisition of certain languages by the members of a community and with the development of strategies connected to this goal (Kaplan & Baldauf, 2003: 217). LEP generally looks at the teaching of certain languages, such as national, heritage or foreign languages, in settings like universities and schools (Shohamy, 2006: 76). Since schooling is generally obligatory, according to Shohamy (2006: 90), LEP is one of the most efficient mechanisms that institutions use to create linguistic practices, or de facto policies, suited to their ideologies.

Research has often focused on the linguistic attitudes and beliefs of influential participants of language education policies, such as teachers, students and parents (Spolsky, 2009:

91–94). For example, Griva & Iliadou (2011) investigated students' and teachers' beliefs about the language education policy in Greece, which has been promoting the teaching of two foreign languages in primary and secondary schools. Both students and teachers expressed very positive attitudes towards such a plurilingual approach to education. In particular, teachers emphasised that the knowledge of different national languages provides students with the necessary tools to cross cultural boundaries and to be prepared for a variety of occupational opportunities (Griva & Iliadou, 2011). As far as minority languages are concerned instead, Lee & Oxelson (2006) highlighted that numerous teachers in California showed unresponsive or even negative attitudes towards the maintenance of students' heritage languages, which are often perceived – in opposition to English – just as cultural artefacts rather than necessary instruments for students' future. By contrast, O'Hanlon (2015) put in evidence that the relative success of the Celtic-medium instruction policy in Wales is due to positive ideologies of parents and students towards that kind of education. Welsh as medium of instruction is perceived as a way to renew the cultural heritage of Wales and to take advantage of the benefits of a bilingual education. In addition, parents believe that a proper knowledge of Welsh on the part of their children will enhance their career opportunities in the future (O'Hanlon, 2015).

4. Methodology

4.1 Participants

The present research is a case study aimed at investigating the linguistic beliefs and attitudes of the teaching staff of a Sardinian educational institution. Such a choice of participants has been made because teachers' positions and ideologies towards Sardinian and its appropriate uses may play an important role in the success of the institutional language policies, in particular the ones that aim at introducing the minority language into schools. This is especially true considering that the decision on when and how to implement the language education policies concerning Sardinian is, at least to a certain extent, left to the autonomy of the single schools (Parlamento Italiano, 1999; Consiglio Regionale della Sardegna, 2018a).

The educational institution that has been investigated is called 'Istituto Lugore'; it comprises public secondary schools in four different villages, which are situated in the middle-west coast of Sardinia and which belong to the Oristano's province. Twenty-two teachers of these secondary schools participated in the study; given that participation was clearly on a voluntary basis, not every single member of the teaching staff agreed to collaborate, although the majority did. Since the only criterion for participation was to be member of the secondary schools' teaching staff of the selected institution, the teachers who participated in the study considerably vary in terms of age, subject taught, area of origin, and degree of competence in Sardinian (Appendix A).

4.2 Data collection

Two data collection methods were used in this study, namely written questionnaires and individual semi-structured interviews. More specifically, the questionnaire (Appendix B),

sent to the participants by e-mail, was composed of a series of statements – mainly inspired by May (2000) and Valdes (2007) – with which respondents had to express their degree of agreement on a five-level Likert scale, going from ‘*strongly disagree*’ to ‘*strongly agree*’. The survey was divided into three parts: the first one concerned the attitudes exclusively towards the Sardinian language; the second part was focused on the relation of Sardinian with Italian and other international languages; the third part dealt with the much-debated issue of Sardinian standardisation. Following Baker’s recommendation (1992: 79), attitudes toward a single language have been considered as conceptually distinguished from attitudes toward bilingualism, namely the disposition toward the possibility of co-existence of two or more languages. As Baker (1992: 16) illustrated moreover, attitudes have various degrees of generality or specificity; hence, throughout the survey, a mix of general and specific statements was present. General statements, like ‘*I like hearing the Sardinian language*’, were intended to elicit beliefs about the Sardinian language itself; specific statements, instead, were inserted to gather information on the participants’ attitudes towards the use of Sardinian in particular domains, such as family, mass media, public offices and schools. The questionnaires, therefore, were useful to assess the proportion of agreement or disagreement of participants with certain possible uses of the minority language.

However, in order to explore more thoroughly teachers’ language ideologies and beliefs, the most common method in qualitative research, i.e. individual interviews (Sandelowski, 2002; Nunkoosing, 2005; Lambert & Loiselle, 2008), was also adopted. The interviews conducted in this study (Appendix C) – which took place in one of the schools’ buildings after the administration of the survey – started with a question about the perceived general utility of Sardinian in the modern world. They continued with a question about learning both Sardinian and Italian in family and a question about the possibility of using the minority language in public offices. Then, a series of questions about various possible forms of introduction of Sardinian into schools were asked. Finally, the interviews tried to elicit opinions on the use of a standard variety in educational contexts. Under participants’ consent, the interviews were recorded and later transcribed for comparative reasons (ten Have, 1990). Indeed, the transcriptions of the various interviews have been deeply examined and compared, in order to find recurrent types of answers, which could elucidate – in a more elaborate and detailed way – the results found in the questionnaires, sometimes even partially contradicting them.

Data collection took place in June 2018. Both in the surveys and in the interviews, the questions were connected with the main points of the most recent language policies produced by the Autonomous Region of Sardinia. Even though Law n. 22 has been officially approved shortly after data collection, its text was being discussed in the Sardinian Regional Assembly since several weeks before. I was aware of this fact and, from the beginning of the study, I had access to the draft text of the Law (Consiglio Regionale della Sardegna, 2018b), whose main points and features, despite some modifications, have remained substantially unaltered in the final version. Thus, in structuring questionnaires and interviews, the main contents of that draft document were taken into consideration.

5. Results and Discussion

5.1 Symbolic vs. instrumental dimension of Sardinian

In the analysis of the general beliefs of participants about Sardinian, a strong dichotomy in the values attached to the minority language can be detected. On the one hand, the interviewed teachers seem to perceive Sardinian as an important part of the islanders' identity and as a way of keeping alive the traditional cultural heritage of the island. Such elements emerge clearly from the questionnaire statement *'It is important to preserve the Sardinian language because it is part of our identity and cultural heritage'*, with which 100% of the respondents agreed or strongly agreed. On the other hand, a pattern of responses given in the individual interviews seems to suggest that the perceived practical utility of Sardinian is quite lower than its symbolic value.

Participant: "Well, a utility [that Sardinian has] is certainly to hand down the tradition that exists in Sardinia... Thus, from a cultural and identity point of view, I think it is very important. I always have a little doubt about the daily use of Sardinian: because *we are in a globalised world, we are in a European community that is very large, so, in short, it will certainly have a very limited use*"¹ (27/06/2018; my emphasis).

Using the terminology provided by Gardner & Lambert (1972: 3), the motivation for learning Sardinian seems to be completely integrative, namely it is related to matters of identity and membership in a particular cultural community. By contrast, the instrumental orientation, which can be described as the willingness of knowing a language for utilitarian, practical advantages (Gardner & Lambert, 1972: 3), seems to be almost totally absent. Drawing on a different theoretical approach, a language can be thought of as having its own *mojo* (Joseph, 2014); it is possible to define *mojo* metaphorically as "a little bag of charms" (Joseph, 2014: 126), which gives a sort of power or quality to the language that holds it. Participants appear to perceive Sardinian as a language with a strong identity and heritage *mojo* (Joseph, 2014: 126–127): namely, speakers view the local language as a part of who they are and as having a special relation with the past. In many teachers' perception however, Sardinian is devoid of getting-on and modernity *mojo* (Joseph, 2014: 128): that is, the minority language does not help advance in life and it does not have links with the modern world. Such perceptions, as it will be possible to see, influence teachers' attitudes towards the use of the minority language in particular domains, such as schools.

5.2 Sardinian in public settings

A great part of the language management of the Sardinian Region has been focused on efforts to enhance the presence of the minority language in public, societal settings. In line with these efforts, a large majority of participants – 81.8% – declared to disagree with the general assertion *'Sardinian should be limited to private contexts'*. Nonetheless, when asked about their opinions on the use of the local language in specific environments, teachers proved to be much less cohesive. For example, the option *'Neutral/Do not know'* was selected by 45.4% of them

in response to the statement '*Sardinian should be used more in the mass media*'. Similarly, in regard to the assertion '*It would be right to have the possibility of speaking Sardinian in public offices*', a narrow majority of the respondents – 54.5% – agreed or strongly agreed with it, the 31.9% were neutrals and 13.6% disagreed or strongly disagreed. It appears that proposals designed to include Sardinian in public spaces are far to be widely accepted and tend to be divisive, as illustrated by the following contrasting positions.

Participant: “Yes, as a communication channel, I think this [using Sardinian in public offices] is necessary for certain types of customers. I think that it would be an advantage from a democratic point of view. I mean to help all people, belonging to all age groups, as much as possible. Thus, I think it would be very useful” (22/06/2018).

Participant: “I think Sardinia is very isolated; I would like that, even in practice, you could use Sardinian in public offices. However, at the same time, I am afraid it would be a way to isolate Sardinia further” (23/06/2018).

Participant: “In public offices I see it [speaking Sardinian] a bit like forcing things. I am not saying it is ridiculous; however, we are in Italy, we are in Europe, in public offices I would limit the use to Italian” (27/06/2018).

As shown by the second of these extracts, the belief that Sardinian lacks modernity (Joseph, 2014: 128) has a negative impact on some participants' attitudes towards its possible usage in public settings. The third extract exemplifies another pattern of responses that was often found in the interviews: the distinct ideologies and values conferred upon the majority and the minority language. In the aforementioned study on Welsh, May (2000: 121) noted that the majority language is “unproblematically accorded with the ‘benefits’ of national status”, whereas the minority language is “largely excluded from such benefits”. Correspondingly, participants often asserted that Italian is the only language that should be ordinarily used in public contexts.

In addition, it has to be highlighted that in both the National and the Regional language policy, the use of the minority language in public offices is linked to the possibility of having employees with competence in that language (Parlamento Italiano, 1999; Consiglio Regionale della Sardegna, 2018a). The natural consequence of this would be that certain jobs would have to be reserved for people who can speak the local language. Nonetheless, 59.1% of participants disagreed with a similar statement. This is probably explicable by referring to the notion of individual language rights. Many respondents seem to view favourably the bestowal of negative rights to the minority language, that is according all citizens the possibility of speaking the minority language without direct provisions by political authorities (Bruthiaux, 2009). However, positive rights, which instead involve an active intervention by political authorities to assimilate the minority language in public life (Bruthiaux, 2009), are thought to be capable, at least in some cases, of creating inequalities among individual citizens.

Interviewer: “If public offices' services were provided in Sardinian, this would imply that some jobs would be reserved for people who can speak Sardinian. How would you see this?”

Participant: “Uhm, I do not know. *Because it could be discriminatory against the ones who do not speak Sardinian...* just hiring people who can speak Sardinian, by-passing - let me use this expression - people who do not speak it, who are resident in Sardinia in all respects, but who were not born in Sardinia, and therefore, do not speak the language, I think this would be discriminatory” (23/06/2018; my emphasis).

Hence, the group of participants showed different and contrasting opinions and attitudes towards an enhanced presence of Sardinian in societal settings. Some of the ideologies and beliefs that were detected, such as the perception of Sardinian as a language lacking in modernity mojo (Joseph, 2014: 128) and the different values and statuses attributed to the majority and the minority language (May, 2000), if found to be more generally widespread, could hinder considerably the use of the local language in public domains. Moreover, similar beliefs and opinions – although not necessarily – may also influence negatively teachers’ will to implement the language education policies designed to increase the teaching of Sardinian at school.

5.3 Beliefs and ideologies about bilingualism

The questionnaire scale that was intended to elicit beliefs and ideologies about bilingualism revealed that participants, almost unanimously, share the belief that learning, especially from the first years of life, Sardinian and Italian, and even another language, is beneficial for children. Indeed, more than 90% of respondents agreed or strongly agreed with the statements ‘*Knowing both Italian and Sardinian constitutes an intellectual advantage*’ and ‘*It would be positive and not confusing for children to learn Italian, Sardinian and a widespread foreign language (e.g. English)*’. From the interviews, it emerged that teachers strongly believe that the knowledge of more than one language does not create confusion, and, instead, it brings cognitive and linguistic advantages.

Interviewer: “In family, in your opinion, would it be an advantage, or would it be confusing to speak both Italian and Sardinian from the first years of life?”

Participant: “No, I am absolutely certain that it is not confusing; indeed, studies, obviously not conducted by me, have shown that *children who grow up bilingually have a more elastic brain and a greater ability to learn further languages in the future*” (15/06/2018, my emphasis).

Participant: “Our mind, our brain is able to acquire more languages and not to make confusion among them. Therefore, just as there is no confusion, in theory, between English and French (...), there is no confusion even when Sardinian is involved” (15/06/2018).

Positive beliefs about the co-existence of Sardinian with other languages were expressed even when the school context was concerned. Indeed 77.3% of participants disagreed with the assertion ‘*Teaching Italian, Sardinian and a foreign language at school would be confusing for students*’. It seems that teachers would not be worried, from this particular point of view, by the introduction of the local language into schools. Secondary school teachers

though, are a group of speakers with a high-level educational background; if such beliefs about bilingualism are found to be common among other categories, they could constitute a good starting point for the maintenance of the minority language in Sardinia.

5.3 Sardinian at school

The Autonomous Region of Sardinia, in its official language policies, has often devoted great space to the issue of teaching Sardinian in educational contexts. In the questionnaire, 77.3% of respondents claimed to agree or strongly agree with the statement '*All schools should give students the opportunity to learn Sardinian*'. As long as it is an optional choice, providing students with the possibility of learning Sardinian is seen by many teachers as a way to preserve the island's identity and traditional heritage.

Participant: "An alternative school hour [in which Sardinian is taught] could bring students closer to their own identity" (18/06/2018).

Participant: "I find it [learning Sardinian at school] as an in-depth study of our culture; it is a way not to lose our customs and traditions" (19/06/2018).

Once again, the motivation to make students learn Sardinian seems to be, in large part, integrative (Gardner & Lambert, 1972: 3). Nonetheless, teachers proved to have also positive attitudes towards a plurilingual school environment that includes the local language (see 5.3). As noted by Sallabank (2010), a widespread awareness of the importance of the traditional heritage and of the advantages of bilingualism could be essential factors for the inclusion of an endangered minority language in the school context. However, although a high percentage of teachers claimed to be in favour of giving students the chance to learn Sardinian, many of those teachers appear to be inclined to relegate the local language to a quite marginal position, such as to extracurricular hours, i.e. in the afternoon.

Interviewer: "As far as Sardinian as an optional subject is concerned, do you imagine it within the curricular hours, i.e. in the morning, or as an afternoon activity?"

Participant: "We [teachers] do so many things that we can no longer find the time to do what we are called for, and so, it could probably end up in the afternoon" (15/06/2018).

Participant: "Honestly, as they [the students] have to attend that number of curricular hours per week, I do not know which subjects should be reduced to add Sardinian. However, they can attend afternoon projects, there are any kinds of projects after all" (15/06/2018).

A deeper assimilation of Sardinian in the educational environment, as encouraged by the Regional policy (Consiglio Regionale della Sardegna, 2018a), should involve the inclusion of the local language within the curricular hours or its use as a medium of instruction. However, to reach similar targets, it would be probably important to encounter one of the key reasons that has led to the relative success of Celtic-medium education in Wales: the perception of increased job opportunities for students who learn the minority language (O'Hanlon,

2015). As it can be seen in 5.1 and in the following piece of interview, such instrumental value – or getting-on mojo (Joseph, 2014: 128) – does not seem to be attached to Sardinian.

Participant: “The problem is globalisation, the problem is that *we tend to teach languages that tomorrow can be useful in the job market: English is one of those and unfortunately Sardinian is not*. Therefore, if I think about my son's future in Italy, I do not see the teaching of Sardinian as a very positive thing. It can be an enrichment, but it is not very useful” (29/06/2018, my emphasis).

In regard specifically to the proposal of using Sardinian as medium of instruction for some subjects, in the survey, 40.9% of participants claimed to be in favour, 31.8% neutral and 27.3% against. Nevertheless, in the interviews, most of the teachers expressed significant reservations about such a possibility, especially as far as secondary schools are concerned. In addition to the perceived lack of utilitarian reasons, it could be noticed again from some teachers' answers that the majority language receives uncritically a series of functions that, instead, are seen problematically for the minority language, including indeed being the language of instruction. As already noted by Lupinu (2007: 104; my translation), “the use [of Sardinian] at school is subordinate to the maintenance of a reassuring ancillary position towards the national language”.

