

The effect of stimuli repetition on approximant-stop discrimination in Spanish-dominant and English-dominant late bilinguals

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This study examines the effect of repetition of target stimuli on the discrimination of the Spanish stop-approximant contrasts [b]-[β], [d]-[δ], and [g]-[ɣ] by English-Spanish and Spanish-English late bilinguals living in Canada. The acquisition of these contrasts has previously been shown to be difficult for L2 learners (Kissling, 2015; González-Bueno, 1995; Zampini, 1994). Of interest is (a) if repetition of target stimuli in a single session improves discrimination accuracy and how many repetitions are needed to observe significant increase in accuracy, (b) if there is an effect of contrast type, and (c) if bilingual language dominance modulates the rate of improvement in discrimination accuracy. Perception of target phones was assessed in adult native Spanish speakers (n=10) and English-speaking Spanish learners (n=23) via VCV nonwords over six blocks of ten trials each, featuring both Spanish approximants and voiced stops in intervocalic position, presented in an AX discrimination task. Results indicate a significant effect of repetition ($p < .001$) as discrimination accuracy scores improved after just one block and continued to improve through to the fifth block in a stepwise manner, as shown in Table 1. Moreover, the discrimination of [δ]-[d] and [ɣ]-[g] was more likely to improve with repetition in comparison with [b]-[β]. Overall, discrimination accuracy scores were higher for Spanish-dominant listeners and English-dominant listeners demonstrated greater improvement on the more difficult [ɣ]-[g] contrast. Nonetheless, both Spanish- and English-dominant groups significantly ($p < .001$) benefited from the repetition of target stimuli for total improvement, although English-dominant listeners benefited more, as shown in Table 2. This study makes a novel contribution to the fields of L2 perception and bilingualism by examining the effect of stimuli repetition in both native and nonnative listeners.

Table 1. Mean discrimination scores per block for each group and all participants combined with standard deviations provided in parentheses.

Group	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Sp-dom	78.0% (10.3)	87.0% (6.7)	86.0% (19.0)	89.0% (13.7)	97.0% (6.7)	96.0% (7.0)
Eng-dom	74.3% (12.0)	80.9% (13.5)	83.0% (11.1)	89.1% (10.8)	91.7% (13.4)	92.6% (16.6)
Combined	75.5% (11.5)	82.7% (12.1)	83.9% (13.7)	89.1% (11.6)	93.3% (11.9)	93.6% (14.3)

Table 2. Mean change in discrimination accuracy scores for each target contrast compared for Spanish-dominant and English-dominant listeners as well as for both groups combined. Standard deviations appear in parentheses.

Dominance Group	Mean change in discrimination accuracy			Mean target improvement
	[β]-[b]	[δ]-[d]	[ɣ]-[g]	
Sp-dom	0.0% (0.0)	25.0% (54.0)	25.0% (26.4)	16.7% (26.8)
Eng-dom	-13.0% (34.4)	17.4% (49.1)	60.9% (39.8)	21.7% (41.1)
Combined	-9.1% (29.2)	19.7% (49.9)	50.0% (39.5)	20.2% (39.5)

Keywords: speech perception; repetition effect; late bilingualism; Spanish; English

Selected References

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