

Great Expectations: Constituent Order and Givenness in German and Korean

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Languages with flexible word order (WO) like German typically show increased processing costs for non-canonical constituent orders [2, 8]. Information status (IS) independently shapes interpretation, with comprehenders preferring given referents before new ones [1, 4, 6]. Expectation-based accounts provide a unified explanation for both effects: canonical orders and given-before-new linearizations are more expected and therefore less costly. Consistent with this, in a series of SPR studies in German, Jachmann et al. [3] found additive effects of WO and IS at the sentence-initial position, suggesting that comprehenders rely strongly on expectations about the initial NP, i.e., the earliest point in the sentence at which grammatical role and IS become available. Additionally, they found that implied referents – that is, entities that are not explicitly mentioned in the discourse but can be inferred from it – share properties with both given and new entities.

Building on this work, we conducted two SPR studies in German and Korean, respectively. Like German, Korean favors canonical SOV orders, but productive topic/subject drop creates uncertainty about NP1's grammatical role [5, 7, 9], providing a test case for the hypothesis that comprehenders incur processing costs incrementally, at the earliest point where relevant information becomes available.

Study 1 (German, 60 participants, 120 items) manipulated three IS levels—Given, Implied, and New—across Subject-first and Object-first sentences. German case marking enables immediate identification of grammatical roles even in non-canonical orders. Study 2 (Korean, 60 participants, 120 items) implemented the same 3×2 design with translated materials using the Korean particle system to maintain the immediate indentifiability analogous to the German morphology. Presentation of the noun phrases contained the article in German and particle in Korean. Examples can be found in Table 1.

Linear mixed-effects models contrasted SOV vs. OSV and both Given and New vs. Implied referents. German showed a graded IS hierarchy (Given<Implied<New) and early WO effects at NP1. Korean showed a binary IS contrast (Given<Implied=New), with WO effects emerging later at NP2. An NP1 interaction (SOV-Given<OSV-Given) suggests reanalysis, whereby NP1 may initially be interpreted as the object of a topic-dropped structure rather than a dispreferred OSV structure. A summary of results can be seen in Table 2 and the related plot in Figure 1.

Overall, the cross-linguistic pattern supports the view that syntactic and discourse-based expectations jointly guide incremental comprehension. Sentences are processed more easily when NP1 matches expectations derived from discourse context or canonical grammatical roles. When these expectations are violated, processing slows, although the timing and magnitude of WO effects differ across languages depending on morphosyntactic properties such as case marking, argument drop, and topic interpretations.

