

## **PAUSES AND SPEECH RATE AS CORRELATES OF PERSUASIVENESS IN SERBIAN AND ENGLISH POLITICAL DISCOURSE**

**Abstract:** The aim of this paper is to examine the influence of pauses, speech rate and additional linguistic and extralinguistic factors on the perception of persuasiveness in Serbian and English political discourse by conducting a perception test and an acoustic analysis on 5 Serbian and 5 English tokens of political speech. To 124 participants taking part in the perception test, persuasive speakers rated high on expertise, eloquence, clear and accurate expression, charisma and ability to deliver an interesting speech. The results of our acoustic analysis showed a correlation between persuasiveness and pause duration as well as the dependence of this relationship on the location and type of syntactic structures. In addition, more persuasive speeches had a higher speech rate as well as regular and significant speech rate modulation within higher syntactic units. Certain interlingual differences in the use of the analysed prosodic elements were also noticed, which encourages further research in this area.

**Key words:** political discourse, Serbian, English, pauses, speech rate

### **1. Introduction**

Considering the prominence of political discourse in Serbia, the current linguistic interest in rhetorical and pragmatic aspects of political speech is not surprising as it is yet to be revealed what exactly makes a political speech more effective or persuasive. Although the success of political discourse cannot be ascribed solely to its prosodic characteristics, we can certainly say that, apart from its contents, semantics, and extra-linguistic factors such as the speaker's public image and political views, the way the speaker's message is conveyed significantly contributes to the overall impression made on the listeners, affecting their perception of the speech as either inexpressive, indecisive, and unintelligible, or, contrarily, as determined and persuasive. In this paper, written as part of the author's MA thesis, the possible relationship between pauses and speech rate as prosodic cues and the perceived persuasiveness of political speeches is the subject of perception and acoustic analyses of a selection of political narratives in the two languages.

In order to discover the connection between persuasiveness in speech and its prosodic characteristics and to point out the prosodic similarities and differences between the two languages and some possible reasons behind different perceptions

of persuasiveness, 124 first and second-year students of English language were asked to fill in a questionnaire after listening to a selection of 10 political speeches. They did so by rating the persuasiveness and 12 other characteristics of each speech on a 5-point Likert scale, preceded and followed by additional questions aimed at establishing the profile of each participant and his or her attitude towards domestic and foreign politics. This test, together with the acoustic analysis that followed, had the purpose of answering two research questions:

1. What are the characteristics pertaining to political speech that seem persuasive to a listener?
2. Which pause and speech rate characteristics can be related to persuasive political discourse?

## 2. Previous work

Pauses are an inevitable part of spontaneous connected speech, and as such they can be a manifestation of hesitation and insecurity, or a mark of syntactic boundaries. They signal turn shifts in conversations and can be used by skilled speakers and orators for emphasis of particular information or in order to keep the listener's attention. One can also notice longer pauses in spontaneous speech or shorter ones during read speeches. While pause duration also depends on factors such as speaker, speech rate, discourse, prosodic structure, phrase length, and syntax (Krivokapić, 2007: 164). According to Goldman-Eisler (1968), discontinuities in speech can appear due to articulatory phenomena, respiration and other „complex, multivariate and supersegmental“ (Zellner, 1994: 44) factors, which can determine whether listeners will perceive breaks in speech as pauses, especially since pauses can be silent or filled. The former type does not contain any attempts by the speaker to 'break the silence' and is usually the result of respiratory and articulatory processes, while the latter is voiced, and contains repetitions, fillers, repairs or „non-lexical vocalizations“ (Szczepek Reed, 2006: 8). While silent pauses can be either markers of syntactic units or a result of hesitation, filled pauses seem to have only the second function, whereby the speaker can „signal that he/she is not done speaking and ... prevent interruptions during the time required for building the next part of the speech.“ (Campione & Veronis, 2006: 43). In addition, Chafe (1980) explains that pauses also have a cognitive background and can, in fact, be attributed to „problems in conceptualization at major discourse boundaries“ (Swerts, 1998: 486), although the syntactic explanation, offered by Nespor & Vogel (1986), Selkirk (1981), Grosjean et al. (1979), Watson and Gibson (2004) and others, is just as valid. To these authors, the occurrence of pauses can usually (although not necessarily) be found at intonation phrase boundaries, even breaking up syntactic surface structures and behaving as a stable indicator of IP<sup>1</sup> location (Krivokapić, 2007: 164). Moreover, syntactic structure can also correlate with the duration of pauses, a point made by

<sup>1</sup> Intonational phrase

Strangert (1991), Cooper and Paccia-Cooper (1980), Grosjean et al. (1979), and Ferreira (1991) among others, who found pause length increasing between higher-level syntactic constituents.

Apart from these and similar studies, there has been research into the rhetorical function of pauses. In this respect, pauses have been connected to the level of speaker's certainty (Pon-Barry, 2008), hesitation and speaking skill (Strangert 2007; Strangert & Gustafson 2008), while studies of speaker charisma also reached the conclusion that non-fluent speech has a negative influence on the perception of charisma since it denotes a lack of preparation or confidence, which makes the speaker seem less skilful and persuasive (Biadsi et al. 2007). In addition, a study by Scherer et al. (1973) found a negative correlation between the number of pauses in speech and the perception of speaker's confidence.

However, the location of pauses may not depend on syntactic or prosodic structures alone, and different speech rates or articulation rates measuring the number of syllables uttered per second, with pauses included (speech rate) or excluded (articulation rate), can determine the necessity for making a break in speech. The variation in speech rate is not only related to the number of pauses, but as Miller et al. (1984) notes, can occur on its own, with differences between stressed and unstressed parts of speech. This way, important information is kept prominent and intelligible by reducing the speech rate (Lindblom, 1990), as talking too fast can reduce the intelligibility of the message thereby having a negative effect on the persuasiveness of narration. On the other hand, there is a possibility that too many pauses and too little spoken content can reduce the speaker's authority and make his narration less persuasive, which makes speech rate a potentially valuable source of information regarding spontaneous speech and differences in perception of speaker's persuasiveness.

### 3. Method

The audio material used in this study was extracted from speeches of 5 Serbian and 5 British politicians taking part in election debates in Serbia and Great Britain. The mean duration of the tokens was 25.9s, and the speakers discussing Serbian electoral system and demographic politics, British immigration policy were: Vuk Drašković (Serbian Renewal Movement), Tomislav Nikolić (Serbian Progressive Party), Nenad Čanak (League of Vojvodina's Social-Democrats), Rasim Ljajić (Social Democratic Party of Serbia) and Velimir Ilić (New Serbia), Gordon Brown and Jack Straw (Labour Party), David Cameron (Conservative Party) and Nick Clegg and Chris Huhne (Liberal Democrats). This particular selection was made for two reasons:

- The speakers had to be of the same gender in order to avoid the prosodic differences between male and female speakers
- The speaking style of each politician had to contain different uses of prosodic and other linguistic cues, to ensure variability among the speakers.



The research was carried out with 124, predominantly female (81.4%), first and second-year students of English at the Faculty of Philosophy in Niš. They were asked to rate their agreement with 13 statements related to each of the 10 played speech samples on a 5-point Likert scale, followed by two dichotomous closed-set questions about possible speaker recognition and difficulties in understanding the content of the token in question. In addition to the first of the two questions, the students were given a contingency task of naming the speaker they recognized, provided their previous answer was affirmative. Relying on Rosenberg & Hirshberg's (2009) set of 23 statements used in their research of speaker's charisma, ten statements were based on the template „The speaker is X“, where X was an item from a set of adjectives including: passionate, charismatic, determined, boring, sincere, eloquent, interesting, persuasive, angry and enthusiastic. The additional three statements were: „The speaker is an expert on the topic he is discussing“, „I agree with the speaker“ and „The speaker's expression is clear and accurate“. After completing the questionnaire, the participants were instructed to listen carefully to randomized recordings and complete the section of the questionnaire related to the particular speech token while the same token was repeated 3 more times with 5□10s pauses between iterations.

