

The Influence of Typological Organization on Children's Temporal Understanding Laura Wagner, Ohio State University

Several typological generalizations can be made about linguistic tense systems (Comrie, 1985): Basic tenses (past, present, and future) are defined relative to a deictic origin point, usually the utterance time; tenses can signal relative distance from the origin point (remoteness); future times are coded less precisely than past times. Two studies investigated children's ability to locate events in time, aiming to: (1) provide richer detail of children's developing understanding of temporal language, (2) examine how children are influenced by typologically common patterns of temporal organization, and (3) compare performance with explicit temporal expressions vs. inferred temporal information. We hypothesized that typologically common features of temporal organization would influence children, even when these are not explicitly marked in a particular item (e.g. "Temporal-Inference" experimental items) and when these are not explicitly grammaticized in the child's language (e.g. remoteness in English).

Temporal understanding was tested in a timeline task: children located pictures of events on the past, present, and future parts of a line (present was marked with a star). Two procedurally identical versions of the study were conducted using different items and orderings to increase generalizability. On Explicit-Marking trials, events were described with specific temporal terms, including tenses and adverbial expressions. Across studies, 18 distinct temporal expressions were tested including *next week*, *yesterday*, *is doing*, *before/after*. On Temporal-Inference trials, events were labeled but their specific temporal properties had to be inferred from world knowledge (e.g. *driving spaceships to work* = future; *taking elevator to testing session* = past). Across studies, 14 different events were tested.

Both item types ranged in deictic orientation (past, present, future) and how distant the events were from the present (e.g. *dinosaurs on earth* < *you wore diapers* < *you drove here*). Children's timeline placements were scored for whether the event was placed correctly relative to the deictic center, how far away from the center the event was located, and whether linked items were placed in the correct linear order independently of the center (i.e. was *Last year* placed further left than *Next year*).

A total of 69 children (46 5-year-olds and 23 8-year-olds) were tested at a local science museum. Preliminary results (see Figure 1) found that children were sensitive to typological patterns with both Explicit-Marking and Temporal-Inference items: they were successful at deictic orientation (they placed events on the correct part of the line); however, for young children, this success interacted with remoteness: remote events were more likely to be placed correctly ($F(2,66) = 4.0, p < .05$). Also consistent with typology, young children were marginally less accurate at linear ordering for future events relative to past events ($t(45) = 1.9, p < .06$). Detailed analyses looking at differences among specific events and linguistic cues are underway.

The findings suggest that children are influenced by larger typological properties of language structuring even outside of specific instantiations of that structure. The results will be compared to related work (Hollebrandse et al., 2010); and how typological regularities may arise from underlying human cognitive capacities will be discussed.

References

Comrie, B. (1985). *Tense*. Cambridge University Press.

Hollebrandse, B., Arosio, F. and Dressler, W. (2010). ‘Acquiring Tense: A crosslinguistic comparison in 17 languages’. Poster at GALANA, Toronto, Canada

Figure 1: *Percentage correct (chance = .33) for Deictic placement for Temporal Inference and Temporally Marked items in two time periods (Past and Future) for items linked to times Near present (e.g. driving to/from the testing session) or the Far from present (e.g. being able to drive yourself).*