Participant: “All subjects must be taught in Italian, the mother tongue. So, all subjects in the Italian language. If there are some of them that can partially be taught in Sardinian, it is fine”

Interviewer: “Do you mean all subjects in Italian, with some room for Sardinian?”

Participant: “Of course, of course, like that. *In any case, Italian is still the majority language*” (18/06/2018; my emphasis).

Related to this matter, many teachers pointed out that, especially in secondary schools, students who do not speak Sardinian might have serious troubles in keeping up lectures carried out in that language, and this would create inequalities among the members of the class. It seems that participants wanted to highlight again that certain interventions that are intended to increase the presence of the minority language in public or educational domains could potentially encroach upon individual rights.

Participant: “I see it [using Sardinian as a medium of instruction] as a little problematic. Because in some subjects it would be difficult to communicate properly and to explain the concepts correctly... Because probably there is a minimum percentage of boys coming from a family in which Sardinian is habitually spoken; therefore, there would be a problem in making the whole class learn.” (27/06/2018).

Besides issues linked to linguistic beliefs and ideologies, also practical problems could hamper the use of Sardinian as a teaching language. Many respondents reported that the implementation of a similar proposal is not very realistic, at least in the near future, because of the lack of competence of the majority of teachers.

Interviewer: “Is it realistic that Sardinian will be the medium of instruction of some subjects in the near future?”

Participant: “No, if I think of how the Italian school is structured nowadays, it is not... Bear in mind that teachers should also be prepared to teach in Sardinian. This means that they should take courses and learn it, for most of them it would be a second language... It is not something you learn overnight” (19/06/2018).

Even though similar answers do not seem to show a great degree of commitment to the revitalisation of Sardinian, they make potential problems of the institutional language education policy emerge. Issues like lack of preparation of teachers or difficulties for students keeping up the lectures were also identified by Samuelson & Freedman (2010), in regard to the introduction of a new teaching language in Rwanda. Problems of these kinds cannot be neglected; they indicate that some parts of the Sardinian language education policy are probably too ambitious. Therefore, the linguistic ideologies that have been described, together with such practical difficulties, are likely to prevent the teaching staff of the secondary schools of the ‘Istituto Lugore’ from putting into practice the opportunity, provided by the institutional policy, to insert Sardinian within the curricular timetable, and, especially, to employ it regularly as medium of instruction for some subjects.

Finally, it has to be highlighted that the issue that generated more contrasting positions was the one concerning the potential presence of a standard variety of Sardinian at school. Half of the respondents agreed with the questionnaire item about the use of a standard variety in the written form and in teaching materials. Nonetheless, 40.9% of participants declared to be in favour of the use of the various local dialects for the same purposes. On the one hand, a standard variety seems to be often viewed as a way to raise the status and the dignity of Sardinian; thus, as illustrated by Kulyk (2011), the corpus of a language is able to affect its perceived status.

Participant: “Well, I would prefer a standard variety... if we want it [Sardinian] to be a language, as English is, as other languages are, there must be a standard” (14/06/2018).

On the other hand, local varieties were usually considered as a better solution by those who emphasised the link between the language and the identity of the speakers.

Participant: “Local varieties for everyone. I am sure about this point; students would not accept a standard variety. It would be like making them lose part of their identity” (19/06/2018).

The dichotomy between standard and local varieties should not be underestimated. As some teachers highlighted, the decision on which variety should be used could make school agents refrain from teaching Sardinian in the first place.

Interviewer: “In the school setting, how would you see a proposal that would include Sardinian as an optional subject?”

Participant: “I see it as a very problematic thing, because there is no one single Sardinian, there are several Sardinian languages... Finding a common language to be taught is not easy at all” (29/06/2018).

The responses gathered in this study suggest that the issue of preferring a standard variety or a local one for educational purposes will remain extremely divisive and controversial.

6. Conclusions

In this research, it has been claimed that the study of language policy cannot be limited to the description of official, institutional activities of language planning. Drawing on Spolsky's (2004, 2009) and Shoamy's (2006) theoretical framework, language beliefs, ideologies and perceptions have been included in the notion of language policy. Related to this conceptualisation, it has been asserted that positive attitudes towards a language and its uses are crucial for the successful implementation of official policies, in particular when they deal with endangered minority languages (Baker, 1992; Garret, 2010). Therefore, in this study, it has been decided to include both a description of the language policies carried out at the institutional level in Sardinia, and an investigation of the beliefs and attitudes of an educational institution's teaching staff towards the main points of those policies, with a special focus on the ones regarding the school context. Twenty-two secondary school teachers agreed to fill in a questionnaire and participate in an individual semi-structured interview.

Most respondents feel that the Sardinian language is an important part of their identity and of the cultural heritage of the island. Nonetheless, they perceive Sardinian as a language with little utility in the job market. Moreover, the belief that Sardinian, being a minority language, hardly can cover certain functions that are normally carried out in the majority language, such as being regularly employed in public domains, seems to be quite common among participants. Furthermore, the fact that Sardinian is a minority language appears to incite teachers to call upon the notion of individual rights when asked about the possibility of putting the competence in Sardinian as a requirement for some jobs. Such ideologies, if further studies confirm that they are widespread among various groups of speakers, are capable of reducing the effects of status planning measures that have been designed to enhance the role of Sardinian in public spaces.

By contrast, a clear majority of participants expressed a very favourable disposition towards the idea of teaching two or more languages to children, because of the cognitive and linguistic advantages of bilingualism. In addition, most of the investigated teaching staff declared to be in favour of giving students the chance to learn the local language at school. These positive attitudes, in combination with the newest institutional language policy – the Regional Law n. 22 – may suggest that the introduction of Sardinian into the secondary schools of the 'Istituto Lugore' is not far to come. However, some of the linguistic beliefs and ideologies detected in this study seem to indicate that a systematic and substantial presence of Sardinian in this educational institution will not be easily achieved. Indeed, the perception of Sardinian as a language that is not useful for the career prospects of the students lead many teachers to imagine the presence of the local language in extra-curricular hours, that is in a marginal position. Moreover, the belief that Italian, i.e. the majority language, is

naturally entitled to certain roles, such as being the teaching language at school, and the idea that making Sardinian cover that role would cause a violation of individual rights, could block the investigated secondary schools' teaching staff from deciding to employ Sardinian as a medium of instruction for some subjects. Nonetheless, part of the teachers, especially in the questionnaires, claimed to be in favour of bestowing such a function upon the minority language. Further case studies are certainly needed to have a clearer picture of the more widespread language ideologies and, consequently, of the real possibilities that Sardinian has of becoming a systematic subject within the curricular timetable or even a medium of instruction alongside Italian. It has to be highlighted that the decision of which Sardinian should be taught at school – whether a local variety or an unspecified standard variety – seems to be significantly controversial and may slow down further the process of assimilation of Sardinian within the educational context.

In conclusion, reflecting upon the main language ideologies that emerged in this study, a general consideration appears appropriate. The institutional language policies seem to be dealing with a sort of circular problem, which can hardly be solved in the short term. The perceived lack of instrumental value of Sardinian, which is capable of hindering the implementation of language planning initiatives, is often tackled by interventions that could collide with speakers' ideas about the appropriate functions of a minority language and with their concept of individual language rights. However, Spolsky (2004: 14) observed that language management provisions often aspire to modify the linguistic beliefs and ideologies of a community. It remains, therefore, to be seen if, in the long run, the latest language management initiative, i.e. the Regional Law n. 22, will be able to invert some of the beliefs and perceptions that have been described in this study, or if, vice versa, they will limit the concrete effects of that Law. Future studies, both qualitative and quantitative, are recommended in order to provide information on this question. When future research wants to focus on the school context, it would be opportune to include also other agents that Spolsky (2009: 91–94) identified as involved in language education policy, such as principals, students and parents. Finally, future investigations should look at groups of speakers situated in other areas of Sardinia, to find out whether the language ideologies and beliefs are consistent or diversified throughout the island.

Notes

- 1 The interviews were conducted and transcribed in Italian. I personally translated the extracts that have been reported in this dissertation into English (similarly, the questionnaires were administered in Italian and, subsequently, I translated their contents into English). I added the phrases in square brackets in the interviews extracts for clarification purposes.

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Appendices

A. General characteristics of participants

Participant	Gender	Age	Subject taught	Area of origin	Competence in Sardinian
P1	Male	38	Humanities	Oristano	Passive
P2	Female	48	Humanities	Oristano	Passive
P3	Female	34	Maths and Sciences	Oristano	Passive
P4	Female	57	English	Oristano	Active
P5	Female	60	Maths and Sciences	Oristano	Active
P6	Female	41	English	Sassari	Active
P7	Female	43	Art	Sassari	No competence
P8	Female	40	Physical Education	Oristano	Passive
P9	Male	51	Humanities	Outside Sardinia	No competence
P10	Female	47	Humanities	Oristano	Passive
P11	Female	45	Humanities	Oristano	Active
P12	Male	40	English	Outside Sardinia	Active
P13	Female	48	Humanities	Outside Sardinia	Passive
P14	Female	42	Maths and Sciences	Oristano	Active
P15	Female	57	Maths and Sciences	Oristano	Passive
P16	Male	43	Humanities	Oristano	Passive
P17	Female	44	Maths and Sciences	Cagliari	Passive
P18	Male	38	Physical Education	Carbonia-Iglesias	Active
P19	Female	62	Humanities	Oristano	Passive
P20	Male	65	Maths and Sciences	Oristano	Active
P21	Male	45	Physical Education	Cagliari	Active
P22	Female	53	Religion	Oristano	Active

B. Questionnaire

	Strongly disagree	Disagree	Neutral / Do not know	Agree	Strongly agree
It is important to preserve the Sardinian language because it is part of our culture and cultural heritage					
It would be right to have the possibility of speaking Sardinian in public offices					
It is not worth making efforts and spending money to revitalise Sardinian					
I like hearing the Sardinian language					
It is unnecessary to learn Sardinian since Sardinia is part of an Italian-speaking country (i.e. Italy)					
Sardinian is essential for fully participating in Sardinian society					
Parents should use more Sardinian while talking with their children					
Sardinian should be limited to private contexts					
All schools should give students the opportunity to learn Sardinian					
Sardinian is not a suitable language to be taught in schools					
Sardinian should be taught compulsorily to all pupils in schools					
Schools should provide students with the possibility of being taught in Sardinian in some subjects					
Sardinian is essentially useless in the modern world					
Schools should provide students with the possibility of being taught in Sardinian in all subjects					
Sardinian should be used more in the mass media					
It is better to dedicate more time to the teaching of other subjects (e.g. Maths, History, etc.) or other languages (e.g. English, French) than to the teaching of Sardinian					

All pupils should be compulsorily taught in Sardinian in some subjects					
Certain jobs in Sardinia should be reserved for people who are able to speak Sardinian					
Sardinian is not suitable as a medium of instruction in schools					
Learning both Italian and Sardinian from the first years of age would be confusing for children					
In Sardinia, all public services should be available both in Italian and in Sardinian					
The use of the minority language in family can create problems for children when they enter an Italian-speaking environment, such as school					
Knowing both Italian and Sardinian constitutes an intellectual advantage					
It would be better for children to learn Italian and a widespread foreign language (e.g. English), rather than Italian and Sardinian					
It would be positive and not confusing for children to learn Italian, Sardinian and a widespread foreign language (e.g. English)					
In Sardinia, speaking both Italian and Sardinian should be an advantage in finding employment					
Teaching Italian, Sardinian and a foreign language at school would be confusing for students					
It would be confusing for pupils to be taught some subjects in Italian and some others in Sardinian					
It is important to know how to write in Sardinian					
Formal/official written communication in Sardinian should adopt a Standard variety					
Formal/official written communication in Sardinian should adopt the Standard variety proposed by the Regional Administration (Limba Sarda Comuna)					

Students should be taught to write a Standard variety of Sardinian and teaching materials should be written in that Standard variety					
Students should be taught to write the Standard variety of Sardinian proposed by the Regional Administration (Limba Sarda Comuna) and teaching materials should be written in that Standard variety					
Students should be taught to write in their local variety of Sardinian					

C. Interview outline

Is Sardinian useful in the modern world? If yes, why? If no, why not?

Is learning both Italian and Sardinian an intellectual advantage for children, or would it be confusing to learn both those languages in the first years of life?

Would it be right to have the possibility to speak Sardinian in public offices? If yes, why? If no, why not?

Should all schools give students the opportunity to learn Sardinian? If yes, from which age to which age should students be taught Sardinian? If no, elaborate your reasons.

Should Sardinian be taught compulsorily to all students in schools? If yes, why? If no, why not?
Is teaching Sardinian as a subject in schools realistic in the near future? What difficulties could there be?

Should students have the possibility of being taught in Sardinian in some subjects? If yes, why? If no, why not?

Is giving students the possibility of being taught in Sardinian in some subjects realistic in the near future? What difficulties could there be?

Would it be better to dedicate more time to the teaching of other subjects or other languages than to the teaching of Sardinian? If yes, why? If no, why not?

Given the fact that it is compulsory to learn Italian and English in schools, could it be confusing for students to add the teaching of Sardinian? If yes, why? If no, why not?

Would it be confusing for students to be taught some subjects in Italian and some subjects in Sardinian? If yes, why? If no, why not?

In which variety of Sardinian should students be taught to write? Should students be taught a Standard variety?

Should a Standard variety of Sardinian be used for the teaching materials (e.g. textbooks)? If yes, which Standard variety?

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MACRO-POLICY VS. MICRO-POLICY: A STUDY ON TWO ITALIAN-SARDINIAN WEBSITES^[*]

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Abstract: The present study aims at investigating the relationship between language policies at macro- and micro-level. Drawing on Baldauf's conceptualisation (2006), language choices at the micro-level can be considered either as a micro-implementation of a macro-policy or as an autonomous micro-policy. These dynamics have been explored in two Italian-Sardinian bilingual websites, whose language practices have been measured against the precepts and spirit of the macro-policy of the Regional Administration of Sardinia.

Keywords: language macro-policy; language micro-policy; websites; Italian; Sardinian

Theoretical background

Language policy and planning has been traditionally seen as an activity composed of various stages that have to be thoroughly programmed at an institutional, macro level (Karam, 1974: 106). However, Kaplan & Baldauf (2003: 201–202) acknowledged that the success of an institutional macro-policy is strongly related to the help it receives from more local levels. Baldauf (2006) indeed, stated that language policies should be studied not only at the macro level but also at the micro one. He proposed to distinguish cases of micro-implementation of a macro-policy and cases of independent micro-policy. In the former type, an organisation at a local level tries to put into practice, often with various difficulties, the guidelines present in the macro-policy of the region or nation to which that organisation belongs (Baldauf, 2006). In the latter type, a micro-level organisation of any type decides to carry out an autonomous language policy in order to fulfil its own necessities (Baldauf, 2006). The distinction between these two types of language policy are sometimes quite clear: DeLorme (1999) presented an investigation of the attempts made by the Kazakh government to revitalise the ethnic language of the nation, and the ways in which a particular school complied with the governmental guidelines in implementing the macro-policy. In other cases, it is not straightforward to understand whether language practices in local contexts are pure implementations of a macro-policy or independent micro-policies. From his study on language-education policy in Australia, Breen (2002) reported that what the teachers are required to do according to the macro-policy often has to deal with practical needs and with the peculiarities of specific local communities. Li (2010) described a similar situation in China in regards to teaching English as a foreign language: the teachers could not really implement the national cur-

[*] Previously unpublished. [Editor's note]

riculum, they had to adapt it to the necessities of the students. Although such teachers perceived themselves just as implementers of a policy which had been decided by political leaders or experts, the author argued that they are in fact policy-makers as much as those at the institutional levels (Li, 2010). The problem of agency in establishing if certain language choices can be defined as micro-policies or micro-implementations of a macro-policy has been addressed also by Gafaranga, Niyomugabo and Uwizeyimana (2013). Despite an important discrepancy between the spirit of the language policy in the Rwandan Constitution and some articles in the rules of procedure of the Rwandan Parliament, the members of such Parliament thought to be implementing the policy as it is written in the Constitution. The authors claimed that, even though agency was not claimed in this case, it is hardly appropriate to consider the articles of the Parliament just as a case of mismatch between the macro-policy and its implementation; those articles constitute an independent micro-policy of the Rwandan Parliament (Gafaranga et al., 2013).

