*Evolutionary Game Theory and Historical Linguistics*
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The talk addresses two issues in historical linguistics from the perspective of generalized evolutionary theory and, methodologically, in terms of evolutionary game theory.

The first issue concerns stress pattern diversity in languages such as English, where words that are otherwise equivalent in terms of prosodic structure and morphonotactic category are nevertheless stressed on different syllables. Examples of such pairs are *ho'tel – 'lentil*, *'envoy – i'dea*, *'research$_N$ – re'search$_N$*, or *'access$_V$ – ac'cess$_V$*. We try to account for such diversity on the assumption that constraints on rhythmic well-formedness (such as FTBIN, see Prince & Smolensky 2002: 50) do not directly apply on isolated lexical representations but on the phrase level patterns they form when combining in utterances. Words then adopt those stress patterns that work best in most cases. This implies that the stress pattern adopted by any specific item depends on the patterns adopted by the items it can combine with. We model this hypothesis in terms of an evolutionary game, in which items meet, adopt stress strategies and are then rewarded or punished (ultimately in terms of historical stability) according to the rhythmic well-formedness of the sequence they build. Our model predicts stress pattern diversity of the type observed in English to become evolutionarily stable in languages that contain a sufficiently large number of monosyllables. Additionally, it seems to predict the evolutionary dynamics of stress pattern distribution in the history of English, as well as other languages such as Thai, Khmer, Munda, or Mandarin Chinese.

The second issue concerns the motivation of subjectification in semantic change, as exemplified, prototypically, in the rise of 'epistemic' meanings (1) in 'deontic' modals (2) (cf. Traugott 1989).

(1) *John <u>must</u> work hard to survive*. (objective necessity)
(2) *John looks tired. He <u>must</u> be working hard*. (speaker's subjective certainty)

Although semantic changes that qualify as subjectifications seem to be frequent, the mechanisms that drive them are not fully understood, and often simply and somewhat circularly attributed to the need of speakers to express their inner selves. We offer an account in terms of evolutionary game theory that is based on concepts used in the study of animal communication and take subjectification to emerge through sender-receiver interactions where senders may attempt to manipulate receivers (e.g. by altering their construal of reality), while receivers may exploit signals for reading speakers' minds (i.e. beliefs, goals and intentions) (cf. Dawkins & Krebs 1984). - In our model, interlocutors may intend or interpret a message as either objective (about external reality) or subjective (about beliefs etc.). They may be cooperative or uncooperative but are assumed to act rationally, i.e. in their own self-interest. Co-operative speakers are honest, uncooperative ones lie. Co-operative listeners are credulous, uncooperative ones disregard the encoded message, but try to infer hidden speaker beliefs. An analysis of the dynamics predicted by our model (Hofbauer & Sigmund 1998) reveals that if the proportion of cooperative players does not exceed a certain threshold, the behaviour type 'objective speaking & subjective listening' is the only evolutionarily stable strategy-combination. We take this to suggest that subjectification is driven by listener's interest in (potentially hidden) beliefs and intentions of speakers rather than by speakers' desire to express their inner selves.

*References*

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