AMP2020 abstract

Learning French *liaison* with Gradient Symbolic Representations: Child errors, adult wug-tests, predictions and consequences

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Smolensky and Goldrick (2016) first made the case for Gradient Symbolic Representations (GSRs) using the phenomena of French *liaison*: a rich pattern of morpho-phonological alternations where some consonants come and go at word boundaries for reasons that are arguably, but not exclusively, phonological (e.g. Côté, 2011.) Liaison has been particularly controversial with respect to underlying forms (see overviews in e.g. Tranel, 1995 and Smith, 2015) and Smolensky & Goldrick argue that positing inputs with gradient and blended segments can resolve much of this controversy.

This talk is concerned with how a learner might use GSRs to acquire the breadth and depth of liaison (see also Hsu, 2018; Rosen, 2016, 2019; Smolensky, Rosen & Goldrick, 2020.). We first lay out the nature and trajectories of errors that French-learning children make with liaison forms, using data from Chevrot, Dugua and Favol (2009) and related works. Then we present a simple computational simulation of liaison learning, and show that at least some basic child-like errors and adult-like end states are easy to derive in this approach. We will focus on ways in which the GSR learner's development is influenced by input frequencies – e.g. as part of an explanation for why the 'strength' of the morpheme boundaries between two words correlates with the potential for obligatory, optional or impossible liaison (e.g. Bybee, 2001; also Zuraw and Hayes, 2017). Finally, we report preliminary results from a wug-test with Canadian French-speaking adults, which tests predictions about the extent of obligatory liaison applied to novel words and discusses their implications for the GSR learning model.