At this point, it is opportune to clarify that language policies at every level are composed of multiple dimensions; in this respect, Spolsky (2004) stated that:

a useful first step is to distinguish between the three components of the language policy of a speech community: its language practices – the habitual pattern of selecting among the varieties that make up its linguistic repertoire; its language beliefs or ideology -- the beliefs about language and language use; and any specific efforts to modify or influence that practice by any kind of language intervention, planning or management (Spolsky, 2004: 5).

In regard to the first component, Bonacina (2010) argued that language practices are language policies themselves, namely language practices contain a policy in them. In view of these considerations, the relationship between macro-policy and language practices cannot always be reduced to the dichotomy implementation vs. micro-policy, but more subtle interactions may exist (Blommaert, Kelly-Holmes, Lane, Leppänen, Moriarty, Pietikäinen & Piirainen-Marsh, 2009; Kelly-Holmes, Moriarty & Pietikäinen, 2009; Gafaranga, 2015). Gafaranga (2015), in his study of translinguistic appositions in a trilingual website in Rwanda, noted that a macro-policy can often be regarded as the context in which language practices are embedded. Namely, the macro-policy is relevant in accounting for micro-level language choices, since it shapes them; at the same time however, those language choices put into being the macro-policy and make it be relevant (Gafaranga, 2015).

The complex relations between declared, governmental policy and language practices at lower levels can be profitably investigated by looking at what happens in the media (Blommaert et al., 2009). For example, the role of television in reinforcing the different status and prestige that the Swedish society accords to the various languages of its repertoire has been highlighted by Hult (2010). Kelly-Holmes et al. (2009) illustrated the relation between macro-policies aimed at revitalising minority languages in the Basque Country, in Ireland and in Finland, and the language practices of some traditional media of those countries. More recently, Kelly-Holmes (2015: 130–131) suggested to look at new media, such as the web, as a suitable place to investigate the relationship between top-down and bottom-up language policies and to focus on local language practices and their interaction with declared macro-policies.

In this paper indeed, the language choices of two Sardinian-Italian websites have been examined, putting particular attention on how they can be related to the macro-policy of the

Sardinian Regional Administration. It is important to specify, however, that there seems to be no easy way to know with certainty the level of interrelationship between those micro-level language practices and that declared macro-policy, and this limits the strength of the conclusions reached in this article. Interviewing directly the people who are in charge of such linguistic practices would probably have been helpful, but it would not have erased this shortcoming: indeed, as Gafaranga et al. (2013) showed, even when the people who make the language choices feel that they are putting into being a macro-policy, this might not be the case, and vice versa. Examining the degree of correlation between micro-level linguistic choices and macro-level language policy remains, at least in part, a matter of interpretation. Nevertheless, there are certain aspects that should be looked at carefully, in order to make the interpretation more solid and grounded on facts: first, if there is correspondence between the languages employed at the micro-level and the languages involved in the policy; secondly, if the linguistic problem seems to be something on which the micro-level organisation has reflected upon to obtain results linked to the sociolinguistic context in which it is embedded, or to get results of different nature; thirdly, if the grass-roots entity and the macro-policy show commonality of intentions, i.e. if they share spirit, goals and strategies to achieve such goals. These factors, then, have been taken into great consideration in the rest of this article.

The Sardinian context

Schjerve (1993: 271–272) illustrated that the Sardinian language is experiencing a process of language shift, since it is being replaced by Italian in an increasingly number of contexts. According to the UNESCO Atlas of the World's Languages in Danger (2010), Sardinian's vitality is definitely endangered. In apparent contrast with such definitions, the sociolinguistic research conducted by Oppo (2007) put in evidence that 68.4% of people in Sardinia declared to have some kind of active competence in a local variety. However, in commenting these results in the same research report, Lupinu (2007) pointed out that Sardinian is often neglected in domains such as family, which are fundamental for the intergenerational transmission of a language (Fishman, 1991: 67). Moreover, the lack of prestige that Sardinian faces, and its very limited use in public spaces and institutional contexts, has been clearly highlighted in the introduction of the sociolinguistic research report (Oppo, 2007). Focusing on the notion of language ideology and beliefs about language (Spolsky, 2004: 5), on the one hand, the Sardinian language is perceived as an important part of the identity of the islanders (Depau & Ghimenton, 2009: 222). On the other hand, it has often been seen as a barrier for socio-economic progress (Tufi, 2013). In view of this, the overall language practices, which include the exclusion of Sardinian from prestigious contexts, cannot be considered as surprising.

Spolsky (2004: 14) stated that language management – a concept which is close to that of declared language policy (Shohamy, 2006: 59) – is often intended to modify the language beliefs and practices of a community. The declared language policy of the Sardinian Regional Administration indeed, probably aims to change the sociolinguistic situation that has just been described. The Regional Bill n°26, approved in 1997, grants the Sardinian language “same dignity as Italian” (Regione Autonoma de Sardigna; my translation). This generic

claim has been better specified in following years. In 2011, the Regional Administration approved a three-year plan for the enhancement of the Sardinian language (Regione Autonoma de Sardigna). This was intended to encourage the use of the minority language in various sectors of society and to enhance its prestige. For example, the use of Sardinian in the media was promoted: Sardinian programs concerning folklore, local traditions, and similar, were discouraged to avoid the association of Sardinian with the past. In contrast, it was urged that “the programs produced should be of high professional value and related to current issues” (Regione Autonoma de Sardigna, 2011: 43; my translation).

In this research I have investigated the language practices of two websites that make use of both Sardinian and Italian. In this way it has been possible to see how two micro-level organisations fit or challenge their sociolinguistic surroundings. Moreover, the aim of this study has been to examine whether or not the language practices of these sites, namely their “de facto” language policies (Shohamy, 2006: XV), comply with the declared policies of the Regional Administration; in other words, the research question wondered if such declared policies have, at least in part, shaped the language choices of the sites and, if so, how these sites have interpreted and put into practice the claims present in the macro-policy.

Methods to collect and analyse data

The present research has been conducted on two websites, which are carried out bilingually in Italian and Sardinian: EjaTV.com and Lâcanas.it. The two websites are publicly available and do not require user’s registration to access. EjaTV.com is an online television, divided in channels and subsections within channels; the data collected consist of both the written parts of the site and its videos. Because of time constraints, it has not been possible to analyse every single video present in the website. It has been decided to take into account, going backwards from April 2018, the most recent 10 videos of every subsection of each channel (or all the videos if there are fewer than 10). In total, 407 videos have been considered. Lâcanas.it instead, is an online newspaper, divided in various thematic sections. Therefore, only written data have been collected; precisely, the most recent 10 articles of each section (or all the articles if there are fewer than 10) have been taken into account – again going backwards from April 2018 – leading to a total of 127 articles. The collection of the data has been carried out through a practice that Kelly-Holmes (2015: 134) defined as “lurking and observing”: namely, constantly monitoring the sites, without participating actively, with the purpose of identifying their language choices. Following the recommendations of Kelly-Holmes (2015: 134) concerning the analysis of language policies and practices in new media, the attention of the research has been focused on verifying the language options that are available in the websites. In particular, the total amount of linguistic-space (Sebba, 2013) dedicated to each language has been taken into consideration, as well as the language choices in every section of the two sites. As further suggested by Kelly-Holmes (2015: 134), the functions that the two languages fulfil when they are employed have been carefully examined. More specifically, it has been recorded which language is used to discuss which topic or subject. Moreover, the language choices in the sites have been considered in view of the sociolinguistic circumstances (Spolsky, 2004; Sebba, 2013) and the language policy (Blommaert et al., 2009; Kelly-Holmes, 2012; 2015; Gafaranga, 2015) of the regional territory to which those sites belong.

Results

EjaTV.com

EjaTV.com is a Sardinian website which contains an online television. First of all, it is important to say that the user is given the possibility to select the language of the website: the options available are two, Sardinian and Italian. Based on which language the user selects, various writings of the website change their form: for example, the writing to access the contact information section could be “*contatti*”, if the selected language is Italian, or “*cun-tatos*”, if it is Sardinian (EjaTV.com, no date). Therefore, the approach the site seems to adopt, at least for its written parts, is bilingualism with parallel texts (Sebba, 2013). Sebba (2013) defined them as written texts in which the two languages have symmetrical space, the content expressed in the two languages is the same and there is no language alternation, the linguistic mixing type is monolingual. However, this approach is not carried out constantly in EjaTV.com. In the section dedicated to the different channels of the television, while the names of such channels are mostly in Sardinian, their descriptions are available only in Italian, regardless of the language selected. Thus, among the written components of the website, there are also instances of complementary texts (Sebba, 2013). As Sebba explained (2013), in complementary texts, the space dedicated to the two languages is asymmetrical, the content is different and the linguistic mixing type can vary, in this case being again monolingual, with no language alternation. It is therefore evident that the site contains sections with all the peculiarities of parallel texts, and other sections whose characteristics are more similar to those of complementary texts. Another aspect of the website’s written components deserves particular attention. The text contained in the contact information section, as well as the text concerning legal information on respect for privacy, are available only in Italian. In general, as far as the written components of the site are concerned, more space is given to Italian and more content is expressed in that language. In particular, except for some proper names of channels and programs, there is no piece of content that is expressed in Sardinian and not in Italian, while there are Italian texts which are not available in Sardinian.

In regard to the numerous programs and videos, Sardinian and Italian are more clearly used in complementary distribution. Except from sporadic cases in which both languages are employed, yet in different parts of the videos and to say different things, in all the videos either Sardinian or Italian is used; none of the Italian videos has a Sardinian version or vice versa. Moreover, apart from one exception, none of the Italian videos has subtitles in Sardinian or vice versa. As pointed out by Sebba (2013) and Gafaranga (2015), this type of complementary bilingualism assumes that the audience has competence in both the languages used, since a message is conveyed only once and only in one language. Nevertheless, the extent to which the two languages are employed is significantly different: indeed 77.9% of the 407 analysed videos are in Italian, only 14.7% in Sardinian; Italian is the predominant language in 10 channels out of 12 (see Table 1). There is also little space for sporadic videos in foreign languages (3.9%). Italian and Sardinian seem to differ also in terms of contents conveyed; Sardinian is very often excluded from modern and prestigious topics. For example, the channel “*Astros*” is described as “the channel of science and technology” (EjaTV.com, no date; my translation): 96.7% of the videos of this channel are in Italian. By

contrast, a program such as “*Biddas*”, which is intended to talk about the traditional culture of Sardinia’s villages, is completely carried out in Sardinian. In terms of functions and contents, Italian and Sardinian seem to be represented in a diglossic relationship (Ferguson, 1959), with Sardinian being the low language. This pattern of language practices is at odds with the heading of the channels section: “EjaTV is the television of Sardinia’s languages” (EjaTV.com, no date; my translation). This declared care for the local languages is, at least in part, contradicted by the language practices found in the website.

<i>Name of channels</i>	<i>N° of videos in Italian</i>	<i>N° of videos in Sardinian</i>	<i>N° of videos in Ital. and Sard.</i>	<i>N° of videos in other languages</i>	<i>Total n° of videos</i>
Sardegna Teatro	9 (90%)	0 (0%)	1 (10%)	0 (0%)	10 (100%)
Cagliari Calcio	10 (100%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)
Innovas	59 (88%)	3 (4.4%)	4 (5.9%)	1 (1.4%)	67 (100%)
Cinema	15 (75%)	2 (10%)	0 (0%)	3 (15%)	20 (100%)
Siendas	19 (95%)	1 (5%)	0 (0%)	0 (0%)	20 (100%)
Astros	59 (96.7%)	0 (0%)	2 (3.3%)	0 (0%)	61 (100%)
Terra	44 (75.8%)	11 (18.9%)	2 (3.4%)	1 (1.7%)	58 (100%)
Lugore	1 (25%)	3 (75%)	0 (0%)	0 (0%)	4 (100%)
Sonos	8 (27.5%)	12 (41.3%)	2 (6.8%)	7 (24.1)	29 (100%)
Entula	43 (72.8%)	13 (22%)	2 (3.3%)	1 (1.7%)	59 (100%)
Novas	24 (82.7%)	2 (6.8%)	1 (3.4%)	2 (6.8%)	29 (100%)
Sport	26 (65%)	13 (32.5%)	0 (0%)	1 (2.5%)	40 (100%)
Total	317 (77.9%)	60 (14.7%)	14 (3.4%)	16 (3.9%)	407 (100%)

Table 1: Languages used in the videos of the 12 channels of EjaTV.com

Làcanas.it

Làcanas.it is a Sardinian website related to a namesake magazine, whose subtitle is “bilingual magazine of the identities” (Pillonca, 2003 to present; my translation). In view of the identity value that Sardinian has on the island (Depau & Ghimenton, 2009: 222), it is not difficult to see in that subtitle an interest both in writing the magazine in two languages and valorising the role of Sardinian. The website is a sort of online newspaper, with a news bulletin, which is daily updated, and different thematic sections. In contrast with EjaTV.com, it is not possible to select the language of the website, the settings are exclusively in Italian. The articles instead, are written either in Italian or in Sardinian. The two languages are alternative, no Italian article has its Sardinian correspondent and vice versa. Taken together therefore, those articles are complementary texts in which the mixing type is monolingual (Sebba, 2013). As said above, this implies that the readership is assumed to be competent in both languages (Sebba, 2013; Gafaranga, 2015). Looking at the degree of use of the two languages, it seems that the intentions implicitly declared in the subtitle of the magazine have been put into practice in the website’s articles. Indeed, considering the most recent 10 articles of each section, it can be found that the two languages are employed in an almost symmetrical way: 55.9% of the articles are in Italian, 44.1% in Sardinian (see Table 2), a

much more balanced percentage than that of EjaTV.com. It has to be specified that the various sections cannot be given the same relevance; the section of the news bulletin, “*Bacheca*”, is by far the most active one, being updated on a daily basis. To better understand, let us consider these numbers: none of the articles in the other sections has been published in April 2018, all of them are less recent. On the other hand, within the timespan from the 1st to the 15th of April 2018, 23 articles have been posted in the news bulletin, more than one a day, on average. Considering that the news bulletin is written exclusively in Sardinian, it can be said that the role of the minority language is predominant in Làcanas.it. Moreover, Sardinian is used to write about every kind of subject, from music (as in the section “*Musica*”) to more prestigious topics, such as technology (as in the section “*Multimedia*”) or politics (as in “*Bacheca*”). The same can be said for Italian, which is employed, for example, to write about local culture in the section “*Tradizioni*” (Traditions), and about scientific contents in the section “*Archeologia*” (Archaeology). In the articles of this website, the two languages do not have a diglossic relation (Ferguson, 1959).

<i>Name of the sections</i>	<i>N° of articles in Italian</i>	<i>N° of articles in Sardinian</i>	<i>Total n° of articles</i>
Tradizioni	8 (80%)	2 (20%)	10 (100%)
Multimedia	0 (0%)	3 (100%)	3 (100%)
Storia	9 (90%)	1 (10%)	10 (100%)
Cinema	8 (80%)	2 (20%)	10 (100%)
Subra su palcu	0 (0%)	10 (100%)	10 (100%)
Ventanas	0 (0%)	10 (100%)	10 (100%)
No profit	4 (100%)	0 (0%)	4 (100%)
In bidde	10 (100%)	0 (0%)	10 (100%)
Ervas	10 (100%)	0 (0%)	10 (100%)
Musica	0 (0%)	10 (100%)	10 (100%)
Archeologia	10 (100%)	0 (0%)	10 (100%)
Cronaca	4 (40%)	6 (60%)	10 (100%)
Focus	8 (80%)	2 (20%)	10 (100%)
Bacheca	0 (0%)	10 (100%)	10 (100%)
Total	71 (55.9%)	56 (44.1%)	127 (100%)

Table 2: languages used in the most recent 10 articles of each section of Làcanas.it

Discussion

Gafaranga (2015) claimed that macro language policies can shape the language choices of micro-level organisations. The cases analysed fit quite well in this description, since the languages used by the two websites are the ones mentioned in the macro-policy of Sardinia’s Regional Administration, namely Sardinian and Italian. The goal of that macro-policy is to give “same dignity” to those two languages (Regione Autonoma de Sardigna, 1997; my translation). When EjaTV.com declares to be “the television of Sardinia’s languages” (EjaTV.com, no date; my translation), it seems to comply with the purposes of the macro-

policy. Nonetheless, the actual language practices of that site show only a tokenistic engagement (Kelly-Holmes et al., 2009) to the minority language. The sociolinguistic status quo is not really challenged, in contrast with the agenda of the Regional policy. As Spolsky (2004: 14) pointed out, and as it is the case in Sardinia, language planning may try to modify common language practices. Instead, the almost total exclusion of Sardinian from prestigious topics in EjaTV.com, seems more to accommodate the sociolinguistic situation of the island and it is not even in accordance with the exhortation of the Regional Administration to use Sardinian to talk about modern contents (Regione Autonoma de Sardinia, 2011). Moreover, the use, albeit rare, of foreign languages has little to do with the Regional policy. It is worth specifying that one of the EjaTV's Italian programs, called "*Tg migranti*" (Migrants' newscast), makes constant use of English subtitles; this choice is justified by the nature of the program, which is addressed to migrants, namely native speakers of neither Italian nor Sardinian. Thus, such linguistic choice responds to a particular communicative necessity of the website. Following Baldauf (2006), this is exactly what characterises an independent micro-policy. On the other hand, the aforementioned statement "EjaTV is the television of Sardinia's languages" (EjaTV.com, no date; my translation) may suggest that the people in charge of EjaTV.com perceive that they are taking linguistic choices in line with the macro-policy. Nevertheless, as Gafaranga et al. (2013) proposed, if the discrepancies between the macro-policy and what happens in a specific organisation are significant, it is warranted to consider the linguistic choices of that organisation as a micro-policy on its own, even if there is no agency claimed in that direction.

