

**From:** Gerry Docherty (Journal of Phonetics ) EviseSupport@elsevier.com  
**Subject:** Your manuscript, PHONETICS\_2017\_139, has not been accepted  
**Date:** 19 March 2018 at 00:45  
**To:** stefano.coretta@manchester.ac.uk



Ref: PHONETICS\_2017\_139

Title: The link between tongue root advancement and the voicing effect: an ultrasound study of Italian and Polish  
Journal: Journal of Phonetics

Dear Stefano,

Many thanks for submitting to Journal of Phonetics your paper entitled “The link between tongue root advancement and the voicing effect: an ultrasound study of Italian and Polish” (PHON\_2017\_139). Please accept my apologies for the time that it has taken to respond to you.

I have now received two reports from anonymous reviewers. Reviewer 1 (R1) notes that the topic of this work is very interesting and is positive about the overall approach of connecting articulatory and acoustic data, but also raises a number of issues that go to the core of the contribution that you are seeking to make. Overall, R1 judges that the manuscript could only be acceptable for publication following a round of major revisions. Likewise, while noting that the principal question that you pose in this study is novel and interesting, Reviewer 2 (R2) expresses some significant reservations about the study as it stands, and recommends that the submission should be rejected. You will see that both reviewers have a number of points of substance, with both highlighting what they see as an inadequate explanation of what might be the basis for any connection between vowel lengthening and advancement of the tongue root. Both also have reservations relating to aspects of the design of the study, the interpretation of the findings, and the level of detail provided re: the methodology.

In light of the reviewers' comments, I'm sorry to say that I'm going to have to reject the current manuscript as a submission to the VOT special issue. However, if you feel that the critique in the reviewers' reports can be satisfactorily addressed, I would invite you to revise the paper and submit it to Journal of Phonetics in due course as a new submission. If you choose to do this, please cite the reference number of the current paper and please also submit a covering letter specifying how you have addressed the reviewers' comments.

Many thanks again for your submission to the special issue. I'm sorry that this is not the outcome that you would have been hoping for. I hope you find the reviewers' comments helpful, and I wish you best of luck in pursuing this line of investigation.

With best regards,

Gerry Docherty

Guest Editor (Journal of Phonetics)

**Comments from the editors and reviewers:**

-Reviewer 1

This is a very interesting paper that examines articulatory correlates (tongue root advancement) of voicing and how it affects the vowel duration. This paper has the possibility to be extended to other languages and if the author eventually finds the sufficient empirical data on how tongue root advancement is related to vowel duration, there may be implications for language change. Finding a connection between acoustic and articulatory data is a good approach for this paper.

However, there is a gap between the results shown here and the arguments the author makes, and more data (more speakers, front vowels, etc..) is necessary to support the main claim of this paper. The main argument of the paper—how tongue root advancement affects the vowel duration—is not very convincing and too strong based on the data shown here because:

(1) it lacks an explanation on how tongue root advancement and vowel duration can be actually related. If it's difficult to find the plausible connection between them, at least some possibilities should be mentioned. The author argues that "a possible source of the longer duration of vowels before voiced consonants could therefore be the additional time required to achieve tongue root advancement in the context of voiced stops." I think this part is very important, but this may be the case with back vowels but not necessarily with front vowels.

(2) Also, the result itself is not very convincing, because speakers show a lot of variation and there are other possible articulatory gestures that are used for voicing (e.g. Solé 2010), which is not discussed in this paper. If the paper doesn't explain the clear relation between tongue root advancement and vowel duration, at least empirical data should show a clear correlation between them (so that one can know that is a fact and start to think why from there). I don't see either of them in this paper, yet.

The author mainly focuses on vowels followed by voiced/voiceless stops, but I wonder if the author can posit any implications for vowels after voiced/voiceless stops. Another possible affect tongue root advancement can have on adjacent vowels is lower-spectral energy, for example,  $f_0$  or  $F_1$  of the following/preceding vowels (Kingston and Diehl 1994). I want to see some discussion on that as well, especially since Kingston et al. (1997) argues that ATR can be related to a lowered  $F_1$ .

It's also worth mentioning that the tongue root advancement difference between voiced-voiceless stops is found in languages like English (e.g. Westbury) and German as well, and people argue that there is no voicing during closure in these languages. It may not be a problem if the discussion is limited to post-vocalic stops, but at least a mention of the initial-position for this language is appropriate. Also, if paper(s) exist that use the method used here (i.e. ultrasound) to see the tongue root advancement for voiced stops, that should be mentioned.

The method section is a bit difficult to follow because it's sometimes too technical. Please add more details. Also, I'd like to see ultrasonic data plots for both vowels (/a/ and /o/). Also, release burst duration of the initial consonant /p/ should be reported for each language. Some tables/figures are placed in the position too far from the text, making it confusing to see those tables/figures, so this formatting issue should be addressed.