The questionnaire allowed us to find a correlation between the persuasiveness grades given to each individual speaker and the traits most associated with them. By understanding this correlation, we aimed to further corroborate the findings with the acoustic tests, which included the analysis of global pause and speech rate characteristics of all 10 tokens and a comparative analysis of the four most and least persuasive speeches in both languages performed in Praat (Boersma&Weenink, 2010), in which pause and speech rate properties were observed in terms of their variation within the respective tokens.

## 4. Research

### 4.1. Perception test

Excluding from our analysis the answers given by participants who reported their political affiliation and/or hearing difficulties, as well as those who reported having trouble understanding the content of the tokens that were played revealed that neither the age nor the ESL experience of the participants had a significant effect on their rating of persuasiveness (Figures 1 and 2). Both generations mostly agreed in their grading of persuasiveness, with the difference ranging between 0.24 and 0.51 for speakers 3, 4 and 10. The token on which the two groups disagreed most was number 5, where the disagreement was 0.58. Furthermore, pertaining to differences in grading between genders, we noticed that the rating of female participants was more varied than that of male participants, who gave (almost) identical grades to speakers 4, 5, 6 and 9.

We also wondered how the participants' interest in politics affected the recognition of speakers. From what we can draw from Figures 1 and 2 we can see that,

while all speeches were comprehensible, only Serbian speakers were recognizable to our participants, with the exception of British Speaker 6, who was recognized by only 2% of graders. While the recognition rate of Serbian speakers was much higher (mean 54.4%), there are significant differences between the recognition rates of individual speakers. These numbers ranged from only 8% for the most persuasive Serbian Speaker 2 (Figure 1), to 83% for the least persuasive Speaker 10.

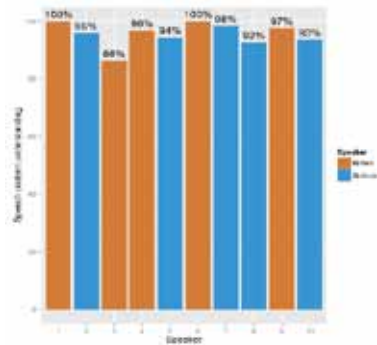
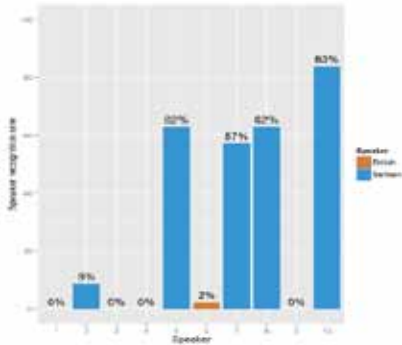


Figure 1 – Speaker recognition

Figure 2 – Speech content understanding

This, unfortunately, suggests that the recognition of Serbian speakers may have influenced the choice of persuasive speakers, as our participants negatively reacted to the recognizable voice of Speaker 10, and positively to the unfamiliar voice of Speaker 2. A similar observation can be made about the relationship between the interest in politics and speaker recognition. Since only Speaker 6 among English-speaking politicians was recognized, he is the only one whose grade we were able to correlate with the interest in politics, and the correlation in this case is significant ( $r = .227^*$ , Sig (2-tailed) = .011). While the direct effect of interest in politics on persuasiveness rating was mostly low, its relationship with speaker recognition was high, especially for speakers 5 (.532\*\*) and 8 (.608\*\*), suggesting that those better acquainted with Serbian politics found it easier to recognize these 2 speakers, while this was not as significant for recognizing Speaker 10 (.334\*\*), or for (not) recognizing Speaker 2 (.330\*\*).