As far as Lâcanas.it is concerned, its language practices are much more closer to the concept of equal dignity between Sardinian and Italian (Regione Autonoma de Sardinia, 1997). The decision to employ Sardinian to write about modern and current issues is clearly in line with the agenda of the macro-policy, namely enhancing the prestige of the minority language. According to Kaplan & Baldauf (2003: 222) "prestige planning consists of those image or prestige-related goals that need to be met to promote and intellectualise a language". By discussing about technology or foreign affairs in Sardinian, Lâcanas.it is attempting to intellectualise the language and improve its image, in total compliance with the spirit of the Regional macro-policy. In view of all this, the language practices of Lâcanas.it could be seen as a micro-implementation of the macro-policy. However, in the website no explicit reference to the latter is made and therefore, we cannot be sure about the agency involved in such language choices. Based on the concepts developed by Gafaranga (2015), what seems safer to claim is that the Region's macro-policy is a context that frames the language choices of this site and that helps their interpretation. On the other hand, the language practices at such a micro-level write into being the macro-policy (Gafaranga, 2015). The two levels therefore, are strictly interrelated.

Slightly moving away from these issues, it is worth making a final remark. If the purpose of the people in charge of Lâcanas.it is, as it appears, the promotion of the image of Sardinian, they may want to pay more attention on the settings of the website. As explained by Cunliffe & Herring (2005) and Kelly-Holmes (2012: 340), the fact that the software, the housekeeping, or the settings of a website are in the majority language can negatively affect, in "visual and paralinguistic terms" (Kelly-Holmes, 2012: 340), the image of the minority language.

Conclusion

By analysing the language choices of two Sardinian-Italian websites, it has been possible to compare language practices at micro-level with declared, institutional macro-policies, like the ones of the Sardinian Regional Administration. It has been found that, in spite of explicit claims and potential perceptions of the agents, when the language choices of an organisation at a local level have profound divergences with the macro-policy of its territory, it is appropriate to refer to those choices as constituting an autonomous micro-policy. On the other hand, it has also been found that new media, such as websites, can contribute to a macro-policy, by putting it into being, challenging the sociolinguistic status quo of a community and promoting the use and prestige of a minority language. When macro- and micro-level have this type of convergence, the two levels should be seen as interacting with each other. Nonetheless, it is appropriate to acknowledge that such conclusions have been reached not only looking at figures and percentages, but also through a subjective interpretation of the meaning of certain language usages and of their association with the precepts of the Sardinian macro-policy. The shortage of completely objective evidence in support of the findings represents a limitation of the analysis presented. This study and similar ones that will be done in the future should consider to involve the people who are responsible for the linguistic choices of the sites and ask them for clarifications on the relationship between such choices and the macro-level language policy of the relevant territory. Nevertheless, it has been seen that such solution may not be enough, since the people in charge may believe that there is a strong connection between their linguistic choices and the official policy, although the facts show a significant distance between those two levels. Therefore, a certain degree of interpretation seems to be almost inevitable in these types of examinations, but in order to make the conclusions cogent, it is fundamental to analyse thoroughly as many pieces of institutional language policy as possible and try to understand their agenda, their priorities and the suggested ways to get to them. Then, a search for commonalities and differences between the micro-level organisation and those pieces of institutional policy in terms of languages involved, importance given to the sociolinguistic surroundings and strategies to obtain specific sociolinguistic goals should follow. When the differences prevail, it seems better to talk of micro-level language policy independent from the macro-level one; when the commonalities are predominant, it seems reasonable to talk of two correlated forces, pushing towards the same direction.

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UKRAINIAN CONSONANT PHONES IN THE IPA CONTEXT WITH SPECIAL REFERENCE TO /v/ AND /gh/^[*]

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Abstract: The acoustic and articulatory properties of Ukrainian consonant phones were investigated, and a full set of relevant IPA notations was proposed for these and compiled in a table. Acoustic correspondence of Ukrainian phones to those appearing in European languages was analyzed and discussed. Special attention was paid to the phonemes /v/ (represented in Cyrillic script as “/В/”) and /gh/ (rendered in Cyrillic script as “/Г/”) that cause the most difficulties in their description. In particular, our experiments and observations suggest that a standard Ukrainian phoneme /v/ is realised as labiodental fricatives [v] and [v^j] before vowels and also as sonorant bilabial approximants [β, β₁, β₂] between a vowel and a consonant, in the initial position before consonants and after a vowel at the end of a word, and sometimes is devoiced to [v̥] in the coda after a voiceless consonant. In some utterances after a vowel (before a consonant and in the coda), a strongly rounded bilabial approximant [β₂] may approach a non-syllabic semivowel [ɥ]. These conclusions are in good agreement with the consonantal status of the Ukrainian language and with the general tendencies of sound combinations in the world languages. The findings of this research contribute to better understanding of Ukrainian and its special features in comparison with other world languages that may have substantial practical use in various phonetic and translation studies, as well as in modern linguistic technologies aimed at artificial intelligence development, machine translation incorporating text-to-speech conversion, automatic speech analysis, recognition and synthesis, and in other areas of applied linguistics.

Key words: Ukrainian consonant phone set, International Phonetic Alphabet, visual analysis of articulation, bilabial approximant, text-to-speech technology.

Phonetic studies represent one of the most promising areas of modern linguistics because, in addition to their specific significance in the field, they produce important data for advanced speech technologies. In particular, the developers of modern multi-lingual translation tools need information on the phones of the world languages. Among these, the Ukrainian language remains one of the least investigated.

The combined investigation of Ukrainian vowels based on analysis of theoretical and experimental data, was presented in the recent article (Vakulenko, 2018). At the same time, the presence of palatalized consonantal cognates across different articulation classes signifies the consonantal character of the Ukrainian language (cf. Isachenko, 1963). This makes the Ukrainian consonantal subsystem perhaps more interesting and significant for comparative phonetic and speech studies.

[*] Previously unpublished. [Editor's note]

As emphasized in Vakulenko (2018), the major problem of Ukrainian phonetics and orthoepy is that modern judgments about them are based on outdated phonetic material received from but one speaker and processed with old-fashioned apparatus. The monograph “Contemporary standard Ukrainian. Phonetics” (Bilodid, 1969) appeared in Ukrainian decades ago (where the section “Consonants” was written by Larysa Prokopova), remains one of the major works in the Ukrainian phonetics presenting experimental data on the consonants. This material was used with minor changes (and without up-to-date experimental studies) in a number of later books and manuals, particularly in the monograph “Ukrainian” (Danylenko & Vakulenko 1995) oriented primarily at the English-reading audience.

The article “Ukrainian” (Pompino-Marschall, Steriopolo & Żygis, 2016) focuses on phonetic properties of Ukrainian speech sounds grounded on recordings of one speaker from Bukovyna (South-Western Ukraine). In particular, the labiodental pronunciation of a /v/ has been reported (here and in what follows, the corresponding Cyrillic graphemes are transliterated according to the simple-correspondent transliteration system of the Ukrainian Latinics presented in Vakulenko, 2015c)¹. However, aiming to represent IPA notations necessitates not only observation of articulatory movements of a speaker, but also their instrumental recording and examination and comparison with the data obtained in other phonetic experiments. The authors follow, without any explanation, theoretical assumptions of Buk, Maczutek & Rovenchak (2008) not duly based on linguistic facts, experimental material and relevant references and including an ungrounded statement about velar approximant character of a Ukrainian sonorant sound of the Cyrillic grapheme “в”. In addition, some important details of their phonetic experiment (including the method of determining articulation) were not described. In view of this, the status of phones outlined in the mentioned articles, still remains unclear.

Last but not least, the task to determine the most relevant International Phonetic Alphabet (IPA) symbol for the given Ukrainian sound is a complicated undertaking that requires collecting representative experimental data, performing profound comparative analysis of the multi-lingual phonetic material, and basing on good command in the IPA notations. For example, incorrect interpretation of the description of a Ukrainian voiced fricative sound of the Cyrillic grapheme “р” given in Bilodid (1969), Toczka (1981) resulted in Danylenko & Vakulenko (1995), Press & Pugh (2015) in its wrong representation by the symbol “h” that denotes a voiceless sound in the IPA.

One should not expect much from the first studies of the Ukrainian phones that are heavily influenced by the general state of Ukrainian phonetics. This fact necessitates further experimental investigation in this area.

So, this article is aimed to analyze phonetic features of the Ukrainian consonants in the IPA notations context, and to present a table correctly accounting for these.

1. Investigation methods and material

The choice of investigation methods is affected by the current situation in Ukraine where phonetic studies receive no financial support. So, this investigation is based on the combined

¹ According to conventional Ukrainian notations, the phonemes and phones are denoted by Cyrillic letters in slashes and brackets, respectively. To avoid confusion with standard IPA signs when considering description of problematic sounds, we provide necessary explanations in the text.

use of auditory and visual comparative analysis, auditory observation, and oscillogram analysis.

The visual analysis was carried out to determine the degree of lips rounding and protrusion in the articulation of the Ukrainian sonorant sound of the Cyrillic letter “В” by specially trained native Ukrainian TV news announcers and program participants, in comparison with pronunciation of the approximant [w] by two native English speakers (British and American English variants). The most popular TV programs available in the Internet, were chosen. For comparison with the English sounds, similar sound environments were selected. The co-articulation effects were balanced by choice of different sound combinations for similar positions.

Such an assessment is important, first for phone mapping purposes needed for speech recognition automatic tools. Second, in view of the absence of sufficient and reliable data on Ukrainian articulation, this analysis may give certain insights in the nature of this phone in the Ukrainian context. In total, the visual acoustic material was collected from six native Ukrainians, where Speaker PR was born in Ternopil (Тернопіль), Western Ukraine; Speaker KhS was born in Lviv (Львів), Western Ukraine; Speaker OL was born in Chernihiv (Чернігів), Northern Ukraine; Speaker PK was born in Kropyvnytsjkyj (Кропивницький), Central Ukraine; Speaker SZ was born in Zhashkiv (Жашків), Cherkasy region, Central Ukraine; Speaker EB was born in Sudak (Судак), Crimea, Southern Ukraine. Thus, the southwestern dialect group was represented by two speakers, and the southeastern dialect group that forms a base of the contemporary standard Ukrainian, was represented by four speakers. The moments of maximal lips closure / protrusion were chosen for visual analysis that was controlled both visually and acoustically.

The auditory observation was used to study the perceptual character of spontaneous Ukrainian speech heard in Kiev (Kyjiv) in 1991–2017.

The CD-quality recorded speech of a native Ukrainian professional actor (born in Dnipro, Central Ukraine) trained according to the orthoepic norms described in (Bilodid, 1969), was also used to examine acoustic realisations of the Ukrainian phoneme /gh/. Throughout the article, we use the conventional notion of the phoneme (Crystal, 2008: 361–363). This analysis was based on the oscillograms obtained with use of the special software Sound Forge 4.0.

The compliance of the obtained results with the general and Ukrainian phonetic laws governing language evolution (Isachenko, 1963), phone clusters formation (Kawasaki 1982), was checked.

2. Ukrainian consonants

2.1. General remarks

The detailed description of the Ukrainian consonants may be found in Zhovtobrjugh & Kulyk (1965: 120–127), Bilodid (1969: 134–179), Tocjka (1981: 62–88). In view of this, we will pay more attention to the most important or difficult issues such as palatalization, acoustic features of affricates, and consonants appearing when reading out Ukrainian letters “В” and “Р” that cause much difficulty in their description and classification.

A phonemic opposition between plain („hard”) and palatalized („soft”) consonant phonemes has developed in the Ukrainian language (see Isachenko, 1963; Bilodid, 1969; Tocjka,

1981). Though three levels of palatalization may be distinguished: strong, moderate, and weak palatalization (see Bilodid, 1969: 179), – this gradation arises solely from articulation features of the given consonant. So, keeping in mind these subtleties, we will nevertheless supply all palatalized consonants with the same symbol “j”.

It is worth mentioning in this connection that the first element in the Ukrainian postalveolar affricates [tʃ] and [dʒ] (the standard readout of the Cyrillic graphemes “ч” and “дж”, respectively) is found to be palatalized, as demonstrated in Vakulenko (2012: 232, 461), Vakulenko (2015b: 178, 322).

Let us note also that as the plain lateral sonorant sound corresponding to the Cyrillic letter “л” is articulated with a concave middle part of the tongue (see Bilodid, 1969: 167; Tocjka, 1981: 87), the IPA symbol ɭ for a velarized, or “dark” sound (articulated with a raised dorsum) is appropriate for it (cf. Pompino-Marschall et al., 2016: 4).

2.2. The readout of the Ukrainian “в”

The plain sound corresponding to the Ukrainian letter “в” (being latinized as “v”) has been posited as a predominantly bilabial fricative and sonorant consonant that may be vocalized into a non-syllabic sound [ʋ] (Cyrillic [ʋ])² in a position before a consonant and in the end of a word after a vowel when a constriction is lost or weakened: *вдень* ‘in the afternoon’, *впасти* ‘fall’, *вхопити* ‘grab’, *вчора* ‘yesterday’, *мовчати* ‘to be silent’, *певно* ‘probably’, *правда* ‘truth’, *кров* ‘blood’, *лев* ‘lion’, *острів* ‘island’, *став* ‘(he) became’ (Zhovtobrjukh & Kulyk, 1965: 121; Bilodid, 1969: 137, 386; Tocjka, 1981: 84–85). The latter sound is reported to differ from the corresponding bilabial consonant by lips rounding and protrusion and to diverge from a syllabic vowel [u] (Cyrillic [y]) by less amount and time of lips rounding (Zhovtobrjukh & Kulyk, 1965: 121; Tocjka, 1981: 85). It is characterized as “a sound intermediate between [v] and [u]” (Press & Pugh, 2015: 27).

For unspecified reasons, the relevant bilabial sound was transcribed in Bezpajko (1957: 166), Zhovtobrjukh & Kulyk (1965: 106), Tocjka (1981: 36, 84) by the Latin letter “w” that is assigned in the IPA to a labiovelar approximant (glide), thus having implied specific “Ukrainish” accent. This resulted in further discrepancies, as this letter was used later to designate either a bilabial constrictive consonant (Danylenko & Vakulenko, 1995: 6), or a bilabial fricative sonorant sound (Press & Pugh, 2015: 23), and a labiovelar approximant (Buk, Maczutek, & Rovenchak, 2008: 66; Pompino-Marschall et al., 2016: 4). To avoid inconsistencies, an IPA symbol [β] should be used instead (see Laboratorio di Fonetica Sperimentale). At the same time, a non-syllabic semivowel [ʋ] has been marked with [ɹ] (Danylenko & Vakulenko, 1995: 6; Buk et al., 2008: 66; Pompino-Marschall et al., 2016: 7), where diphthongization of a non-syllabic [ɹ] following a vowel was claimed (Zhovtobrjukh & Kulyk, 1965: 120). We will discuss below both bilabial variants in detail.

