

No Dual System for Regular vs. Irregular: Evidence from Honorific Verbs in Korean-speaking Agrammatics

Introduction

Agrammatic aphasia is a language disorder resulting from brain damage that permits us to understand linguistic processes of the brain. It is characterized by short “telegraphic” sentences manifesting deficits of inflection and syntactic word order accompanied by non-fluent, slow, and effortful speech. Especially related to verb production, many studies have reported agrammatic speakers’ difficulties with structures involving morpho-syntactic movement that can address questions concerning Dual System lexical organization for regularly and irregularly-formed lexical items.

Honorific systems are used to reflect relative social relationships showing respect for people considered “superiors” (e.g., elderly, teachers). Specifically, there are two kinds of honorific verbs in Korean: irregular forms and regular forms transformed from plain verbs. This honorification of Korean verbs can be compared to English regular and irregular past tense verbs. Like English regular verbs, Korean regular verbs are generated by adding a morpheme (-*si*) to the honorific form; like some English irregular verbs (e.g., *go*, *went*), Korean irregular honorific verbs change to altogether different word forms.

The brain representation and retrieval of regular and irregular English past tense verbs have been considered important issues in the area of psycholinguistics. Pinker (1991) proposed the “Dual System” theory, which holds that the processing of past tense involves two separate systems. The regular past tense forms are generated by a grammatical rule and the ability to use this rule is subserved by left frontal cortex. By contrast, the irregular past tense forms are stored in the lexicon and retrieved through associative memory that is subserved by left posterior regions of the brain. Thus, the supporters of the Dual System theory (e.g., Ullman et al., 1997) argue that agrammatic patients, who usually have lesions in the left frontal area of the brain will show more problems with regular past tense than irregular past tense. In addition, this dissociation is considered evidence of a dual mechanism in that the two verb forms are assumed to be processed by independent mechanisms. Other researchers have argued, however, that all verbs are processed via a single system, differing in phonological and semantic representations (e.g., Bird et al., 2003).

An interesting question thus arises with respect to the representation and retrieval of Korean honorific words and forms: how agrammatic patients produce these two different verb-form types compared to normal healthy participants. In particular, we asked, how morphological regularity contributes to verb production in agrammatics.

Methods

Two male Korean-speaking patients (JS and CH, aged 59 and 65) with stroke-induced agrammatic aphasia and two age- and education-matched controls participated. The diagnosis of agrammatic aphasia was based on the Korean version of the Western Aphasia Battery (K-WAB) and quantitative analysis of narrative speech.

Two tasks were administered: single-word and sentence-level completion with pictures and written stimuli. In each task, the investigator spoke the unmarked form of the verb, either alone or in a sentence, and asked participants to produce its honorific counterparts.

Results

The healthy participants produced all the target honorific verbs; however the participants with agrammatism did not. Even though they show a different level of honorific verb production ability (JS:26% / CH:74% of correct scores), the two agrammatics showed no significant difference between regular and irregular honorific verb production performance (JS: regular 28%, irregular 20% / CH: irregular: 75%, irregular: 71%). Indeed, contrary to the predictions of Dual System theory, the absolute agrammatic participants' scores exhibited a mild advantage in favor of producing the regular honorific verbs.

Discussion

In this experiment, both participants with agrammatism showed difficulties in producing honorific verbs, and this deficit was evenly manifested over regular and irregular forms of them. Thus, we conclude, the Dual System model does not suffice to explain the processing of all regular and irregular forms. Rather, we argue, accounting for Korean honorific-verbs production may involve such factors as word frequency, morpho-phonological complexity, and semantic representation.

References

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