	1	2	3	4	5	6	7	8	9	10
Sin	.228*	.330***	.356***	.131	.431***	.465***	.391***	.445***	.072	.437***
	.012	.000	.000	.150	.000	.000	.000	.000	.426	.000
Det	.230*	.284**	.308***	.291**	.498***	.460***	.497***	.346***	.280**	.550***
	.011	.002	.000	.001	.000	.000	.000	.000	.002	.000
Cha	.183*	.237**	.434***	.357***	.505***	.484***	.557***	.411***	.293**	.490***
	.045	.008	.000	.000	.000	.000	.000	.000	.001	.000
Pas	.377***	.270**	.414***	.289**	.300**	.442***	.456***	.344***	.397***	.464***
	.000	.002	.000	.001	.001	.000	.000	.000	.000	.000
Ent	.320***	.151	.405***	.233**	.342***	.476***	.457***	.334***	.229*	.451***
	.000	.096	.000	.009	.000	.000	.000	.000	.011	.000

Int	.291**	.371***	.469***	.426***	.477***	.447***	.502***	.582***	.395***	.495***
	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
Cla	.208*	.334***	.452***	.350***	.362***	.345***	.538***	.449***	.284**	.390***
	.022	.000	.000	.000	.000	.000	.000	.000	.001	.000
Bor	-.252**	-.257**	-.220*	-.271**	-.173	-.402***	-.366***	-.403***	-.301**	-.334***
	.005	.004	.014	.003	.055	.000	.000	.000	.001	.000
Agr	.099	.281**	.360***	.352***	.544***	.443***	.460***	.293**	.036	.545***
	.285	.002	.000	.000	.000	.000	.000	.001	.689	.000
Eloq	.248**	.471***	.458***	.404***	.500***	.351***	.494***	.468***	.313***	.420***
	.006	.000	.000	.000	.000	.000	.000	.000	.000	.000
Ang	-.085	.138	-.037	.014	-.024	-.089	.334***	.293**	.117	.181*
	.352	.126	.686	.880	.792	.328	.000	.001	.197	.044
Exp	.498***	.555***	.399***	.457***	.604***	.411***	.643***	.534***	.287**	.428***
	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000

*Table 1 - Persuasiveness correlation chart*

We should also mention that, while speaker recognition was seen as influential in persuasiveness rating, which made us wonder whether our participants already had strong opinions in favour or against a few of our speakers, some of the characteristics which we tested, notably sincerity and agreement with the speaker, which in our opinion can be tied to such preconceptions, did not result in inter-speaker variation significant enough to strongly support such a claim.

The results of the perception tests also revealed which speakers were considered by our participants to be more or less persuasive. The most persuasive speaker was British Speaker 6, with a mean persuasiveness grade of 4.04, followed by another two British politicians. The best-rated Serbian speaker was Speaker 2, ranked fourth with a mean grade of 3.62, while the least persuasive one was Speaker 10, also Serbian (mean 2.58). Even though British speakers received comparatively better ratings than Serbian speakers, the least persuasive British speaker was the second least persuasive overall, with a mean grade of 2.75.

To determine which of the additional 12 traits were most related to persuasiveness grades, we correlated these ratings (Table 1) and found that most correlations were significant. Correlation coefficients and their significance varied from speaker to speaker, but in most cases, the perceived expertise of the speaker, eloquence, clear and accurate expression, charisma and how interesting the speaker seemed to our participants were the main correlates of their persuasiveness. Speaker's anger did not usually correlate significantly, except for speakers 7, 8 and 10 (all Serbian), while sounding boring negatively correlated with persuasiveness, as could be expected.

In the following section, an acoustic analysis of global pause and speech rate cues will be performed on all 10 speeches, followed by a more detailed analysis of the two most (one Serbian and one British) and the two least persuasive speeches (again, one Serbian and one British), with special emphasis on the placement and modulation of said prosodic cues.

