[OC–D1] Lexical predictability effects on agreement encoding reveal the differences between gender and number features

Mikel Santesteban[1], Paolo Lorusso[2], Anna Hatzidaki[3], Itziar Laka[1], Adam Zawiszewski[1]

[1]University of the Basque Country (UPV/EHU)
[2]Nets Scuola Universitaria Superiore IUSS Pavia
[3]National and Kapodistrian University of Athens

Morphophonological forms of upcoming words are determined by person, number or gender features, which are suggested to be processed differently (i.e. Greenberg, 1963; Carminati, 2005). This study investigates whether and how do gender and number features differ by testing to what extent verb-cloze probability interacts with object-clitic gender and number agreement.

ERPs of 64 Spanish natives were recorded during a RSVP reading for comprehension task. (a) Lexical predictability (semantically high- vs. low-cloze verbs) and (b) Grammaticality (grammatical vs. ungrammatical object-clitic) were manipulated within-participants (e.g., *El conductor frenó ... el tren para intentar pararlo/*pararla/*pararlos vs. aparcarlo/*aparcarla/*aparcarlos ...*, "The driver stopped ... the train$_{SG-MASC}$ to try to stop-it$_{CL-SG-MASC/*FEM}$ vs. park-it$_{CL-SG-MASC/*FEM}$/*-them$_{CL-PL-MASC}$ ..."), and Feature type (gender vs. number) between-groups (N=32 each).

If lexicosemantic predictability and morphophonological agreement information are processed simultaneously, interaction effects should show, while if independently, additive effects should show. Importantly, if gender and number are processed differently, divergent interaction patterns should emerge.

Results revealed N400 grammaticality effects (300-500 ms) with larger negativity for ungrammatical than grammatical sentences, left-lateralized for gender and right-lateralized for number violations. Predictability effects showed larger negativity for low-cloze than high-cloze verbs. Interestingly, the grammaticality by predictability interaction was only significant for gender features: grammaticality effects only with low-cloze verbs and predictability effects only in ungrammatical sentences. Between 500-800 ms, there was only a P600 grammaticality effect for gender features.

Our results suggest that similar processing resources are used for lexicosemantic prediction/integration and lexically-based grammatical gender agreement, while different syntactically-based processing resources are used for number agreement.

✉ *mikel.santesteban@ehu.eus*

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