

Different ways to process honorific features: Evidence from ERPs

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While dependency-formation is crucial in language, dependencies are realized in various forms across languages. For example, in fusional languages, grammatical relations are typically encoded based on inflections (e.g., Spanish), whereas in analytical languages (e.g., Korean) case markers perform similar functions. Yet, when a subject-verb dependency is encoded in a similar manner based on a morpheme attached to a verb, a violation of such agreement has been shown to elicit a P600 regardless of a language type (e.g., analytical language: English, Coulson et al., 1998; fusional language: Spanish, Silva-Pereyra & Carreiras, 2007; agglutinating language: Korean, Kwon & Sturt, 2015).

Here we ask whether agreement is also processed in the same manner even in a different configuration, if the nature of agreement is semantically the same. We ask this question based on honorific agreement in Korean. In Korean, the social status of a referent relative to that of a speaker decides which verbal form as well as which case marker to use. For example, a subject NP can be honorified using a suffix *-si-* on its licensing verb, which indicates that the verb's subject is a target of respect (1a). The same NP can also be honorified with the *-kkeyse* nominative case marker on the noun itself (2a). Thus, there is honorific agreement between a subject and its verb in the former, and between a subject and its case marker in the latter. On the other hand, personal names in Korean do not have honorific features, and thus there is an honorific feature mismatch in (1b) & (2c). The resulting sentences are unacceptable in both cases.

To investigate whether agreement of the same semantic nature is processed in a similar manner between verb-subject and noun-case-marker dependencies, we ran an ERP study, using sentences like (2). If honorific agreement in case marking is processed in a similar manner to subject-verb honorific agreement, as in (1), violations of honorific agreement in case marking should also elicit a P600. The experiment had four conditions like (2) (n=32 subjects, 136 sets of sentences). As honorific agreement is optional in Korean, the lack of *-kkeyse* and a use of generic nominative case marker in (2b) does not render the sentence unacceptable. Thus, there were three acceptable conditions (2a, 2b, 2d) and one unacceptable condition (2c).

The results showed that feature mismatching conditions elicited stronger negativities than their corresponding feature matching counterparts, regardless of acceptability of sentences. That is, the NH-H (2c) condition elicited stronger negativities than the NH-NH (2d) condition ($p < .05$). Likewise, the H-NH (2b) condition elicited stronger negativities than the H-H (2a) condition ($p < .05$). The stronger negativities to the feature mismatching conditions suggest that noun-case-marker dependencies are processed differently from subject-verb dependencies. While the P600 elicited to a violation of a subject-verb honorific agreement seems to index syntactic integration difficulty (Kaan et al., 2000), the negativities to (2c) and (2b) seem to be related to a level of (un)expectancy (Kutas & Hillyard, 1984) of a case marker in a given context. These results overall suggest that not semantic content itself but the way that the semantic content is used within a sentence determines the way it is processed.

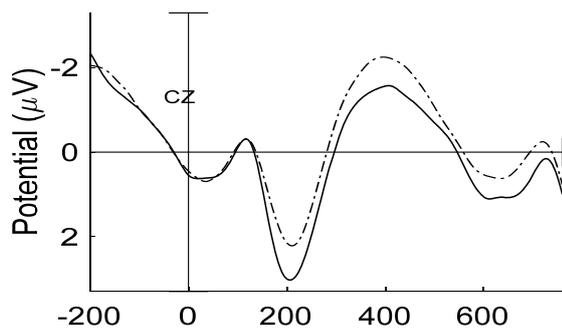
1. Subject-verb honorific agreement

- a) Congruous: Grandpa-NOM TV-ACC watch-HON(-si-)-while worked
 b) Incongruous: #Mary-NOM TV-ACC watch-HON(-si-)-while worked
 'The teacher/the kid/I worked while watching TV'

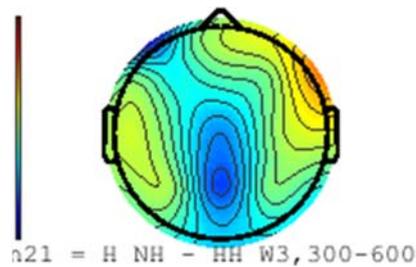
2. Target sentences

- a) H-H: Honorifiable NP-Honorific case marker (congruous)
 Late night-until grandpa-HON.NOM(-kkeyse-) TV-ACC watched
 b) H-NH: Honorifiable NP-generic case marker (congruous)
 Late night-until grandpa-NOM TV-ACC watched
 c) NH-H: Nonhonorifiable NP-Honorific case marker (incongruous)
 #Late night-until Mary-HON.NOM(-kkeyse-) TV-ACC watched
 d) NH-NH: Nonhonorifiable NP-generic case marker (congruous)
 Late night-until Mary-NOM TV-ACC watched
 'Until late night, grandpa/Mary watched TV'

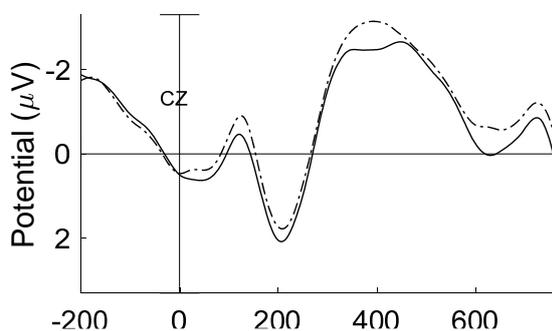
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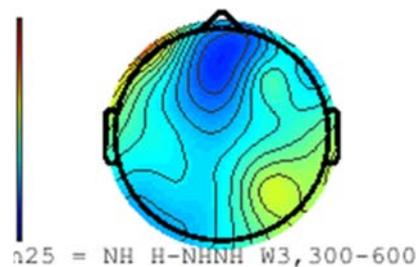
H-NH (2b): dashed line; H-H (2a): solid line



Topographic scalp isovoltage map of the mean difference: H-NH(2b) – H-H (2a)



NH-H (2c): dashed line; NH-NH (2d): solid line



Topographic scalp isovoltage map of the mean difference: NH-H(2c) – NH-NH (2d)