## 4.2. Acoustic analysis

### 4.2.1. Global characteristics

While we must bear in mind that the selected samples had a duration range of 20 to 30s, and that the topics and the speech content varied from speaker to speaker, meaning that we could not directly relate their variation to any of the speakers' general speaking style nor linguistic differences, the effect of pause and speech rate variables on the participants' grading of their persuasiveness could still be observed. Even though there was no statistically significant correlation with persuasiveness, we did notice that the two selected Serbian speakers had higher speech and articulation rates than the two English speakers (by mean 2.37 syl/s). When the remaining speakers were included, only articulation rate showed a more significant difference between the two languages (6.16 syl/s for Serbian and 5.53 syl/s for English speakers). However, what is interesting is the fact that the correlation between persuasiveness and speech rate with pauses included was twice as high as the one with articulation rate, suggesting that the use of pauses is an important factor in the perception of persuasiveness.

Bearing in mind that the minimum length required for pauses to be counted as such in this part of the study was set at 0.2s, we collected data concerning their number and duration, showing that, while the chosen Serbian speakers made fewer pauses in total, they also made twice as many filled pauses. Negative correlation was found for the number of pauses and their duration total, but these values did not reach significance. In relation to this, we should point out that it was speakers 3, 5, 7 and 10, having the highest total number of pauses and the longest duration of pauses, who received the lowest scores on persuasiveness. Also worth pointing out is the fact that of these four speakers, 3 were Serbian, while the top two Serbian speakers both made fewer than 10 pauses. These findings, however, do not provide conclusive answers to our research questions and additional information is needed from a more detailed comparative analysis.

### 4.2.2. Comparative analysis

In the second part of our acoustic analysis, the speech rate of the four most and least persuasive speech samples were examined in terms of its modulation over time, in separate TUs and utterances. What Figure 3 shows is that all four of our speakers had different ways of changing the tempo of their speeches, although we cannot entirely ascribe this to their speech style, but to differences in speech content and structure as well. Speaker 2 had a much higher speech rate than other speakers, even with the highest speech rate standard deviation (1.69) among them. However, we can notice three changes in his speech rate. The first is a gradual increase towards the 8<sup>th</sup> TU, which corresponds to the introductory part of his speech, and his explanation of the situation that he wants to discuss.

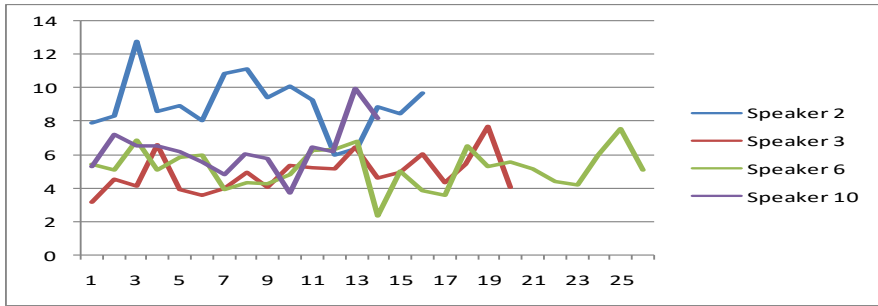


Figure 3 – Speech rate change by tone unit

It peaks with a rhetorical question in the 8<sup>th</sup> TU, after which a decline in speech rate follows, during which the speaker answers the question. With Speaker 10, we can observe one longer decline up to TU 10, which marks the end of the first part of the narration, and a consequent increase in speech rate up to the end of the token. However, the rise in speech rate towards the end of the speech seemed to relate only to our Serbian speakers, while the British speakers had a more level speech rate modulation, supported by lower standard deviation. With Speaker 3 we could notice an initial acceleration in tempo in the introductory part of the speech, followed by a drop in speech rate as the speaker introduces an example, and again an increase to TU 10 at the beginning of the third part of the narrative. In this part he asks questions in order to supply a short answer at the end, doing so by raising and lowering his speech rate at relatively regular intervals and ending with a low-tempo TU giving an answer to the previously raised questions.

