

Constraints on phrase structure choice across languages

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Speakers of different languages vary in the phrase structures they choose to identify a person in referentially ambiguous situations, e.g., when there are two children in the situation and one needs to be talked about, as in "the boy being kissed by the girl". Some languages mainly prefer to use passive structures as in English and Chinese, whereas others mainly prefer active structures, as in Serbian and Greek (e.g., the boy the girl is kissing) or show reduced preference for passives along with other alternative structures, as in Spanish.

The preference for passives, if present in a language, is modulated by two conceptual features. First, the animacy of the entity being talked about matters: if the entity being identified is an inanimate object (e.g., a ball), the preference for passives is reduced and speakers are more likely to produce an active phrase ("the ball the boy is kicking"). Second, the similarity between the two entities involved in the phrase, e.g., the boy and the girl in "the boy being kissed by the girl", also modulates structural choices: when similarity is high more passives are produced than when similarity is low.

These conceptual influences on structural choices indicate that speakers experience more difficulty in production planning when the concepts involved in the phrase are more similar, and thus, are equally likely to be agent or patient in the event (e.g., a girl and a boy can play either role). This possibility is supported by eye-movement and brain imaging data in English production, and comprehension difficulty for active structures in languages that prefer passives.

Nevertheless, languages like Greek and Serbian rarely produce passive structures, regardless of animacy or similarity between entities as they do more generally across all structures in the language, and thus, speakers do not have other viable alternative structure to use. That is, the statistical regularities of these languages are such that speakers do not use or do not learn to use passive structures.

Therefore, we argue that the preference for passive structures reflects processing constraints in sentence planning, namely, competition between alternative semantic roles in an event (agent/patient), but this processing constraint ultimately depends on language specific properties. Overall, regularities external to the speaker and internal cognitive processes contribute to the variability of structure choices across languages.