

Beyond the statistics: Questioning the arbitrariness of the "words" in statistical learning paradigms

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Abstract: Statistical learning is a form of implicit, unsupervised learning related to complex visual processing and language development. Statistical learning studies are often designed as if all stimuli of a certain type (e.g. CVCs) bound by statistical regularities should be learned equally well, implying that statistical learning occurs via an abstract mechanism. We conducted a series of 12 statistical learning experiments using the same set of 15 auditory CVCs in different statistically-bound "words" (triplets of CVCs). After being exposed to "words" 36 times each in random order, participants were tested for learning. Surprisingly, we only found learning in 7 of the 12 groups. Since all combinations of CVCs are not learned equally well even though the transitional probabilities are equivalent, these results indicate that CVCs influence statistical learning. We examine these results in relation to regularities in the ambient language and specific phonological qualities of the "words" formed.