A labiodental fricative variant of a sound of “в” has been also admitted to arise as an alternative to its bilabial correlate either before an [i] (Zhovtobrjukh & Kulyk, 1965: 121), or before an “и” (transliterated as “y”), “е”, and “а” (Bilodid, 1969: 137). Later it was stated that this sound comes out in the word or syllable beginning (cf. Tocjka, 1981: 85): *вода* [vɔ-ɖɑ⁺] ‘water’, *ваза* [vɑ⁺-zɐ] ‘vase’, *вино* [vi⁺-no] ‘wine’. Such wider occurrence of the

² The authors cited below did not use IPA notations, so this is transliteration, not an IPA symbol.

labiodental fricative likely resulted not from a sixteen-year language evolution (from 1965 till 1981) but rather from more accurate phonetic investigation. The corresponding palatalized consonant was also first considered as typically bilabial (Zhovtobryukh & Kulyk, 1965: 121; Bilodid, 1969: 142), and afterwards as labiodental (Точка, 1981: 85). These phones, plain and palatalized, correspond to the IPA symbols ν and ν^j , respectively.

It is stated also in Bilodid (1969: 246) that in the word-final position after voiceless consonants, the phoneme /v/ (Cyrillic /В/) is realised in its voiceless variant: *багатств* [bɛ-ɦɑ⁺ʲʂtɥ] ‘of riches’, *видавництва* [vɪ⁺-dɛβ-ɲɪ⁺ʂtɥ] ‘of publishing houses’, etc. The IPA designation [ɥ] should be used in this case.

The late acoustic research and observations of the contemporary spontaneous and specially trained standard Ukrainian speech introduce certain corrections to the earlier description of this consonant.

The labiodental fricative sounds [v] and [v^j] appear much more frequently than assumed in 1960-ies. Within this trend, new labiodental sounds – approximants [ʋ] and [ʋ^j] – were recently described (Pompino-Marschall et al., 2016: 4; see also Buk et al., 2008: 66). Such a difference between early and contemporary notions may be conditioned by a small number of informants involved in experiments of that time, by special instructions on pronunciation given to them, by inexact fixation of the moment of the sound articulation, by instrumental error, and by incorrect interpretation of the data obtained. Whenever the upper incisors approach the lower lip, so does the upper lip which may cause confusion in the description of such an articulation.

In general, the bilabial articulation of this sound in a position before vowels displays instability, at least in some languages. For example, the Spanish phoneme /v/ has two main allophones: a bilabial fricative [β] pronounced in the word-middle (in intervocalic position) as in *lavar* ‘to wash’, and a bilabial stop consonant [b] in initial position (before vowels) as in *ver* ‘to see’. Such a distribution is not known in Ukrainian that supports an idea of the predominantly labiodental character of the Ukrainian /v/ before vowels. Also, this allophone is observed to occur in other feasible positions.

As for possible allophones in positions before consonants and in the end of a word after a vowel, three bilabial candidates may be considered: a labiovelar approximant (glide) [w], a non-syllabic semivowel [ɰ], and a bilabial approximant [β]. As we already noted, a comparison with other languages should be carried out with a great care, and special features of the contemporary standard Ukrainian language should be duly accounted for.

There are two types of approximants: glides and semivowels. The glides are classified as “consonants produced with a constriction that is not sufficiently narrow to cause a significant average pressure drop across the constriction during normal voicing” (Stevens, 1998: 513). In particular, the labiovelar glide [w] results from “forming a narrow lip opening with rounding of the lips, similar to the vowel /u/ but ... with a narrower constriction ... the tongue body is placed in a raised and backed position, and consequently this glide can be considered to be velar as well as rounded or labial” (Stevens, 1998: 516). The characteristic formant frequencies of this sound are $F1 = 270 \text{ Hz}$, $F2 = 700 \text{ Hz}$ (Stevens, 1998: 517, 523).

In the English, French, Italian, Spanish, German and other languages, a labiovelar glide appears as a modified vowel [u] that approaches a strongly labialized consonant in a position before a next vowel: *what* (Eng.), *oui* (Fr.), *uomo* (It.), *agua* (Sp.), *bequem* (Ger.). Figs. 1, 2

present articulation of this sound in English *what*, *where*, *word*. The snapshots were made at the moment of the narrowest lip constriction.^[**]

The articulation of this approximant “glides” from an *u*-position to a following vowel position, and its production is accompanied by energetic articulatory gestures. It has to be emphasized that historical origin of the Ukrainian phoneme /v/ from a non-accented vowel after another vowel and from the “smooth” [ɫ] (Cyrillic [л]) after a vowel before a consonant and in word final (see Zhovtobryukh & Kulyk, 1965: 119) should be well distinguished from its contemporary realisation. The modern situation in Ukrainian is quite contrary to that of the English, French, Italian, Spanish, German and other vocalic languages: here a consonant phoneme /v/ partly acquires some vowel-like properties in the position before another consonant or in coda, with reduced articulation. Visual representations of facial articulation of different realisations of contemporary standard Ukrainian phoneme /v/ are given in Figs. 3–9. The snapshots were made at the moment of the narrowest lip constriction.

As can be seen from Figs. 2–9, there is a significant difference between an utterance of an English [w] in *what*, *where*, *word*, etc., and a Ukrainian [ɓ] in all positions, including those before consonants and in the end of words. An English [w] is articulated with significant lip protrusion as in [u], whereas a Ukrainian [ɓ] is not. During a Ukrainian [ɓ] before consonants (where a non-syllabic semivowel [ɯ] allegedly arises), the lips corners are just pressed to the teeth, and no strong lips protrusion is observed. At the same time, the Ukrainian [y] is articulated with significant lip protrusion (see Figs. 4, 7).

There are also more general differences. According to measurements of O. A. Kasjjanova (2015: 332–333), the second formant frequency of the allophone of /v/ appearing before a consonant, is 1007 Hz, and that of the allophone before a vowel makes 1310 Hz. These quantities are well higher than corresponding characteristics of a glide [w] residing near the value of 700 Hz (cf. Stevens, 1998: 517–532). This is an acoustic indication that a Ukrainian [ɓ] is likely not a labiovelar approximant.

In turn, the appearance of a non-syllabic semivowel [ɯ] after vowels (before consonants and pauses) would result in a diphthong rise, whereas the Ukrainian language manifests an opposite tendency of diphthongs fall (see Bezpalyko et al., 1957: 146; Zhovtobryukh & Kulyk, 1965: 131–134). The sound appearing before consonants and after vowels in coda, is mostly a bilabial consonant articulated as during [b] but with the tongue slightly displaced backwards (cf. Tocjka, 1981: 84) that acquires some vowel-like properties (in particular, it can never be devoiced and is hardly ever palatalized) but normally is not accompanied with energetic articulation and strong lip protrusion. So, this sound cannot be regarded as a pure, full-fledged semivowel. Such description best corresponds to a rounded bilabial approximant [β̞].

As follows from Figs. 4–9, a labiodental fricative consonant [v] appears in all possible positions but prevalently before vowels; an unrounded, less rounded and more rounded bilabial approximants [β, β̞, β̞̞] arise between a vowel (and a pause) and a consonant and after a vowel in coda; and a constrictional bilabial consonant [β] may emerge between a front vowel [i] and a consonant.

[**] All the figures are placed at the end of the paper. [Editor’s note]

2.3. The readout of the Ukrainian letter “z”

The sound of the Ukrainian phoneme /gh/ (Cyrillic /r/) is often rendered through English “h” (see Danylenko & Vakulenko, 1995; Press & Pugh, 2015) that is not advisable. In particular, it was posited that the Ukrainian /gh/ (/r/) is pronounced “close to English *h* in *house*, but with more voice and less aspiration” (Press & Pugh, 2015: 18). This description is not accurate. First of all, comparison to English is hardly suitable since the Ukrainian phoneme /gh/ (/r/), in contrast to the English /h/, can precede not only vowels but consonants as well. Unlike the English, German, and Latin /h/, the Ukrainian phoneme /gh/ (/r/) in a position before vowels has a distinctly voiced readout (modal voicing) without aspiration, whereas before consonants it gives rise to a velar fricative (non-aspirated) sound that may also be devoiced to a [ɣ̥] (more details will be given below). As for the sound closeness (phone mapping), a comparison with the readout of the Spanish “g” in *agua* ‘water’ is more appropriate.

A Ukrainian sound [r] has been described as a voiced pharyngeal consonant (Zhovtobryukh & Kulyk, 1965: 122; Bilodid, 1969: 176). It is stated that articulation of this sound is not characterized by a predetermined tongue position. During its production, the tongue root approximates the pharynx wall, and the tongue position depends on the next sound (Bilodid, 1969: 177; Tocjka, 1981: 83). This description corresponds to the IPA sign ʁ that may be regarded also as an approximant.

Velar variants of this sound (belonging to the hyper phoneme /kh gh/ (/x r/)) have been reported to emerge in a position before consonants and also in coda – both a voiced realisation [x̣], as in *тих* (днів) [tɪ⁺x̣] ‘of those (days)’, *широких* (доріг) [ʃɪ⁺-rɔ⁺-kɪ⁺x̣] ‘of wide (roads)’ (cf. Zhovtobryukh & Kulyk, 1965: 123), and a devoiced one (the sound [ɣ̥]) due to regressive assimilation, as in *кізми* [kɪ⁺-ɣ̥tɪ] ‘claws’, *нізми* [nɪ⁺-ɣ̥tɪ] ‘nails’, *возко* [vɔ⁺-ɣ̥ko] ‘damp’, *легко* [lɛ⁺-ɣ̥ko] ‘easily’ (Bilodid, 1969: 257, 398). Its palatalized cognate [ɣ̥^j] is also possible, as in *гість* [ɣ̥^ji⁺ɣ̥^jtɪ] ‘guest’, *загін* [zɛ⁺-ɣ̥^ji⁺ɣ̥^j] ‘detachment’ (cf. Bilodid, 1969: 391). The experimental data of B. Pompino-Marschall et al. (2016: 7) indicate appearance of the voiced velar fricative sound [ɣ] before consonants (produced by a male native speaker from Bukovyna, South-Western Ukraine) as in *них двох* ‘of two of them’³, *зігріло* ‘warmed up’.

Also, the glottal fricative allophone [ɦ] of the phoneme /gh/ (/r/) was experimentally observed in the position before vowels: *одного* [ɔ⁺-ɦɔ⁺] ‘of the one’, *того* [tɔ⁺-ɦɔ⁺] ‘of that’ (Pompino-Marschall et al., 2016: 7).

Possible appearance of glottal ([ɦ] and [ɦ^j]), pharyngeal ([ʁ] and [ʁ^j]), and velar ([ɣ] and [ɣ^j]) variants was observed in our experiments (see Vakulenko, 2012: 229; Vakulenko, 2015b: 175), that supports the earlier statement about the variable articulation of this sound depending on the next vowel or consonant (see Bilodid, 1969: 177; Tocjka, 1981: 83). This is illustrated by Fig. 10 where oscillograms of the sound [r] in word-final and intervocalic positions are presented.

It can be seen from Fig. 10 that acoustic realisations of the Ukrainian phoneme /gh/ (/r/) are different in the coda and in intervocalic position. In the first case, a partly devoiced velar allophone [ɣ̥] with a significant noise component arises whereas in the latter, a glottal allophone ɦ with dominating voice component and minimal noise emerges. Plain velar and pharyngeal or glottal allophones enter the approximate complementary distribution relation: the

³ Strictly speaking, the sound [x̣] appears here.

first one is met before consonants and in the coda (but may arise also before vowels), the last two appear before vowels. All of them are included in Table 1.

2.4. The Ukrainian consonantal inventory

The general inventory of the Ukrainian consonants is presented in Table 1.

		Bilabial	Labio-dental	Alveolar	Post-alveolar	Palatal	Velar	Pharyngeal	Glottal
Plosive	Plain	p b		t̪ d̪			k g		
	Palat.	<i>pʲ bʲ</i>			tʲ dʲ		<i>kʲ gʲ</i>		
Nasal	Plain	m		n̪					
	Palat.	<i>mʲ</i>		n̪					
Fricative	Plain		f (v)	s̪ z̪	ʃ ʒ		x y	(ʕ)	(h)
	Palat.		<i>(fʲ) (vʲ)</i>	<i>s̪ʲ z̪ʲ</i>	<i>ʃʲ ʒʲ</i>		<i>xʲ yʲ</i>	<i>(ʕʲ)</i>	<i>(hʲ)</i>
Affricate	Plain			t̪ʃ̪ d̪ʒ̪	tʃ̪ dʒ̪				
	Palat.			<i>t̪ʃ̪ʲ d̪ʒ̪ʲ</i>	<i>tʃ̪ʲ dʒ̪ʲ</i>				
Trill	Plain			r					
	Palat.			<i>rʲ</i>					
Approximant	Plain	(β, β _x , β _ɹ)	v						
	Palat.					j			
Lateral approx.	Plain			l̪					
	Palat.			<i>lʲ</i>					

Table 1: Ukrainian consonants (Note 1: sounds in parentheses are the allophones arising due different phoneme articulation; Note 2: sounds corresponding to peripheral phonemes, are rendered in *italic*)

It is remarkable that our experiments and observations revealed the fact that in the Ukrainian geminate affricates occurring in *обличчя* ‘face’ [o-blɨ⁺-tʃ̪ʃ̪ɐ], *робиться* [rɔ⁺-bɐ⁺-tʃ̪ʃ̪ɐ], ‘is being done’, etc., lengthening results from the longer occlusion phase of the plosive component (see Fig. 11 for [tʃ̪ʃ̪] in *хочеться* ‘is desired’).

It is seen from Fig. 11 that lengthening of the geminate affricate in *хочеться* is determined by a longer occlusion phase of the stop component. The relevant IPA transcription should be [xɔ⁺-tʃ̪ʃ̪⁺-tʃ̪ʃ̪ɐ].

Another regular Ukrainian sound assimilation phenomenon is environmental palatalization: the plain phonemes /t/ (Cyrillic /т/), /d/ (/д/), /n/ (/н/), /l/ (/л/), /s/ (/с/), /z/ (/з/), /c/ (/ц/), /dz/ (/дз/) having strongly and moderately palatalized cognates, are realised in the palatalized sounds if they follow the phoneme /i/ (/і/) and precede a strongly or moderately palatalized consonant. An example is presented in Figure 12 where the phoneme /z/ is shown to undergo such a palatalization when preceded by an [i] and followed by a [ɲ].

It is remarkable that in the last case, the palatalization is not complete because there is a weak sub-formant of 1630 Hz in the spectrum corresponding to the plain sound.

There may be exceptions from this rule for prefixes that are normally more stable in pronunciation and are subject of less assimilation. The exact palatalization degree for each sound combination is a separate task being a matter of future investigation.

3. Discussion

A number of outcomes of this research need special emphasis and discussion.

3.1. In the inventory of the Ukrainian consonant phonemes, the phoneme /g/ (Cyrillic /r/) which is realised in the chief allophone [g], should be referred to the peripheral subsystem as a rare plosive variant of the /gh/ (/r/). The frequency of /g/ (/r/) in modern Ukrainian is lower than 0.1% (Zhovtobryukh, 2004: 765). This is a consequence of the tendency of Ukrainian to change the plosive sound [g] into the fricative velar [ɣ] and fricative glottal [ɦ] (see Bezpalyko et al., 1957: 82; Tocjka, 1981: 62). The works of S. Buk et al. (2008) and B. Pompino-Marschall et al. (2016) did not account for this tendency that allows us to assume that the relevant tables do not exactly reflect the Ukrainian consonant inventory.

3.2. The experimental facts indicate that in the absence of assimilation and devoicing, the Ukrainian phoneme /gh/ (/r/) is realised in three most frequent allophones: velar [ɣ], pharyngeal [ʕ], and glottal [ɦ], where the first is likely to occur before consonants and the other two probably arise before vowels. If so, this is a matter of complementary distribution. However, this assumption requires more detailed and comprehensive experimental investigation that should be presented elsewhere.

Deficiency of experimental data makes it difficult to select the chief allophone among the three based on their phonetic characteristics and occurrence. However, this problem may be solved by addressing the phonemic speculations. In the Ukrainian inclination paradigm, the phoneme /gh/ (/r/), as well as the /g/ (/r/), forms the triad with the /zh/ (/ж/) and /zʲ/ (/зʲ/): *pič* ‘horn; corner’ – *наріжний* ‘corner’ – *на розі* ‘at the corner’, whereas its voiceless phonemic equivalent enters the triad /kh/ – /sh/ – /sʲ/ (/x/ – /ш/ – /сʲ/): *вуха* ‘ear’ – *вушний* ‘ear’ – *у вусі* ‘in the ear’. This is a strong motivation to consider the velar sound [ɣ] being an exact voiced equivalent of the [x], as the chief allophone of the Ukrainian phoneme /gh/ (/r/). This allophone is located between the [g] (representing the rare peripheral phoneme /g/ (/r/)) and [ʕ] and/or [ɦ]. The pharyngeal and/or glottal allophones are characterized by relatively small turbulent noise and significant vowel-like afterbreath that serves as a “bridge” to the next vowel (see more details about the afterbreath properties in Vakulenko, 2012: 232–237; Vakulenko, 2015b: 180–186). This difference in acoustic and articulatory characteristics from the main allophone [ɣ] may arise from a co-articulation effect conditioned by their appearance before vowels.