References

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Figures and Tables

		Ein Bäcker ging auf ein Konzert. Ich habe gesehen, dass ... <i>A baker went to a concert. I saw that ...</i>	한 제빵사가 콘서트에 갔다. 나는 ... <i>A baker went to a concert. I ...</i>
Givenness	Word Order	German Sentence Continuation	Korean Sentence Continuation
G-first	SOV	... der Bäcker dort gestern {I:den Musiker ; N:einen Piloten} <i>the baker [SUBJ] there yesterday {I:the musician ; N:a pilot} [OBJ] ...</i>	... 제빵사가 어제 그곳에서 {I:음악가를 ; N:조종사를} <i>the baker [SUBJ] there yesterday {G:the musician ; N:a pilot} [OBJ] ...</i>
I-first	SOV	... ein Musiker dort gestern {G:den Bäcker ; N:einen Piloten} <i>a musician [SUBJ] there yesterday {G:the baker ; N:a pilot} [OBJ] ...</i>	... 음악가가 어제 그곳에서 {G:제빵사를 ; N:조종사를} <i>a musician [SUBJ] there yesterday {G:the baker ; N:a pilot} [OBJ] ...</i>
N-first	SOV	... ein Pilot dort gestern {G:den Bäcker ; I:den Musiker} <i>a pilot [SUBJ] there yesterday {G:the baker ; I:the musician} [OBJ] ...</i>	... 조종사가 어제 그곳에서 {G:제빵사를 ; I:음악가를} <i>a pilot [SUBJ] there yesterday {G:the baker ; I:the musician} [OBJ] ...</i>
G-first	OSV	... den Bäcker dort gestern {I:der Musiker ; N:ein Pilot} <i>the baker [OBJ] there yesterday {I:the musician ; N:a pilot} [SUBJ] ...</i>	... 제빵사를 어제 그곳에서 {I:음악가가 ; N:조종사가} <i>the baker [OBJ] there yesterday {I:the musician ; N:a pilot} [SUBJ] ...</i>
I-first	OSV	... den Musiker dort gestern {G:der Bäcker ; N:ein Pilot} <i>the musician [OBJ] there yesterday {G:the baker ; N:a pilot} [SUBJ] ...</i>	... 음악가를 어제 그곳에서 {G:제빵사가 ; N:조종사가} <i>the musician [OBJ] there yesterday {G:the baker ; N:a pilot} [SUBJ] ...</i>
N-first	OSV	... einen Piloten dort gestern {G:der Bäcker ; I:der Musiker} <i>a pilot [OBJ] there yesterday {G:the baker ; I:the musician} [SUBJ] ...</i>	... 조종사를 어제 그곳에서 {G:제빵사가 ; I:음악가가} <i>a pilot [OBJ] there yesterday {G:the baker ; I:the musician} [SUBJ] ...</i>
		... angesprochen hat. ... <i>talked to.</i>	... 부르는 것을 목격했다. ... <i>call out to witnessed.</i>

Table 1: Example Item in German and Korean

G - Given, I - Implied, N - New, S - Subject, O - Object, V - Verb

	NP1	NP2
GER		
I:G	$\beta = -26.64 / z = -3.75$	$\beta = -15.31 / z = -2.70$
I:N	$\beta = 26.90 / z = 3.41$	$\beta = 8.03 / z = 1.19$
WO	$\beta = 44.50 / z = 5.28$	$\beta = 5.66 / z = 0.79$
I:G & WO	$\beta = -14.16 / z = -1.25$	$\beta = -21.47 / z = -2.26$
I:N & WO	$\beta = 14.19 / z = 1.27$	$\beta = 0.49 / z = 0.04$
KOR		
I:G	$\beta = -56.84 / z = -5.52$	$\beta = -65.44 / z = -3.34$
I:N	$\beta = -0.79 / z = -0.09$	$\beta = 40.70 / z = 1.73$
WO	$\beta = 3.18 / z = 0.36$	$\beta = 187.80 / z = 5.19$
I:G & WO	$\beta = 41.26 / z = 2.69$	$\beta = -23.23 / z = -0.55$
I:N & WO	$\beta = 12.08 / z = 0.77$	$\beta = 44.38 / z = 1.22$

Table 2: Results of German and Korean experiments

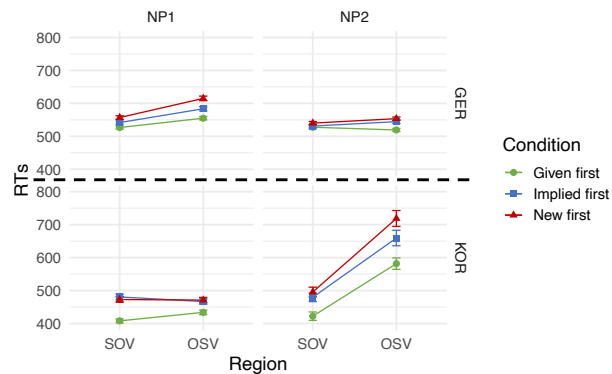


Figure 1: Given-Implied-New

Interaction Plot Residualized by Word Length; Reading Times for German (top) and Korean (bottom) on NP1 (left) and NP2 (right) averaged by NP1 Information Status