Coordinating lexical and structural information during language production: Evidence from semantic and structural priming

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Introduction   How speakers coordinate lexical and structural information is a key issue in psycholinguistics. Research on English shows that lexical items can control grammatical encoding; accessible lexical items are more likely to occur in subject position, thereby impacting the structure of the sentence ([1]). This observation is closely linked to the fact that word-order and grammatical function are tightly linked in English. Effects of lexical accessibility on sentence structure further suggest that message formulation and grammatical encoding can occur in parallel in English ([2]). This raises the question of whether lexical-structural coordination in typologically different languages such as Korean is also dominated by lexical items. The present studies investigate lexical-structural coordination in Korean by comparing effects of semantic and structural priming on active/passive production and speech latencies in picture-description tasks. We report semantic priming experiments on English(n=24) and Korean(n=24), and a structural priming experiment on Korean(n=22).

Korean Based on the properties of Korean, we hypothesize that sentence structure should control lexical retrieval: In Korean—which has flexible word-order—grammatical functions are indicated by case-markers, and to assign case to a particular noun, a structural plan is necessary. Furthermore, passive and non-canonical sentences in Korean are constrained by various syntactic and semantic/pragmatic factors([3]). This means that starting with whichever lexical item is more accessible runs the risk of hindering production. Thus, we hypothesize that Korean speakers generate a structural plan rather than proceeding with whatever lexical item is more accessible-i.e., structure controls lexical retrieval in Korean.

Predictions *If structure controls lexical retrieval*, then semantic priming (which modulates accessibility of lexical items) should not influence active/passive production. Structural priming, however, is expected to affect active/passive production and to reduce speech-onset latencies by facilitating structural planning. On the other hand, *if lexical items control structure*, semantic priming should affect active/passive production and latencies.

Results In Korean, neither semantic nor structural priming influenced the proportion of actives/passives. But *unlike semantic priming, structural priming did influence production latencies:* Passive-priming significantly reduced passive latencies (2240ms) while increasing active latencies (3046ms)(p's<0.1), but active-priming had no effect (actives: 2708ms/passives: 2833ms). In contrast, our findings for English, consistent with prior work, show that English exhibits semantic priming: Patient-priming reduced passive latencies compared to agent-priming (2417ms vs. 2618ms),but passives were slower than actives, which suggests that semantic priming does not necessarily promote overall structural planning.

Our results suggest that Korean speakers generate sentence structure before speech onset, whereas English speakers may proceed with whatever lexical item is available. Importantly, however, Korean speakers' structural choice was not influenced by lexical or structural accessibility. Combining our prior findings that perspective-priming influences Korean active/passive production ([4]), we suggest that (i) Korean speakers formulate sentence structure based on the relational/causal structure of even tsrather than lexical/structural accessibility, but that (ii) structural accessibility can facilitate or interfere with structural planning. This implies that—unlike English—Korean production proceeds through discrete stages of message formulation and grammatical encoding. In general, the present study shows how language-specific properties interact with production mechanisms.

References

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