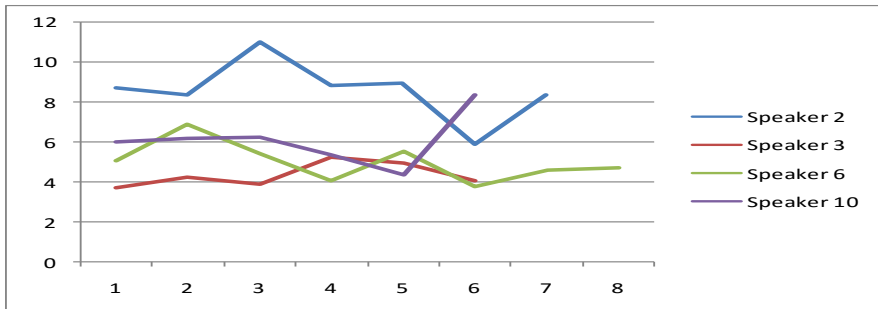


Figure 4 – Speech rate change by utterance

Finally, for Speaker 6, our most persuasive speaker, Figure 3 shows a contour similar to the one we had for Speaker 3. Here we can also observe an introductory rise, followed by a period of lower speech rate, and a period of consecutively rising and falling speech rate, but with a gradual rise towards the end. However, for a better view of the differences between these two speech samples, Figure 4 shows the progression of speech rate through narratives in terms of utterances. Here it is much more obvious that Speaker 6 varied his speech rate more frequently and significantly



than Speaker 3, choosing sentences as the main units for carrying these changes. Moreover, these changes form a very clear recurring pattern, something even our most persuasive Serbian speaker lacks, even though he too exhibited more dynamic changes in speech rate than the least persuasive Speaker 10.

Pertaining to the issue of pauses, the first set of data showed us the difference between samples with a low number of pauses and those with a longer duration of some of their breaks in speech. In Figure 5 we can see the difference between the two least persuasive speakers, as one had a greater number of shorter pauses, while the other had fewer, but longer pauses, 4 of them longer than 0.5s. However, while our previous analyses already showed the effect of the number of pauses on persuasiveness, the effect of their individual duration is yet to be tested. This is supported by the fact that for all three tokens in Figure 5 that had pauses longer than 0.5s, most or all pauses were markers of sentence boundaries.

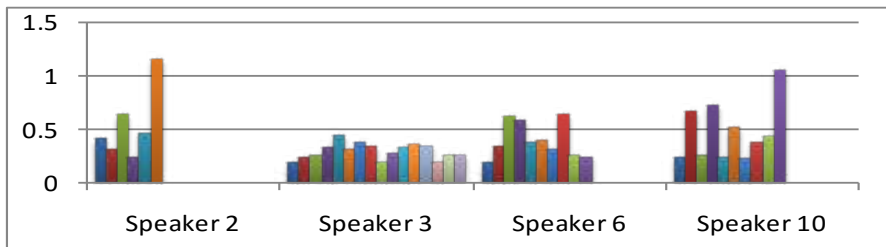


Figure 5 – Individual pause duration by token

However, only one of these, belonging to Speaker 2, can be said to be emphatic. We decided to further examine these differences by dividing both silent and filled pauses into those that occurred at sentence, clause and phrase boundaries and those that appeared within a phrase, which we judge most likely to signal hesitation or unpreparedness. Because all four speeches were of different length and content, we could not merely observe their number and duration, but rather the portion of each of these types in the overall number and duration of pauses of these speech samples.

To do this, we established four possible types of pauses, according to their syntactic location (sentence, clause and phrase-boundary together with mid-phrase pauses), and analysed them in terms of average duration, percentage in the number of pauses in that speech token and the percentage in the total duration of pauses in each speech token. While at first glance we could notice that the longer duration and a greater number of sentence breaks occur in more persuasive speech, and that more frequent pausing within sentences occurred in less persuasive speech, we still wanted to check for correlation between these findings and persuasiveness ratings.

