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Are we equally accented in our L2 and L3? Predictors of foreign accentedness and comprehensibility in two non-native languages

Research in foreign language acquisition has mostly focused on the perception of one non-native language (be it L2 or L3) (e.g., Munro & Derwing 1994, Lloyd-Smith 2021, Wesołek et al. 2023, Wrembel et al. 2023); however, no investigation to date has explored two non-native languages in the same group of multilingual speakers. In previous studies, heritage speakers were generally found to sound more native-like than L2 learners (e.g., Kim et al. 2023), yet accent ratings have not so far attempted to differentiate between L2/L3 learners acquiring their foreign languages in instructed vs. naturalistic settings.

To bridge this gap, we aim to investigate perceived accentedness, comprehensibility and ability to identify the speakers' native language in L2 English and L3/L*n* Norwegian speech samples of two groups of L1 Polish speakers. Our main objective was to investigate whether the presence of grammatical errors, the speaking mode (read vs. extemporaneous) and the type of exposure (naturalistic vs. instructed setting) affect the perceived global accent in L2 English and L3/L*n* Norwegian learners.

The L1 Polish participants (mean age=28.6, AoA_{EN}=8.4, AoA_{NOR}=23.7; 15 females, 4 males, 1 non-binary person) were recorded reading the text "The North Wind and the Sun" and retelling a picture story (MAIN; Gagarina et al. 2019) in English and Norwegian. The procedure was conducted in two separate language blocks in two different settings (1) amongst students of Norwegian studies at a Polish university, (2) amongst Polish speakers residing in Norway. They also performed Norwegian and English proficiency tests and completed the Language History Questionnaire (Li et al. 2020). Out of a larger pool, we selected 20 participants (10 instructed and 10 naturalistic). A full set of carefully chosen speech samples for each of two language blocks (L2 English and L3/L*n* Norwegian) included (sentence-long utterances featuring): 20 read sentences, 20 grammatically correct spoken sentences and 20 ungrammatical spoken sentences. Additionally, samples of 10 control participants were included featuring 5 natives (English or Norwegian respectively) and 5 non-natives with different L1 backgrounds. In total, the two rating studies consisted of 80 speech samples each, of approximately 10 secs extracted from the recordings and normalized for loudness. They were pseudorandomized to avoid the same speaker occurring in consecutive samples.

The experiment has been conducted in the form of two online surveys at Qualtrics, separately for 30 native speakers of Norwegian and of English who rated the samples for perceived accentedness and comprehensibility on a 9-point scale as well as identified the speakers' first language. The predicted scenarios assume that the instructed learners should be perceived as more foreign-accented than naturalistic learners and grammatical errors as well as the speech mode should affect the perceived strength of foreign accent (Munro & Derwing 1994, Hammerberg & Hammerberg 2005, Wrembel 2010); however, these assumptions have also been challenged. In a pilot study we did not find any statistical differences between naturalistic and instructed learners in terms of accentedness or comprehensibility. Moreover, the manipulation of pauses did not significantly influence the ratings.

Preliminary findings demonstrate that instructed learners were more frequently identified as Slavic when compared with naturalistic learners. In the ongoing analysis (conducted with the aid of mixed-effects ordinal regression modeling), we test to which extent the perception of foreign accentedness and comprehensibility is predicted by the following variables: Language status (L2 vs. L3/L*n*); Speech mode (read vs. extemporaneous); Acquisition setting (instructed/formal vs. naturalistic or mixed), and Grammaticality condition (well-formed/error-free vs. erroneous). We also investigate to what extent L2/L3 proficiency levels predict the perception of foreign accentedness and comprehensibility of speech, and importantly, how these two parameters correlate.

READ SPEECH	EXTEMPORANOUS SPEECH	
English: *They agreed that the one who first succeeded in making the traveler take his cloak off should be considered stronger than the other.*	**English error-free:** *The boy, surprised with the cat, lost his red ball, and it got stuck in the sea.*	**English erroneous:** *During this time cat see a fishes that he of course loves to eat.*
Norwegian: *De blei enige om at den som først kunne få mannen til å ta av seg frakken skulle gjelde for sterkere enn den andre*. [English translation provided above.]	**Norwegian error-free:** *Hunden ser pølser og han elsker pølser, så han spiser mange av dem*. [The dog sees sausages and he loves sausages, so he eats a lot of them.]	**Norwegian erroneous:** *Ei mus gå ... til treet og en gutt så den action*. [A mouse went ... to the tree and a boy saw the action.]

Table 1: Experimental design (samples obtained from one participant in six experimental conditions).

References

Gagarina, N., Klop, D., Kunnari, S., Tantele, K., Välimaa, T., Bohnacker, U., & Walters, J. (2019). MAIN: Multilingual Assessment Instrument for Narratives – Revised. *ZAS Papers in Linguistics*, *63*.

Lloyd-Smith, A. (2021). Perceived foreign accent in L3 English. The effects of heritage language use. *International Journal of Multilingualism*, *20*(3), 753–767.

Li, P., Zhang, F., Yu, A., & Zhao, X. (2020). Language history questionnaire (LHQ3): an enhanced tool for assessing multilingual experience. *Bilingualism: Language and Cognition*, *23*, 938–9

Hammarberg, B., & Hammarberg, B. (2005). Re-setting the basis of articulation in the acquisition of new languages: A third-language case study. In B. Hufeisen & R. Fouser (Eds.), *Introductory Readings in L3* (pp. 11-18). Tübingen: Stauffenberg Verlag.

Munro, M. J., & Derwing, T. M. (1994). Evaluations of foreign accent in extemporaneous and read material. *Language Testing*, *11*(3), 253–266.

Wesolek, S., Gulgowski, P., & Żygis, M. (2023). Illusions of ungrammaticality in the perception of non-native accented speech. In *Proceedings of the 20th International Congress of Phonetic Sciences (ICPhS)*, Prague, 521–525.

Wrembel, M. (2010). L2-accented speech in L3 production. *International Journal of Multilingualism*, *7*(1), 75–90.

Wrembel, M., Kaźmierski, K., Dziubalska-Kołaczyk, K., Weckwerth, J., & Cal, Z. (2023). Investigating predictors of foreign accentedness in L3 acquisition. In *Proceedings of the 20th International Congress of Phonetic Sciences (ICPhS)*, Prague, 2542–2546.