

Difficulties in foreign language learning: does music help?

The influence of music training, music aptitude and musical teaching methods on the perception of Dutch phonemes and lexical stress by French speakers.

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Key words: foreign language learning – phonology – song – music training – music aptitude

Foreign language learners often show some specific difficulties in their acquisition of the new language. One of them is the ability to perceive and produce new phonemes and a new prosody. Since phonemes and prosody are dependent on “quasi musical” features (such as rhythm, frequency, intensity), we could wonder whether some music-related elements, like musical aptitude, musical training or the use of music as a didactic tool, could help learners to perceive and produce the sounds and the prosody of a foreign language.

The parallel between music and language has been examined in different research fields. First, it has been stated that music and language share some neurological resources [1, 2]. Secondly, research has shown that music training [3-5] or musical aptitude [6, 7] can improve language-related tests. Third, it seems that the use of music as a didactic tool can also have a positive influence on some aspects of language learning [8-10]. These different music-related elements influencing foreign language learning have nonetheless never been examined together in one analysis. Moreover, the influence of the effect of using music to teach prosodic properties of a foreign language has not been tested in a systematic way. The projects that we carried out aim to remedy this lack of information.

In our research, we analyzed the influence of different music-related elements on the perception of phonemes and lexical stress of Dutch by French university students, two languages which show differences at the segmental and suprasegmental levels.

We first tested the perception of Dutch phonemes which don't exist in French. We investigated the influence of both music training and musical aptitude on the discrimination. We also measured the influence of these musical factors compared to already stated influence factors for foreign language acquisition (e.g. motivation, age of learning, knowledge of other languages, etc.). Results show that musical aptitude significantly correlates with the correct discrimination of Dutch phonemes. The analysis makes also clear that the influence of music-related factors on phoneme discrimination is more important if students are not highly motivated for language learning or if they don't know other foreign languages.

The second project, which is still in progress, focuses on the perception of Dutch word stress by French speakers. French and Dutch have different word prosodic systems: French has a ‘primary accent’ which falls on the final syllable of the word (group), whereas Dutch has a variable word stress with a lexical property (e.g. **o**ndergaan: *to go down* / onderga**a**n: *to undergo, to go through*).

In this study, 50 musicians and 50 non-musicians hear 120 stimuli consisting on a word followed by two sentences containing this word with a different lexical stress (e.g. **do**orkruisen – *ik wil dat doorkruisen* – *ik wil dat doorkruisen*). They then have to match the sentence with the given word. Each stimulus is either spoken, either spoken on a beat, either sung. Results, which we will get by March 2015, will indicate 1/ whether music training or aptitude can improve the discrimination of the lexical stress; 2/ whether the use of rhythm or song can help learners in this task; 3/ which kind of presentation of the stimuli (spoken/spoken on a beat/ sung) is more adapted in function of the musical background of the student. As such, our results could provide new information about the interaction between music and the difficulties encountered in the foreign language process.

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