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Title: From the neocerebellum to grammaticalization

Abstract: Please see next page

FROM THE NEOCEREBELLUM TO GRAMMATICALIZATION

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It has been extensively argued that grammaticalization relies on the qualitative changes induced by automatized linguistic processing in the intra-generational level of casual adult linguistic behavior (e.g., Bybee, 1998; Lehmann, 2004). Given the fundamental role of the cerebellum for the automatization of behavioral repertoires (e.g., Thach, 1998), along with the interconnectivity of the phylogenetically recent neocerebellum with language- and thought- related cortical loci of the prefrontal cortex (Leiner et al., 1991), and the unitary computation that the cerebellum undertakes in contributing to different cortically specialized behaviors (e.g., Wolpert et al., 1998), I articulate a basic neurolinguistic mechanism reflecting routinization processes of linguistic performance. The mechanism is explicitly based on Pickering and Garrod's (2007) Kalman filter psycholinguistic processor, a dynamical state estimator neurally instantiated in the cerebellum (Paulin, 1989). Returning to the particular grammaticalization phenomena, I examine how the "*lateralized linguistic cerebellum*" (Mariën et al., 2001) might underlie the operation of chunking, phonetic attrition (e.g., Bybee, 1998), and the proceduralization of conceptual representations (e.g., Nicolle, 1998). Closing, I present the experimental hypotheses generated on the basis of this neurolinguistic model, to be tested by psychopathological research under preparation.

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