3.3. The problem of relating sounds in different languages is important for various theoretical and applied phonetic studies and, particularly, for **phone mapping** between world languages needed for automatic speech recognition. We would like to pay attention to the fact that the reason for the essential dissimilarity in articulation and acoustic properties between an English [w] and a Ukrainian [в] is not accidental. The languages where a labiovelar approximant [w] is usually met (and studied) are vocalic, i. e. they have a developed vowel

subsystem. Contrary to this, Ukrainian is a typical consonantal language where, in particular, a phonemic opposition between plain and palatalized consonants has emerged (see Isachenko, 1963). By this criterion, Ukrainian is close to Czech, Bulgarian and Russian, and distant from English, Serbian and Croatian. This suggests much weaker vocalization and diphthongization phenomena in Ukrainian than in English and other vocalic languages (cf. Zhovtobrjukh & Kulyk, 1965: 58) and historical evolution of diphthongs into monophthongs (cf. Bezpajko et al., 1957: 146; Zhovtobrjukh & Kulyk, 1965: 131–134). Besides, the conversion of a non-syllabic semivowel [ɥ] into its fricative cognate as in *човен* [tʃɔ'vɛn] 'boat', *повен* [pɔ'vɛn] 'full' was reported in Bezpajko et al. (1957: 159). In turn, S. Buk et al. (2008: 66) note that diphthongs are non-phonemic in Ukrainian. So, the tentative emergence of a labiovelar glide [w] before vowels, as well as a semivowel [ɥ] after vowels that would result in a diphthong, does not comply with a consonantal tendency of the Ukrainian language.

An analogy of a labiovelar approximant / glide with its palatal cognate may be drawn also, treating these as the grave and acute counterparts (see Andersen, 1962: 74; Stevens, 1998: 513–532). Both Ukrainian non-syllabic [j̥] and [j̄] arose from relevant non-stressed vowels in the position after a vowel (see Zhovtobrjukh & Kulyk, 1965: 119) that implies their similar further evolution. The Ukrainian phoneme /j/ (/j̄/) is represented by two allophones, where a consonant [j] appears before vowels, and a non-syllabic [j̄] that occurs after them, is fairly similar to [j] both in articulation and in acoustic perception (Zhovtobrjukh & Kulyk, 1965: 122). It is agreed that despite its origin, the Ukrainian [j̄] belongs to consonants that manifest a consonantal tendency of the Ukrainian language. The same tendency acts on the phoneme /v/ that is expected to acquire with time more and more consonantal features.

There exist general restrictions on the positional appearance of an approximant [w]. It was established in Kawasaki (1982: 169) that the most frequent are those phone sequences whose elements are maximally different in their acoustic properties. In view of this, combinations “[b] + [w]” and “[w] + back vowel” are disfavoured in the world languages (Kawasaki, 1982: 171–173). These restricted positions strongly overlap with those allegedly typical for a labiovelar approximant in the Ukrainian language that is an additional argument against this conjecture.

In addition, vocalization of the final /v/ after vowels contradicts the universal tendency to avoid long consonant clusters and long vowel clusters (see Kawasaki, 1982: 170). The appearance of a non-syllabic semivowel [ɥ] is especially disfavoured after an acoustically close vowel [u] as in the verbs *був* '(he) was', *кинув* '(he) threw', etc.

Our conclusions concerning allophones of a /v/ differ from the conjectures of S. Buk et al. (2008) put forward without due theoretical grounding and experimental support (that might be speech recordings, palatograms, airflow data, etc.). In particular, it should be kept in mind that classification of a [v] (Cyrillic [В]) before back rounded vowels [o] and [u] that have a flattening effect on preceding consonants, may be incorrect due to wrong interpretation of the tongue position in the transeme between both sounds. It is remarkable that B. Pom-pino-Marschall et al. (2016) indicated such a co-articulation influence but, for some reason, did not move further in their conclusions, having just restricted themselves by repeating the conjectures of S. Buk et al. (2008).

The cue feature here is lips protrusion that is strong in the case of a labiovelar glide and weak in the case of a bilabial or labiodental fricative. In terms of S. Buk et al. (2008) and B.

Pompino-Marschall et al. (2016), the allophone of /v/ appearing before an [o] in *пpигоди* ‘occasion’, *двох* ‘of two’, *вони* ‘they’, *вгоє* ‘their’, might had been better marked as a lowered labiodental approximant [v̥] (cf. Laboratorio di Fonetica Sperimentale).

It is remarkable that the appearance of a labiodental fricative consonant [v] between a front vowel [i] and a consonant was detected in our audiovisual experiments (see Fig. 9) and also observed by B. Pompino-Marschall et al. (2016: 7).

One may expect, however, the possible appearance of a labiovelar approximant in a fluent utterance of the sound combination *-овува-* as in Ukrainian verbs of imperfect aspect: *застосовувати* ‘to apply’, *скасовувати* ‘to cancel’, etc. In some Western Ukrainian dialects, a strongly rounded bilabial approximant [β̞] may approach a non-syllabic semivowel [ʋ] in a position after a vowel (before a consonant and in the coda).

As B. Pompino-Marschall et al. (2016) suggested, we use the IPA symbol *v* to render the Ukrainian phoneme /v/ (/B/). However, we treat this sign as a notation of the hyperphoneme being realised in the differently articulated allophones [β̞ β̞̣ β̞̤] and a [v] (and its devoiced cognate), and a [v̥].

So, we propose more detailed and precise description of the Ukrainian phoneme /v/ than presented in the earlier works that is important for further progress in contemporary phonetic and related studies.

3.4. The problem to render the loaned European (mostly English and German) /h/ in Ukrainian and to transliterate a Ukrainian grapheme “r” into the Latin script is somewhat intricate because there is no exact correspondence between relevant sounds, and different approaches should be applied in the first and latter cases – invariant transcription and transliteration (see Vakulenko, 2015b: 229–254; Vakulenko, 2015c). The English and German [h] is considered either as a voiceless aspirated fricative, or glide, or vocoid sound with no determined point of noise generation (see Boase-Beier & Lodge, 2003: 98–127; Stevens 1998: 448–449, 513) that always precedes a vowel. The Ukrainian sounds [x] and [r] are respectively voiceless and voiced consonants forming a correlation pair (Точка 1981: 93) that may appear anywhere in a word. So, an English and German [h] differs from a Ukrainian pair in position and articulation, and is similar to [x] by absence of voice.

This similarity is evidently manifested in the words that have arisen from imitation of aspirated voiceless sounds in Ukrainian: *ха-ха-ха* ‘ha ha ha’, *хе-хе* ‘he he’, *хи-хи* ‘hee hee’, *хо-хо* ‘ho ho’, *хукати* ‘to blow’, *тьху* ‘pooh, faugh’, *кахукати* ‘to cough’, *чхати* ‘to sneeze’, *хан* ‘snatch’, *пхукати* ‘to whimper, to snivel, to pule’.

It is important to note that a Ukrainian sound [x] is pronounced differently before consonants and vowels and acquires in the latter case a glottal vocalized afterbreath (Vakulenko, 2012: 234–237; Vakulenko, 2015a: 11; Vakulenko, 2015b: 180–186) that enhances its similarity with an English and German [h]. In turn, our phonetic experiments within the 2003–2004 Fulbright program demonstrate that an isolated American English [h] is uttered with significant friction in the velum area, as a separate Ukrainian [x]. This may be explained by the fact that the human vocal tract is bent right above velum, so turbulence is located mainly in this area. The recording of an American English sound [h] in different positions pronounced by a female native speaker is available here:

<https://drive.google.com/file/d/0Bw44-ZBHniK_b0hYa2o1eWN6bGc/view?usp=sharing>.

It was illustrated in Vakulenko (2015a: 9) that in the last decades, a tendency emerged to render an English (and also German) [h] by a Ukrainian letter x: *Hooligan* (Eng.) – *хуліган*, *know how* (Eng.) – *ноу-хау*, *hacker* (Eng.) – *хакер*, *Hände hoch* (Ger.) – *хенде хох*, *Heidegger* (Ger.) – *Хайдеггер*.

Following H. Kawasaki (1982: 169), we may state that a combination “[x] + vowel” is favoured in comparison to “[r] + vowel” because a voiceless consonant [x] has more pronounced acoustic contrast with a vowel than a voiced [r] that, in addition, is characterized by variable tongue position depending on the next vowel (see Bilodid, 1969: 177; Точка, 1981: 83).

Whenever a Ukrainian word (mostly a proper name or a word denoting some specific Ukrainian entity) has to be used in the international context, a simple-correspondent transliteration should be applied (Vakulenko, 2004; see also Vakulenko, 2015b: 229–254; Vakulenko, 2015c). Thus, Ukrainian Cyrillic letters are converted into Latin graphemes without reference to their sound in any other language. Unfortunately, these requirements, as well as a Ukrainian alphabet history, are often ignored. As the letter “r” is a historical descendant of the Hellenic grapheme “ϝ” that corresponds to a Latin “g” as in *grammar*, *Gregory*, *geography*, *goniometer*, etc., this symbol should be kept in transliteration of a “r”: gh, ğ – thus warranting also correct information transfer in the transliterated text (see details in Vakulenko, 2004; Vakulenko, 2015b: 229–254; Vakulenko, 2015c).

3.5. The phonemic status of the weakly palatalized cognates of Ukrainian consonant phonemes /b/, /v/, /gh/, /zh/, /k/, /m/, /p/, /f/, /kh/, /ch/, /sh/ has been not clearly determined heretofore. Such sounds usually appear before an /i/ (Cyrillic /и/), and as it was recognized that an /i/ (/i/) and an /y/ (Cyrillic /и/) are independent phonemes⁴, they have been considered just as positional allophones of corresponding plain phonemes (see Bilodid, 1969: 239–241; Точка, 1981: 46). However, there is a number of phonemic oppositions between such plain and palatalized counterparts before back vowels: *бургер* [bʲʊ'r-hʲɔ+r] ‘burgher’ – *бургер* [bu'r-hʲɔ+r] ‘burger’, *бюст* ‘bust’ – *буст* ‘boost’, *бязі* ‘(of, to, from) unbleached calico’ – *базі* ‘(to) the base’, *кюре* ‘cure, parish priest’ – *Куре* ‘1. Kure; 2. Couret’, *мюль* ‘mule’ – *Муль* ‘Moullé’ (a municipality in France), *Мюрат* ‘Murat’ – *Мурат* ‘Murat’, *ревю* ‘revue’ – *реву* ‘(I) roar’, *свят* [sʲvʲɔ+ʲt] ‘of holidays’ – *сват* [sʲvʲɔ+ʲt] ‘1. matchmaker; 2. marriage broker; 3. father of the son-in-law; 4. father of the daughter-in-law’. This fact makes it possible to regard these palatalized sounds as chief realisations of corresponding palatalized phonemes of the peripheral subsystem, as M. Zhovtobryukh proposed in 1965 (see Точка 1981: 63–64).

4. Conclusions

In this article, we have investigated some acoustic and articulatory properties of Ukrainian consonants based on earlier studies of Ukrainian reports of well-known phoneticians and on our own experimental material, and we have proposed a full set of relevant IPA notations for the consonant phones of contemporary standard Ukrainian compiled in the table. Acous-

⁴ acoustic and morphological proofs for this are given in Точка (1981: 46–48)

tic correspondence of Ukrainian phones to those appearing in European languages was analyzed and discussed. We applied here auditory and visual comparative analysis, auditory observation, and speech analysis based on the use of special software, and also general and Ukrainian phonetic laws governing language evolution and phone clusters formation. The research is illustrated with visual images and oscillograms. Such a combined approach resulted in a more detailed phone inventory than proposed before.

The sound [g] was referred to the peripheral system of Ukrainian phones since it is the chief allophone of the rare phoneme /g/ (Cyrillic /r/). Based on phonemic speculations, the sound [ɣ] was selected as the chief allophone of the /gh/ (/r/).

It was demonstrated that the allophones of the standard Ukrainian phoneme /v/ significantly differ in their acoustic characteristics from those of a labiovelar glide (approximant) [w], as well as in relevant articulation by native American English and British English speakers. Our experiments and observations suggest that a standard Ukrainian phoneme /v/ is realised as labiodental fricatives [v] and [v^ɰ] before vowels and also as sonorant bilabial approximants [β, β_ɰ, β_ɰ] between a vowel and a consonant, in the initial position before consonants and after a vowel at the end of a word, and sometimes is devoiced to [v̥] in the coda after a voiceless consonant. In some western Ukrainian dialects, a strongly rounded bilabial approximant [β_ɰ] may approach a non-syllabic semivowel [ɥ] in a position after a vowel (before a consonant and in the coda). These conclusions are in good agreement with the consonantal status of the Ukrainian language and with the general tendencies of sound combinations in the world languages.

It was shown also that the velar [ɣ] and pharyngeal [ʕ] and/or glottal [ɦ] allophones of the Ukrainian phoneme /gh/ (/r/) probably obey the complementary distribution relation: the first one is likely to be met mostly before consonants and in the coda (but may also arise before vowels), the last two appear before vowels.

Having investigated linguistic facts stating that the English and German [h] is acoustically close to the Ukrainian [x] and accounting for preferred contrasting sound combinations, we recommend using the letter x in place of this phone in relevant loanwords.

These findings are more precise, comprehensive, grounded and detailed, and give rise to more systematic consonant inventory than the relevant results of Bilodid (1969). Buk et al. (2008), Pompino-Marschall et al. (2016).

We suggest also that the weakly palatalized phones [b^j], [v^j], [ɣ^j], [ʒ^j], [k^j], [m^j], [p^j], [r^j], [f^j], [x^j], [tʃ^j], [ʃ^j], as well as the [g] and its palatalized cognate, may be regarded as chief allophones of relevant peripheral phonemes.

The more detailed and comprehensive study of modern Ukrainian speech may result from due financial support.

The results of this research may be useful in various phonetic and translation studies and in modern linguistic technologies.

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Figures

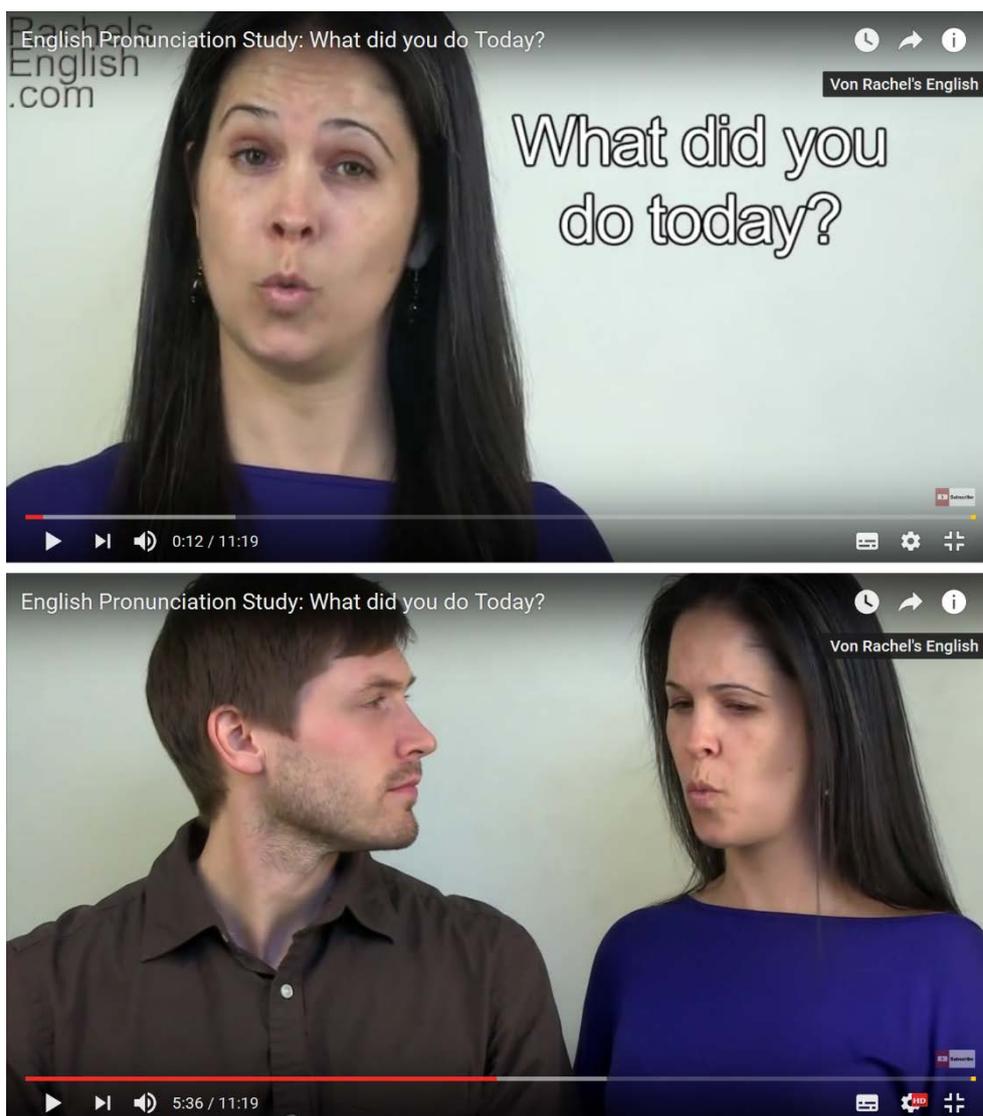


Figure 1

A visual representation (vizeme) of facial articulation of a labiovelar glide [w] in American English *what* (top) and *where* (bottom). Strong lips protrusion with a narrow orifice is formed, as in an [u].