In sum, this paper has potential to contribute to the field, but either (1) more discussion and background information or (2) more data (esp. other vowels) should be provided to make the argument more convincing.

#### Some detailed comments are as follows:

##### Introduction:

In the introduction, more background on 'voicing effect' will be needed. For example, show how Polish data did not show the voicing effect in previous literature in more detail.

Line 52 (left): Korean—how can Korean be related to voicing effects when Korean is known to not have voiced stops? Does it mean plain stops in intervocalic positions?

Line 40 (right): I don't quite follow the argument the author makes with Kluender et al.'s (1988) research and Fowler's (1992) perceptual experiment. How does vowel duration affect closure-duration perception in Kluender et al.'s paper?

Line 92 (left): "The ability to lower the supra-glottal air pressure by advancing the tongue root is put to a different use in Korean, where it facilitates the maintenance of short lag VOT in tense stops"—this should be similar in English (since English does not have voicing in initial position), not only in Korean. Although languages differ in acoustic realizations of voiced stops-- either voicing or short-lag VOT, the difference may come from a similar reason-- to have a lower supra-glottal air pressure. Also, how short-lag VOT may need a larger cavity volume was brought up by Cho and Ladefoged (1999).



Line 77 (right): /lada/ vs. /lata/ example: underline the target vowels; same for the /rada/ vs. /rata/ examples.

### Methodology:



2.1 Participants: be more specific about the compensation (how much did they receive?)



Figure1: Great. How about the head stabilization?



2.3 Stimuli: I wonder if it would have been better if the vowel-initial words were used. At least they were controlled (all voiceless labial stops), I wonder if there is any effect of co-articulation (having voiceless stops there).



Line 158 (left): "Only coronal and velar stops were used as target consonants since labial consonants cannot be imaged with ultrasonography." —I don't understand this part. Labial consonants can be imaged, especially if there's a distinction between /b/ vs. /p/. It's just that the place of articulation cannot be seen (of course).



2.4. Procedure: Too technical for the readers who don't use ultrasound. For example, 'The participants' occlusal plane was obtained using a bite plate'—what does it mean? Also, the ranges of settings and why and how frame rates differed should be explained in more detail.



2.5. Data Processing and Analysis: Likewise, too technical for the readers who don't use ultrasound. Mielke (2015) argues the using the Cartesian coordinates of the tongue contour may not be ideal for measuring the root of the tongue using ultrasound. I think it is worth mentioning here.

### 3. Results



Did /u/ show poor quality for all speakers? If that's the case, the acoustic data should be excluded altogether, or at least show the model without /u/.



Also, provide the figures with /o/ as well. I assume the results for /o/ are not exactly the same as the /a/, so it should be shown in addition to /a/.



Figure 2: It's confusing that Polish speakers start with 02 not 01. Was there any particular reason for this? Also, figure 2 is too far from the paragraph that mentions this.



Line 258 (right): "The ultrasonic data also showed that the tongue body was raised in speakers with tongue root advancement."—Although I agree that tongue root advancement and tongue body raising is related, I don't really see this with the plots (esp. PL05). Also, how about stops following /u/ vowels?

### 4. Discussion



A difference in 8 milliseconds seems quite small (compared to Italian), so I'm not sure how much we can conclude from the data we have in the current study. I especially want to see the statistical model without /u/.



More data should be collected from other languages or more speakers to support the relation between advanced tongue root and vowel duration. To me, it's not clear how those two are related.



Also, it is not surprising that some speakers didn't show tongue root advancement for voiced stops because tongue root advancement is not the only articulatory gesture that can be used for voicing. There are other gestures (e.g. tongue body lowering, nasal air flow leakage, etc...) that should be considered. Of course, this paper alone cannot account for all those gestures. but at least it's worth including in the discussion.



Line 395 (right): “Tongue root advancement as an oral gesture does not need discussion, since it involves a lingual articulation.” — I don’t quite get this part.



Line 400 (right) “a possible source of the longer duration of vowels before voiced consonants could therefore be the additional time required to achieve tongue root advancement in the context of voiced stops.” -- I think this part is very important in this paper, but how about front vowel vs. back vowels? The author is only looking at back vowels, so it may be the case, but how about vowels like /i/? If the vowel is already front, one would expect to see the opposite effect—i.e. speakers need more time to **retract** the tongue root.

#### **-Reviewer 2**

- See attached review

#### **Have questions or need assistance?**

For further assistance, please visit our [Customer Support](#) site. Here you can search for solutions on a range of topics, find answers to frequently asked questions, and learn more about EVISE® via interactive tutorials. You can also talk 24/5 to our customer support team by phone and 24/7 by live chat and email.

-----  
Copyright © 2018 Elsevier B.V. | [Privacy Policy](#)

Elsevier B.V., Radarweg 29, 1043 NX Amsterdam, The Netherlands, Reg. No. 33156677.

