

## What are the limits to implicit learning?

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Long-distance dependencies are a common feature of language (e.g. subject-verb agreement in SOV languages). If languages can be learnt implicitly (without awareness), then such dependencies must also be amenable to implicit learning. Phonological memory plays an important role in their acquisition (N. Ellis & Schmidt, 1997). Therefore it may be possible to learn pronounceable, linguistic long-distance dependencies implicitly, even though the evidence suggests that long-distance dependencies in unpronounceable letter strings are not acquired (Johnstone & Shanks, 2001).

In the minimal case, learners can indeed transfer knowledge of subject-verb agreement to an L2, at least where the mapping is transparent (Leonard Cook, 2007). This paper investigates the acquisition of a novel long-distance dependency: object-verb agreement in Basque, which cannot be transferred from English. (Basque also has subject-verb agreement, but the number value of the subject was held constant for each participant in this experiment).

Native English speakers were exposed to spoken and written Basque sentences. Then a timed aural judgement test assessed their implicit knowledge of the object-verb dependency. An untimed written version measured explicit knowledge, which takes longer to access (Hulstijn, 2002). These tests are believed to focus on different constructs (R. Ellis, 2005). Implicit learning is also identifiable by automaticity (Hulstijn, 2002): it suffers from exposure to ungrammatical items during tests. Finally, a sentence-correction task identified participants with explicit knowledge (Learners).

The Learners were sensitive to the grammaticality of test sentences throughout both tests, although the effects were stronger in the untimed version. The Non-Learners on the other hand, were only sensitive to the grammaticality of test items in the first half of each test. Thus, their performance deteriorated in the face of incorrect stimuli, as expected from implicit knowledge. However, while they were more likely to accept grammatical sentences than ungrammatical ones during the untimed judgement test, in the timed test the reverse was true. That is, ungrammatical sentences were accepted more often than grammatical ones. Therefore it is not entirely clear what the results imply. Insights would be appreciated.

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