

Picking Up a Second Language Is Predicted by Ability to Learn Patterns

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Some people seem to pick up a second language with relative ease, while others have a much more difficult time. Now, a new study suggests that learning to understand and read a second language may be driven, at least in part, by our ability to pick up on statistical regularities.

The study is published in [*Psychological Science*](#), a journal of the [Association for Psychological Science](#).

Some research suggests that learning a second language draws on capacities that are language-specific, while other research suggests that it reflects a more general capacity for learning patterns. According to psychological scientist and lead researcher Ram Frost of Hebrew University, the data from the new study clearly point to the latter:

“These new results suggest that learning a second language is determined to a large extent by an individual ability that is not at all linguistic,” says Frost.

In the study, Frost and colleagues used three different tasks to measure how well American students in an overseas program picked up on the structure of words and sounds in Hebrew. The students were tested once in the first semester and again in the second semester.

The students also completed a task that measured their ability to pick up on statistical patterns in visual stimuli. The participants watched a stream of complex shapes that were presented one at a time. Unbeknownst to the participants, the 24 shapes were organized into 8 triplets — the order of the triplets was randomized, though the shapes within each triplet always appeared in the same sequence. After viewing the stream of shapes, the students were tested to see whether they implicitly picked up the statistical regularities of the shape sequences.

The data revealed a strong association between statistical learning and language learning: Students who were high performers on the shapes task tended to pick up the most Hebrew over the two semesters.

“It’s surprising that a short 15-minute test involving the perception of visual shapes could predict to such a large extent which of the students who came to study Hebrew would finish the year with a better grasp of the language,” says Frost.

According to the researchers, establishing a link between second language acquisition and a general capacity for statistical learning may have broad implications.

“This finding points to the possibility that a unified and universal principle of statistical learning can quantitatively explain a wide range of cognitive processes across domains, whether they are linguistic or nonlinguistic,” they conclude.

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