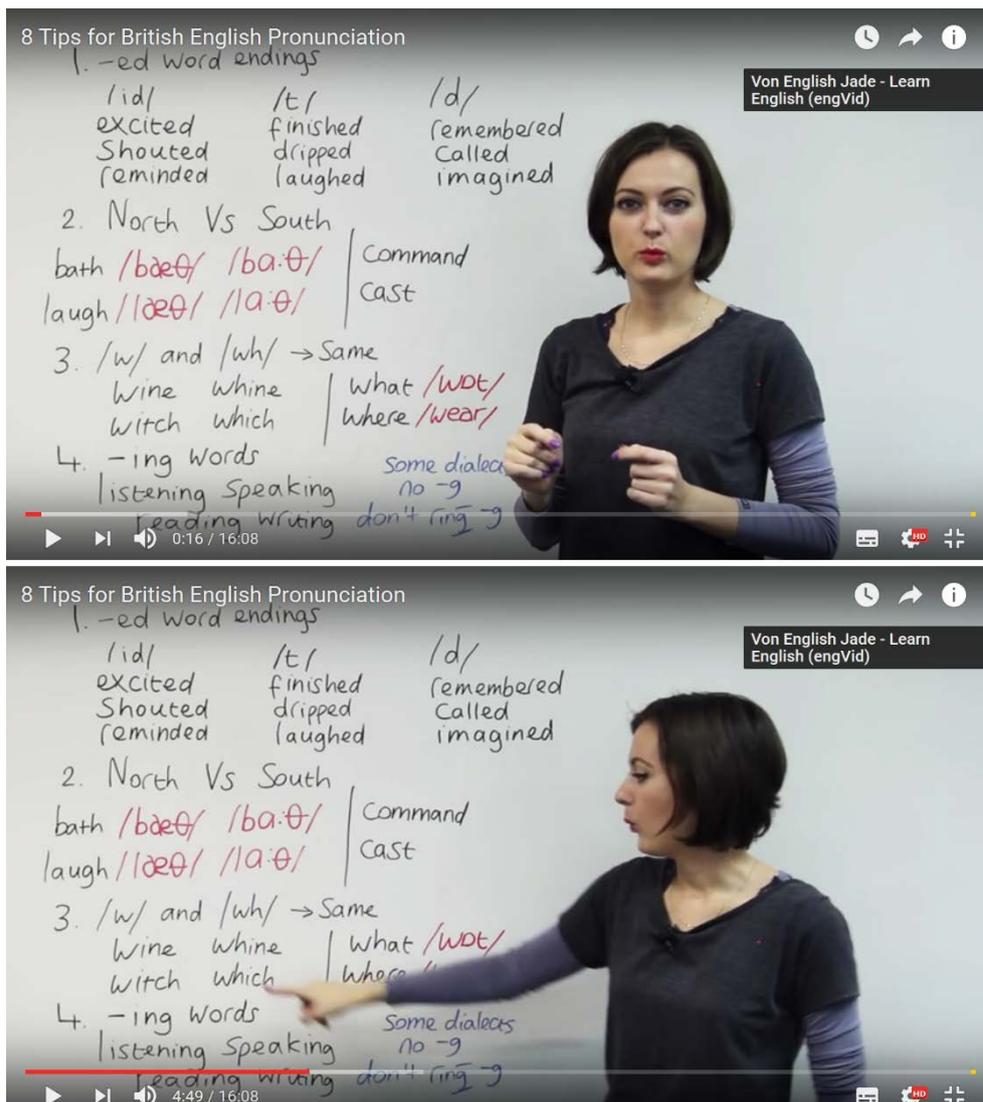


Figure 2

A visual representation (vizeme) of facial articulation of a labiovelar glide [w] in British English word from the front (top) and in profile (bottom). Significant lips protrusion with a narrow orifice is formed, as in an [u].

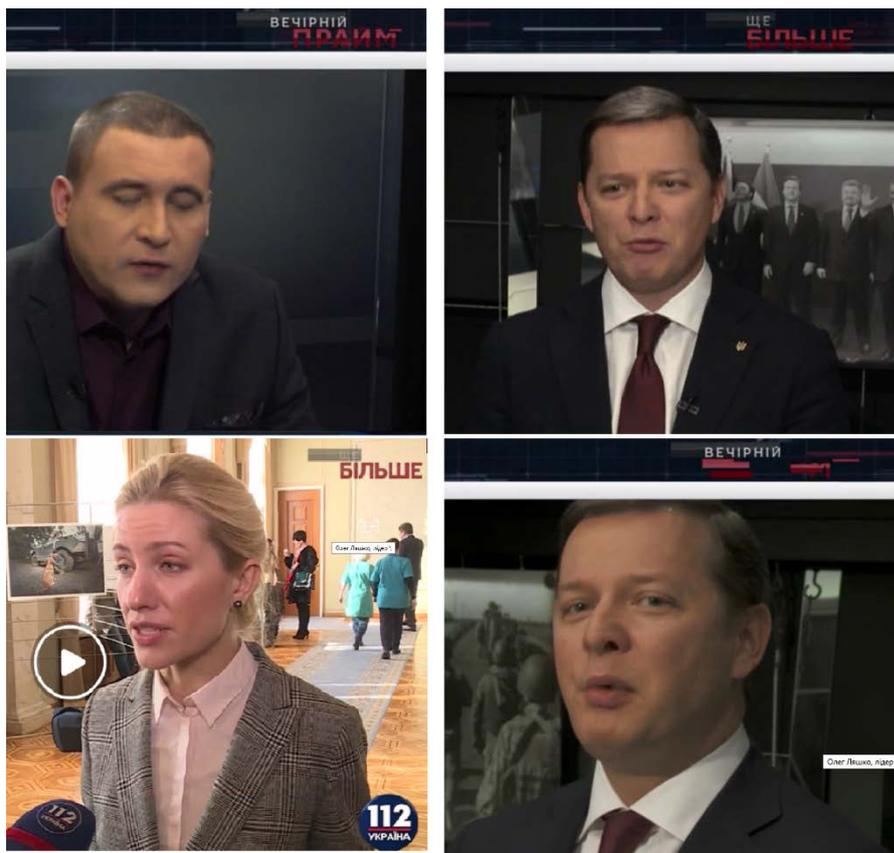


Figure 3

[From the TV channel “112 Ukrajina”]. Top left: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ after a vowel at the end of *мовляє* [mɔβ̞-ɫʲe'v] ‘say’ (Speaker MK). The lower lip is near the upper incisors, without lips rounding and protrusion that is characteristic to the labiodental fricative consonant [v].

Bottom left: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ between a vowel and a consonant in *лявся* [ɫɑ⁺-jɐβ̞-ɫʲe] ‘(he) cursed’ (Speaker SZ). The lip corners are pressed to the front teeth resulting in lips rounding without protrusion that is typical to a more rounded bilabial approximant [β̞].

Top right: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ between a back vowel and a consonant in *маєни* [mɑ⁺β̞-ɾə⁺] ‘of the monkey’ (Speaker OL). The lip corners are pressed to the front teeth while lips are approaching each other without rounding and protrusion, that is characteristic to a bilabial approximant [β].

Bottom right: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ after a vowel at the end of *купив* [kʊ-pʲi⁺β̞] ‘(he) bought’ (Speaker OL). The lip corners are pressed to the teeth resulting in lips rounding without noticeable protrusion that is typical to a more rounded bilabial approximant [β̞].



Figure 4

[From the TV channel “112 Ukrajina”]. Top: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ between a vowel and a consonant in *Левченко* [ɬɛˈβ̞ɔ-ʃɛ̞ˈɲ-kɔ] ‘Levchenko’ (Speaker EB). The lips are rounded without noticeable protrusion that is characteristic to a more rounded bilabial approximant [β̞ɔ].

Bottom: A visual representation (vizeme) of facial articulation of an accented vowel [u] in *Мельничук* ‘Meljnuchuk’ [mɛ̞ˈɲʲɪ-ɲʲɪˈʃuˈk] (Speaker EB). The lips are strongly rounded and protruded.

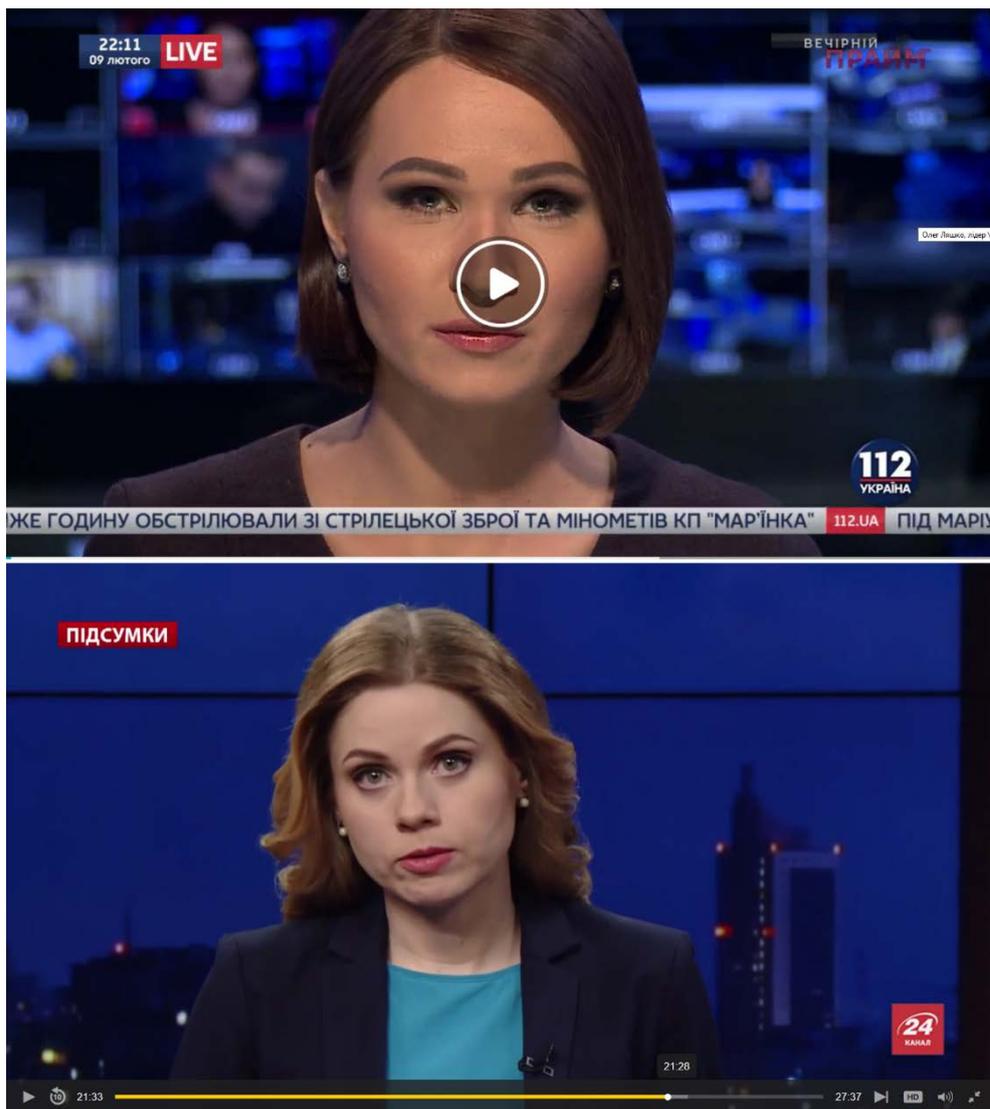


Figure 5

[From the TV channel “112 Ukrajina”]. Top: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ before a central vowel [ɐ] in *розірваного* [ro-zʲi'r-vɐ-ɲɔ-ɦo] ‘of the torn’ (Speaker EB). The lower lip is touching the upper incisors without lips rounding and protrusion that is characteristic to a labiodental fricative consonant [v].

Bottom: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ between a front vowel [i] and a consonant in *Рівне* [rʲi'β-ɲɔ+] ‘Rivne’ (Speaker KhS). A narrow constriction between the lips is formed without their rounding and protrusion that is typical for an unrounded bilabial fricative consonant [β].



Figure 6

[From the TV channel “24th channel”]. Top: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ between vowels in *зловили* [zʎo-v_i⁺-ɦ_i⁺] ‘(they) caught’ (Speaker KhS). The lower lip is touching the upper incisors without lips rounding and protrusion indicating a labiodental fricative consonant [v].

Bottom: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ after a back vowel at the end of *знав* [znα⁺β_ɤ] ‘(he) knew’ (Speaker KhS). The lips are slightly rounded that is characteristic to a less rounded bilabial approximant [β_ɤ].



Figure 7

[From the TV channel “24th channel”]. Top: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ between a vowel and a consonant in *Павло* [pɛv-ło'] ‘Pavlo’ (Speaker PR). The lips are not rounded indicating a labiodental fricative consonant [v].

Bottom: A visual representation (vizeme) of facial articulation of a stressed vowel [u] in *участь* [u'-ʃɛʂtʲ] ‘part’ (Speaker PR). The lips are strongly rounded and protruded.

