

Individual Differences in Acquisition of Second Language Phonology

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When learning a second language (L2), one not only needs to learn the new grammatical structures, the new words and their meaning, the word order, but in most cases, the learner also wants to understand spoken language and be able to pronounce it in a way to be understood by native speakers of that language. In other words, he needs to acquire the phonetics and phonology of the new language. This is notoriously difficult, as shown by the foreign accent retained by the majority of L2 learners. This foreign accent results in part from the difficulty to produce – and perceive – the sounds of an L2 accurately.

When talking about acquisition of a foreign language, it is not uncommon to hear people say “you seem to have a talent for languages” or “I have never had an “ear” for languages” etc. Those expressions reflect the large individual differences that can be observed in the level of proficiency attained among L2 learners: some master the second language at a level comparable to natives in no time, or write exceptionally well (like Joseph Conrad, for example), or on the contrary, struggle for years with most basic communication. An impressive body of research focuses on individual differences in second language acquisition, trying to pinpoint those factors that will constrain “ultimate attainment” in syntax, vocabulary (semantics), and also phonology, and identify those that are most crucial in predicting success in L2 acquisition (Carroll 1964, Obler & Fein 1988, Skehan 1989, Dörnyei & Skehan 2003, Dörnyei 2005 and many more). Factors, such as different as age, the amount of first language (L1) usage, the L1 background, motivation, cognitive flexibility, intelligence, working memory, processing speed, genetic predisposition (Geschwind Cluster), etc., have been proposed to influence L2 acquisition, and are therefore potential sources of individual differences. But very little progress has been made in identifying the sources of those differences as they apply to phonological acquisition specifically. Phonological acquisition – through perceptual and motor learning – is in large part reflected in the degree of foreign accent in an L2. What are the characteristics of those learners who will gain excellent mastery of the phonetics and phonology of a second language? In other words, who will retain a strong accent, and who will not? And why?

In order to make progress in this area, an exploratory study of the individual variability in the L2 acquisition of English phonology is proposed. There are two main aspects:

- a. Individual differences and development of the acquisition of the L2 phonological system will be examined through perception and production testing (cross-sectional observation of the acquisition of different parts of the sound system)

- b. The factors linked to individual differences in the outcome of acquisition will be explored via different independent measures of neurocognitive abilities, while controlling for factors such as age, motivation, L1 background, English learning experience, and L1 usage.

To examine the effects of acquisition, a variety of production and perception tasks will be carried out. Production samples will be collected through recordings. Perception performance studies will include listening to sounds and/or looking at pictures and/or text and responding orally, in writing, button-press, mouse-click, and/or touchscreen press to the stimuli. In order to examine the effects of individual variables, a battery of neuropsychological (neurocognitive) tests targeting three areas of cognition will be administered at the beginning of the study. The three areas target working memory, attention control, and processing speed. Cognitive tasks will include listening to questions or sounds and/or looking at pictures and/or text and responding orally, in writing, button-press, mouse-click, and/or touchscreen press to the stimuli. Those cognitive functions are expected to interact with the ability to process spoken language and encode phonological information in memory. They might be crucial in phonological acquisition, and a lower than average score – for example – might be linked to a lesser level of phonological acquisition. A number of questionnaires and background information collection will allow controlling for specific factors (age, motivation, etc).

The populations we target for this project will comprise native speakers of English (for comparison and/or accent evaluation purposes), and L2 learners who recently arrived in Bloomington. We will focus on a specific L1 background (Korean) in order to obtain interpretable results in the rate and outcome of acquisition.

Results are expected to provide insight into the individual characteristics linked to the processing and acquisition of sound systems. They will also be useful for language learning centers in providing a better understanding of the factors determining success in pronunciation instruction, and also provide ways to adjust training to specific needs of students.