Even though the small number of units meant less chance of finding statistically significant correlation, five variables gave us high correlation, starting with the positive correlation of the percentage of the number (.654) and duration (.723) of sentence-boundary pauses, negative correlation of the percentage of the number of phrase-boundary pauses (-.748), and, quite expectedly, the average duration (-.860)

and duration percentage (-.738) of mid-phrase pauses, which, alongside filled pauses, can be seen as good correlates of uncertainty, hesitation and error-making.

Finally, as we have analysed the effects of filled and silent pauses and their different positions in speech, we are able to say that pausing in speech seems to be a stable indicator of speaking skills, with different types of pauses having different meanings to the listeners, ranging from emphasis to hesitation.

## 5. Conclusion

In this paper, aimed at answering three questions about the prosodic characteristics of persuasive political discourse in Serbian and English, two types of tests were performed with the intention of finding a correlation between persuasiveness and the 12 attributes selected for the questionnaire and acoustic correlates of persuasiveness in pause and speech rate properties. We found that most of the 12 attributes had a high correlation with persuasiveness, but the perceived expertise of the speaker, eloquence, clear and accurate expression, charisma and being interesting to the listeners were for most speakers the main correlates of their persuasiveness.

Once we established which of the traits influenced the persuasiveness of the speakers, an acoustic analysis of global characteristics was performed on all 10 tokens, followed by a more detailed analysis of the most and least persuasive ones. The modulation of speech rate on the sentence level and the use of sentence-boundary pauses showed a positive effect on perceived persuasiveness, while the portion of phrase-boundary and mid-phrase pauses in the overall number and duration of pauses had a significant negative effect on the same perceived attribute, while sentence-boundary pauses had a positive effect on perceived persuasiveness. In the end, these results also allowed us to note certain differences between English and Serbian speeches, most importantly the greater articulation rate and pause duration of the latter group.

However, even though our results did confirm our main premise that we can find a connection between persuasive speech and prosodic supra-segmentals, we must not go so far as to assume that the research was completely independent of semantic and extra-linguistic factors involved in the production of public speech. Although different steps were taken to ensure that the differences in speech content and speaker's attitudes did not interfere with the results of our study, and the results of the perception analysis gave us reason to believe that we have successfully addressed these issues, we cannot be entirely certain that the opinions our participants had of different politicians did not affect their judgment of speakers' persuasiveness and other personal and speech characteristics.

Nevertheless, while this problem may be difficult to tackle, especially in a setting where politics and politicians seem to occupy a great deal of public and media attention, making any objective assessment of political speech difficult to produce, it is because of this fact that studies of this type of discourse should be undertaken because they can reveal a great deal of information about the way spontaneous speech is structured and used in different, but pervasive social contexts.

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## **PAUZE I TEMPO GOVORA KAO KORELATI UBEDLJIVOSTI U SRPSKOM I ENGLISKOM POLITIČKOM DISKURSU**

### Rezime

Cilj ovog rada je da ispita uticaj pauza, tempa govora i dodatnih lingvističkih i ekstralingvističkih faktora na percepciju ubedljivosti u srpskom i engleskom političkom diskursu sprovodeći test percepcije i akustičku analizu 5 srpskih i 5 engleskih isečaka političkih govora. Ukupno 124 ispitanika su na testu percepcije ubedljivim govornicima dala visoke ocene za stručnost, elokvenciju, jasno i precizno izražavanje, harizmu i zanimljivost. Rezultatima akustičke analize utvrđena je korelacija između ubedljivosti i trajanja pauza, ali i zavisnost ovog odnosa od položaja i tipa sintaksičkih struktura. Pored toga, ubedljiviji govori su se odlikovali i bržim tempom, kao i njegovim redovnim i značajnim promenama u okviru viših sintaksičkih celina. Pored ovoga, primećene su i interlingvalne razlike u upotrebi analiziranih prozodijskih elemenata, što podstiče dalja istraživanja na ovom polju.

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