

Language and complexity science: dynamics
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Much of science, from economics to systems biology to physics and mathematics, is engaged now with complexity, often seeking to understand complex phenomena through the interaction of simple systems. Language is a complex system par excellence and linguists have approached such issues of complexity through “modularity” but we contend that linguists can gain much by understanding modularity more broadly, through the wider paradigm of complexity.

In this course we will consider two domains of language, illustrating complexity science approaches: speech perception and syntactic change. We shall adopt a particular focus of complexity science work: dynamics, considering how systems change. Complexity science has addressed issues of phase transitions or “tipping points,” major structural shifts where many phenomena change together, and emergent phenomena, where properties emerge that go beyond the triggering conditions. In each case, the challenge is to unify the similar behavior of apparently disparate phenomena. Part of what is involved is discovering the right categories and we plan to explore such questions in speech perception and syntactic change.

References

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Waldrop, Mitch 1992 *Complexity: The emerging science at the edge of order and chaos*. Simon & Schuster; New York