The impact of visual cues and lexical knowledge on the perception of a non-native consonant contrast for Colombian adults
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This study investigates the effect of two sources of information, visual cues and lexical knowledge, on the perception of a non-native phonemic contrast. Recent studies have suggested that second-language learners may not benefit from visual cues as much as native listeners in identifying phonemic contrasts that do not occur in their native language. Furthermore, these studies suggest that the overall degree of visual bias in speech perception can vary according to the learner’s native language background. Several studies have also shown that novel sounds in the L2 are better identified if the learner knows the words in which they appear. Our study looked at correlations between the identification of a novel phonemic contrast (/b/-/v/), the ability to use visual cues to disambiguate this contrast, lexical knowledge and the ability to produce the contrast.

Twenty native Spanish learners of English living in Colombia were tested on an identification task involving the labelling of 16 minimal pairs of real words contrasting in the presence of /b/ or /v/ in either initial or medial position. These 32 words were produced by four native English speakers. Learners carried out the test in three conditions: audiovisual (AV), auditory alone (A) or visual alone (V). Following the perception test, their knowledge of each of the lexical items was evaluated, and they recorded the same list of words. Mean identification scores were 63% in the A condition, 68.5% in the V condition and 70.3% in the AV condition. Post-hoc analyses showed that the scores were significantly higher for the AV than for the A condition, but that scores for the V condition did not differ from the AV condition. This suggests that, as a group and contrary to previous /b/-/v/ studies with Korean and mainland Spanish speakers, Colombian speakers relied heavily on visual cues in their identification of /b/-/v/. As in previous studies, there was individual variability in the degree of audiovisual benefit. A, V and AV scores were strongly correlated, suggesting that, in the process of acquiring a novel phonemic contrast, learners generally become sensitive to both auditory and visual cues marking the contrast. Identification scores were significantly higher for known than for unknown lexical items, showing the effect of lexical knowledge on phonetic perception, but scores for known and unknown words were also strongly correlated. Finally, production accuracy was only weakly correlated with audiovisual perception accuracy (in initial position only).

In summary, these results suggest that the degree of visual bias in speech perception is ‘culture-specific’ rather than just ‘language-specific’. Indeed, there is a strong emphasis in Columbia on looking at interlocutors when speaking. Lexical knowledge also has a role in the perception of novel phonemic contrasts and should therefore be controlled in tests of L2 phonetic perception, as also suggested by Yamada, Tohkura and Kobayashi (1996).

References: