Contribution ID: **24** Type: **Talk**

The time course of BOAT-FLOAT facilitation and its implication for morphological processing

Friday, June 23, 2017 3:50 PM (20 minutes)

Accounts of morphological processing differ with respect to whether morphological effects fall out of learning-based principles (e.g., convergence, discrimination) or whether morphological structure is explicitly represented in our lexical knowledge. We examine how the contribution of meaning (and form) similarity differs across time with quantile regression and dynamic survival analysis. Data encompass three variants of primed lexical decision that differed by SOA and presence of a mask (48 ms forward masked, 116 ms, and 250 ms SOAs) as well as position of form overlap (rime, onset) between prime and target. Each target (e.g., FLOAT; SKATE with rime and onset overlap respectively) followed all types of primes, those related by form only (e.g., COAT, SKIP), meaning only (e.g., SWIM, GLIDE), both form and meaning (e.g., BOAT, SKI) or neither (e.g., SEED, HOOK). We contrast the results of a standard analysis of variance to those of the quantile regression and dynamic survival models for the instantaneous hazard and the cumulative incidence within the competing risks setting to track the primacy of semantic effects and their interaction with form throughout the full time course of primed word recognition.

Shared form in the absence of shared meaning led to delayed responses from the second decile onwards. Shared meaning in the absence of shared form led to shorter responses, but only in later deciles. Shared meaning and shared form also afforded shorter RTs, and this effect was present already at the first decile. Similar results were obtained with dynamic survival analysis. The emergence of the effect of sharing both form and meaning before any other effect, irrespective of SOA and the presence or absence of a mask or a linguistically-define morpheme, provides further evidence for the importance of semantics already at the earliest stages of lexical processing.

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Session Classification: Symposium 2 – The time course of morphological processing as revealed by analyses of distributions and of means

Track Classification: Symposium 2 - The time course of morphological processing as revealed by analyses of distributions and of means