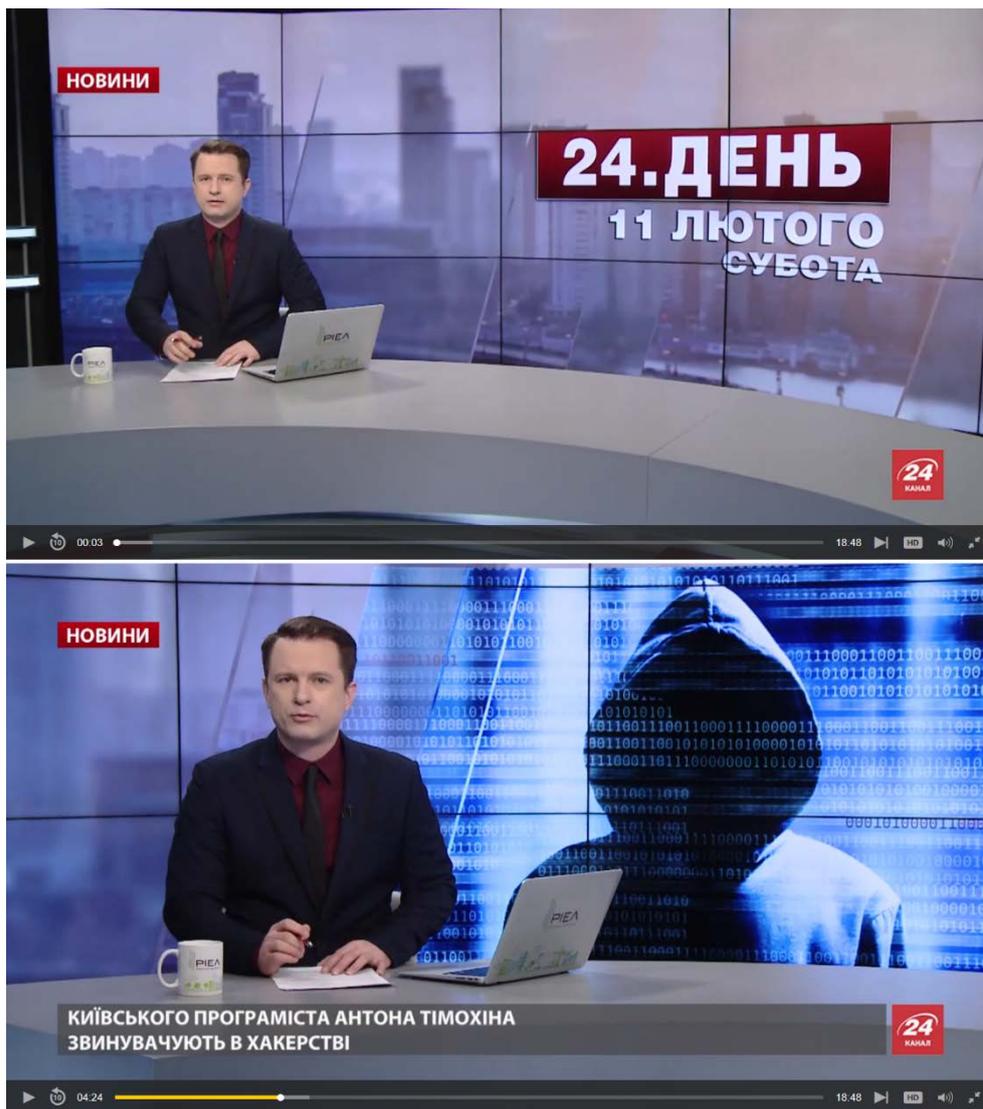


Figure 8

[From the TV channel “24th channel”]. Top: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ in intervocalic position in *труває* [trɔ⁺-va⁺-jɛ⁻] ‘is going on’ (Speaker PR). The lower lip is touching the upper incisors without lips rounding and protrusion indicating a labiodental fricative consonant [v].

Bottom: A visual representation (vizeme) of facial articulation of the Ukrainian phoneme /v/ between a vowel and a consonant in *активну* [ɛ-ktɪ⁺β̞-ɲɔ] ‘active’ (Speaker PR). The lip corners are slightly pressed to the teeth and a narrow constriction between slightly rounded lips is formed, that is characteristic to a less rounded bilabial approximant [β̞].

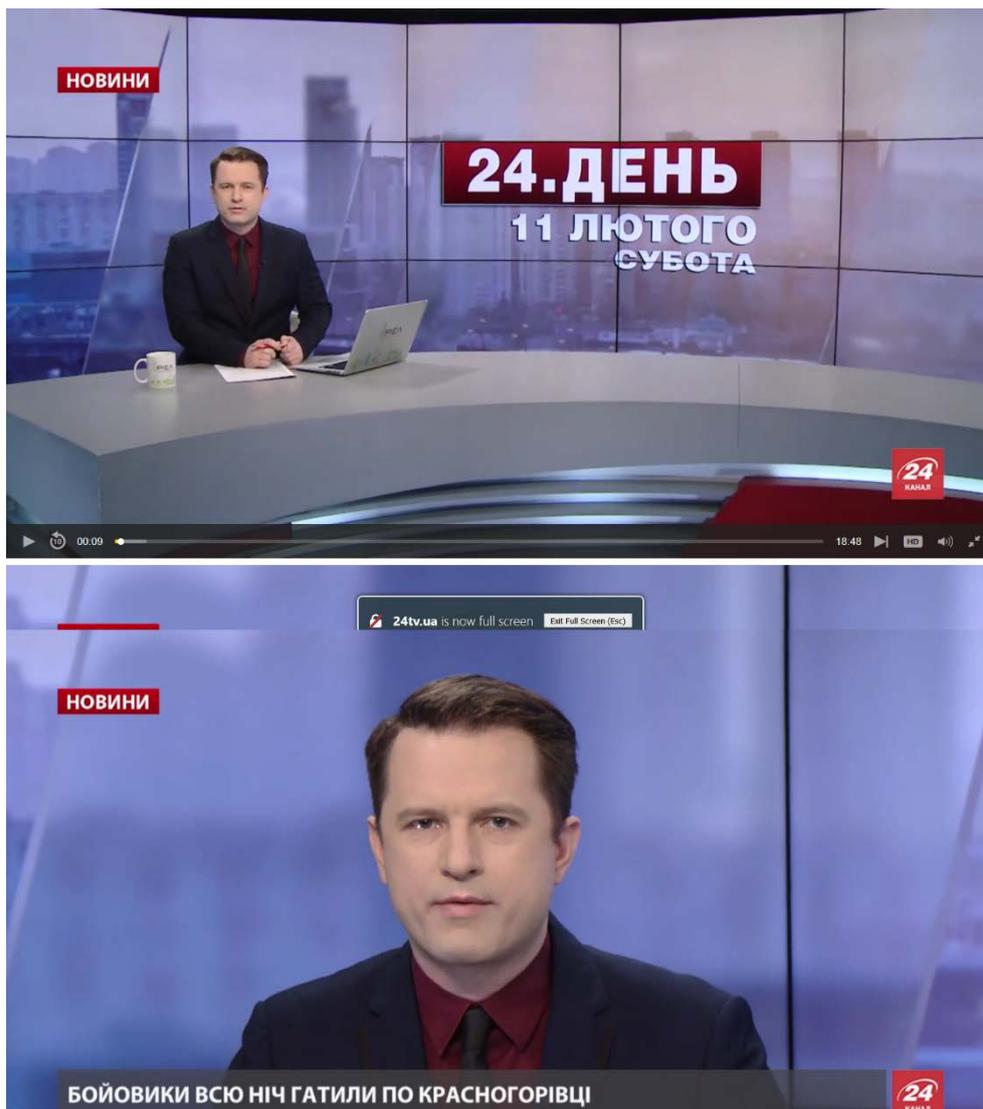


Figure 9

[From the TV channel “24th channel”]. Top: A visual representation (*vizeme*) of facial articulation of the Ukrainian phoneme /v/ after a front vowel [i] in the end of *журналістів* [ʒʊr-ɲɛ-ʎi'-sʎiβ] ‘of the journalists’ (Speaker PR). A narrow constriction between the lips is formed that is characteristic to an unrounded bilabial approximant [β].

Bottom: A visual representation (*vizeme*) of facial articulation of the Ukrainian phoneme /v/ between a high front vowel [i] and a consonant in *Красногорівка* [krɛ, -sʎo-ɦo'-rʎiv-kɛ,] ‘Krasnohorivka’ (Speaker PR). The lower lip is touching the upper incisors without lips rounding and protrusion, that is typical to a labiodental fricative consonant [v].

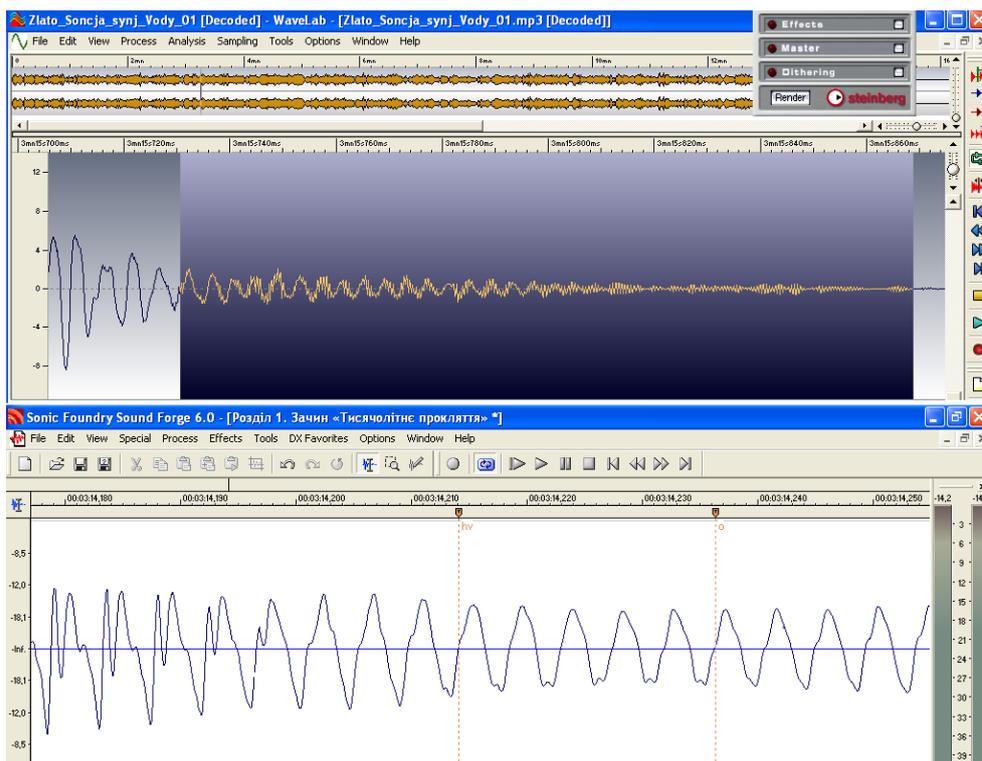


Figure 10

Oscillograms of different acoustic realizations of the Ukrainian phoneme /gh/ (Cyrillic /r/). Top: the end of *миг* [m'i'ɣ] ‘(he) could’. The pattern is characterized by a distinctive high-frequency noise component inherent to a partly devoiced velar fricative allophone [ɣ]. Bottom: intervocalic position in *нього* [rɯ'-ɦo] ‘him’. The prevalently harmonic character of the oscillogram without a noticeable noise component indicates a glottal sound [ɦ].

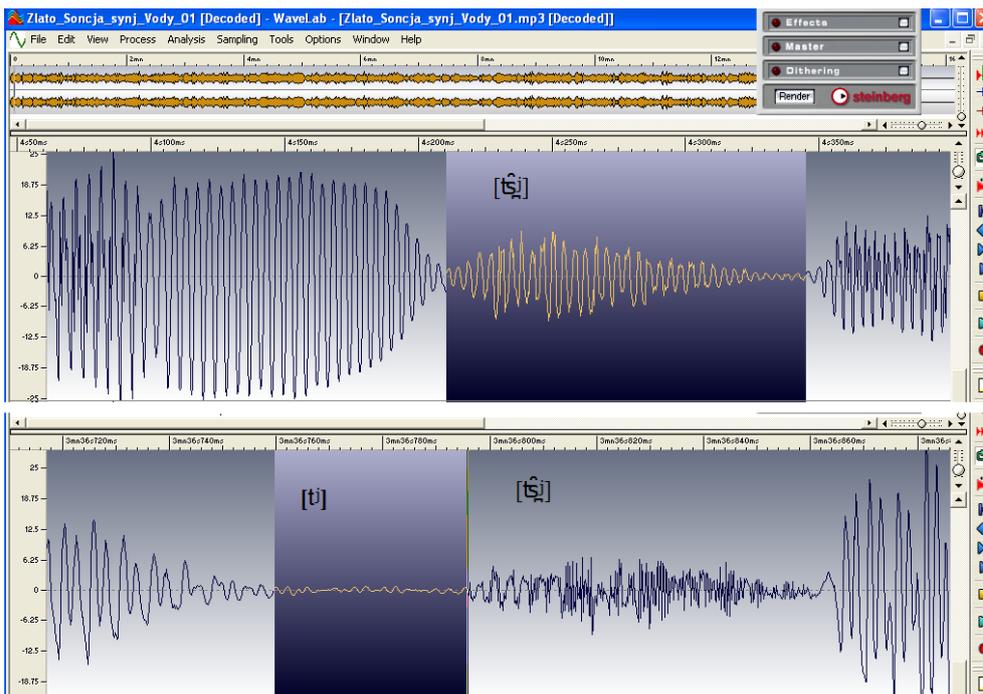


Figure 11

Oscillograms of an affricate [t͡ɕ] in *сонця* [sɔ̞'ɲ-t͡ɕɛ] 'of the sun' (top) and geminate affricate [t͡ɕ͡ɕ] in *хочеться* [xɔ̞'-t͡ɕ͡ɕ-t͡ɕɛ] 'is desired' (bottom).

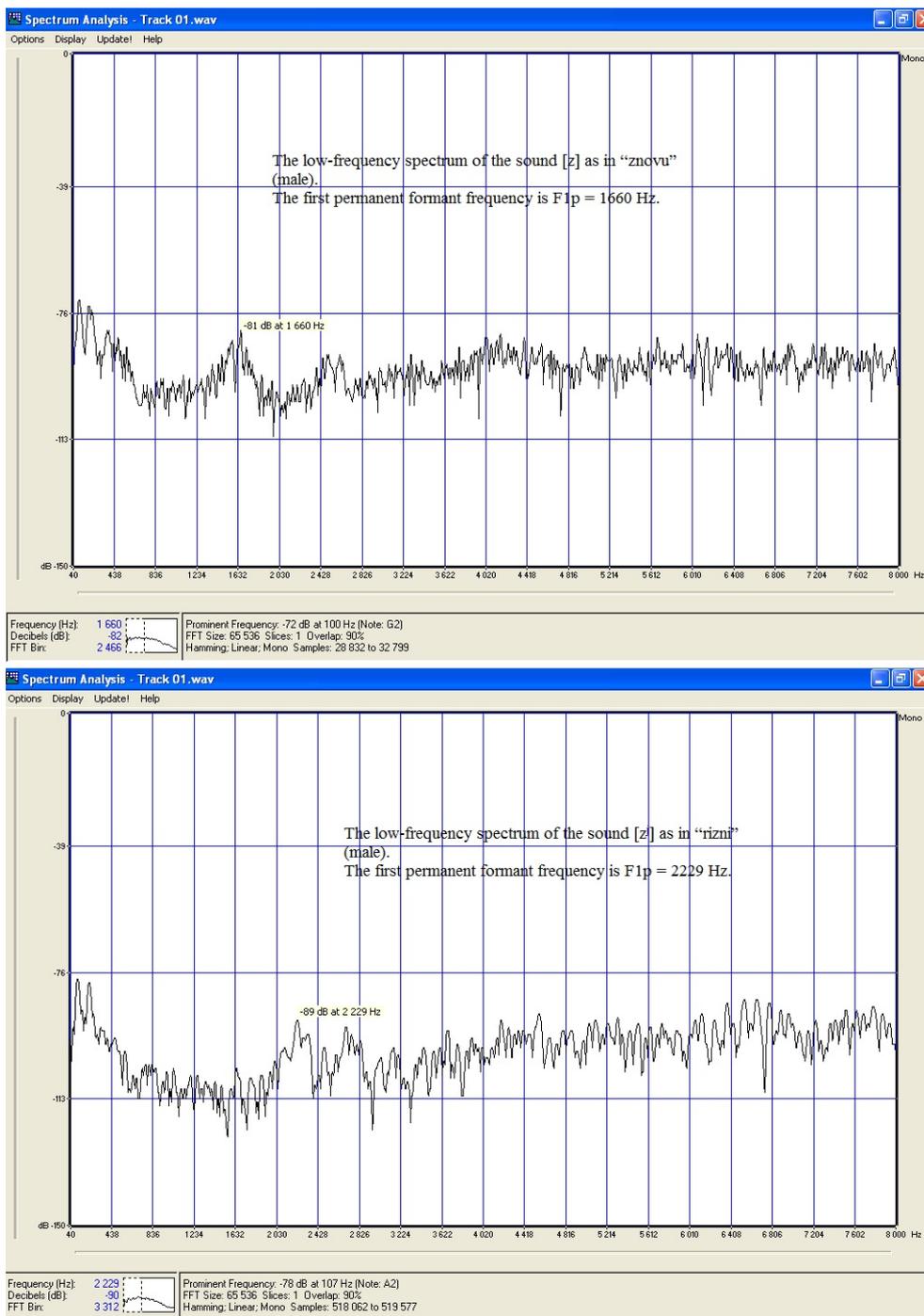


Figure 12

Low-frequency behaviour of the sound [z] as in *znovu* [znɔʷvʊ] ‘again’ (top) and [zʲ] as in *rizni* [rʲiʲ-zʲɪni] ‘different’ (bottom), speaker AZ (male). In the palatal environment, the first permanent formant moves up from the value of $F1p = 1660$ Hz to the value of $F1p = 2229$ Hz.