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Modelling population dynamics and language transmission
from the perspective of language learning, contact and change

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SELF-ORGANIZATION AND OPTIMIZATION IN COLLECTIVE LINGUISTIC BEHAVIOR

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"*It is a truth universally acknowledged, that a single man in possession of a good fortune must be in want of a wife.*" — Jane Austen, *Pride and Prejudice*

This talk describes a much less recognized and perhaps far more surprising truth: that property and marriage, in conjunction with population size, have governed – and continue to govern – naming practices in English-speaking countries in a remarkably law-like way. In doing so, I shall also describe another little recognized truth, that ought to be less surprising than it is likely to be to many: that at a micro-level, humans linguistic behavior is exquisitely sensitive to the information it communicates (and receives), such that at a macro-level –within communities of speakers, and over generational time amongst their ancestors –collective linguistic behavior self-organizes to optimize its efficiency in response to communicative and environmental pressures. This self-organizing behavior has led to the evolution of the highly structured systems we call languages, and it continues to maintain these systems in response to communicative and environmental pressures even today.

I shall illustrate each of these points in relation to an aspect of linguistic behavior that linguists have traditionally considered to be barely communicative, and largely unstructured: the naming of individuals within linguistic communities. First, I shall show that the name grammars of Western and Sinosphere languages are in fact highly structured communication systems that historically shared what seems to be a universal form; And second, I will show that contrary to widespread belief, there appears to have been no fundamental change in the principles governing English naming practices between the early modern period, where for centuries it was common for half of all English males to be called either John, William or Thomas, and today, where the apparent volatility of naming has led to the annual publication of what appear to be ever-changing lists of 'most popular names.'

Finally, I will describe work showing how the same self-organizing structure can be seen across the rest of the grammar, and lay out some of the implications that the phenomena identified here have for theoretical understandings of human communication and cognition.