Abstract

Levels of proficiency in the L2 and the L3 as an interaction effect in L3 Norwegian stop perception

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It seems that the switch from the L2 to the L1 source of influence (e.g. Gut 2010; Wrembel 2010) as a consequence of a change in both L2 and L3 proficiency could be a manifestation of the interrelatedness of these factors. Sypiańska and Cal (2020) analyzed spectral moments of the apico-alveolar Spanish sibilant produced by L1 Polish/L2 English/L3 Spanish speakers and found a reversed effect of L2 and L3 proficiency on centre of gravity, skewness and kurtosis of the sibilant. It remains to be verified whether level of proficiency behaves in a similar way in L3 perception.

The current study is a re-analysis of perception data from Cal (2023) in which 28 L1 Polish/L2 English/L3 Norwegian speakers were asked to participate in a two-alternative forced-choice (2AFC) task in which they decided whether they hear a voiced or a voiceless stop. Three continua for L3 Norwegian were prepared for each place of articulation (labial, coronal, velar) that ranged from -100 - 100 ms and consisted of 21 steps, each of 10 ms.  
The obtained data included accuracy scores that were then used to calculate the perceptual boundary locations.

The aim is to analyze the effects of L2 and L3 level of proficiency, and particularly the interaction effect of the two factors, on the perception of fortis and lenis word-initial stops in L3 Norwegian by L1 Polish, L2 English speakers. We seek to answer the following research questions: RQ(1) Do both levels of proficiency in the L2 and the L3 influence the perceptual boundary in L3 Norwegian stops?; RQ(2) Is there an interaction effect of the levels of proficiency in the L2 and L3 on the perceptual boundary?

Multiple regression was run to determine the main effects of level of proficiency in the L2, level of proficiency in the L3, continuum (b/p, d/t, g/k) and the interaction effect of the two proficiency variables. The results showed significant main effects of L2 proficiency (t=4.449, p=.001) and L3 proficiency (t=4.429, p=.001) and a significant interaction effect of the two proficiency variables (t=-4,381, p=.001). The negative t value for the interaction effect pointed to a reverse directionality in the effects stemming from L2 proficiency and L3 proficiency on the boundary between the voiced and voiceless stops. The statistical results, and further re-analyses of L3 Norwegian data, will be interpreted from the point of view of holistic approaches to multilingualism in particular Complex Dynamic Systems Theory (Gut, Kopečková and Nelson 2023).

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