Word order and learning biases in the cross-linguistic lab

In this talk, I report on a number of artificial language learning experiments conducted (principally with Martin, Culbertson, and Adger) in the poverty of the stimulus paradigm. In this paradigm, participants learn a fragment of an artificial language from input that contains no information concerning a particular property of the complete language, thus leaving several possibilities open. In this particular set of experiments, participants whose native languages differed in the order of elements in the noun phrase, were taught languages with noun phrase orders crucially different from the order in their native languages.

From typological data, we know that neutral orders where relative linear distance from the head is homomorphic to the c-command hierarchy Dem >> Num >> A >> N are much more frequent than orders without such a homomorphism. This preference for homomorphic orders also shows up experimentally. There is a second important generalization (Cinque 2005, Abels and Neeleman 2012), which Cinque (2009) has called the fundamental left-right asymmetry of natural languages. Orders that violate homomorphism can be analyzed in terms of a homomorphic order and movement 'to the left' of the head of the extended projection or of a constituent containing the head. That is, the filler appears earlier in the speech stream than the postulated gap. These two preferences together account for Greenberg's (1963) Universal 20.

An experiment currently in the field probes whether this asymmetry also guides the behavior of speakers in artificial language learning experiments, in particular of speakers of Kïïtharaka, a language whose neutral word order is not homomorphic. We expect that the left-right asymmetry guides participants' behavior in the experiment. If correct, this will strengthen our conviction that the typological asymmetry is caused by a cognitive asymmetry (rather than being a historical accident). Ultimately, such a finding would also strengthen our conviction in the well-observed bias for movement (at least when it is obligatory and/or of obligatory elements) to create filler-gap structures rather than gap-filler structures.

These ideas will then be discussed in light of the claim (Zhang 2007) that Universal 20 also guides the ordering possibilities of elements in the noun phrase of Taiwanese sign language and the conflicting claim that gap-filler dependencies (in wh-questions) are unmarked in the manual modality (Cecchetto et al 2009).