

Songs, structure, and the mind

The generative approach to linguistic theory has stimulated an important body of research identifying shared and varying properties of language. A generative approach to tonal music has also been explored, which likewise offers rich potential to reveal shared principles and varying parameters of music. In both domains, the existence of such principles and parameters follows from the interplay between innate and acquired aspects of cognition. Distinguishing these requires careful empirical study of diverse languages and musical genres within a shared descriptive and analytical framework, a project that has been underway in linguistics for over fifty years.

Both language and music have recursive branching structures that reflect constituency—how the parts group together—and headedness, or which part is prominent. In language, these structures have been attributed to a simple recursive operation (Merge) which interacts with both sound and meaning. Comparable structures in music are purely sound-oriented, expressing prolongational relationships, or the continued awareness of stable, important musical events underlying the varying perceived surface notes.

Since songs (that is, words sung to music) require the simultaneous generation of musical and linguistic structures, they have the potential to shed new light on the nature of the cognitive resources underlying recursion. Recent MEG studies have investigated the frequency of neural responses time-locked to the processing of linguistic constituents. A potential approach to understanding the cognitive basis of recursion would be to investigate the processing of matching vs. conflicting musical and linguistic constituents in songs. We illustrate the logic of this approach using a case study of one distinctive musical genre, Anglican psalm chants.