Before and after with temporal and spatial meaning in language acquisition

Veronika Harmati-Pap

Research questions:
- Do Hungarian postpositions with spatial meaning have an influence on the appearance of temporal meanings during language acquisition?
  - Előtt ‘Before/in front of’ – Után/mőgött ‘After/behind’
  - Frame-Hypothesis: The conceptual interpretation of space predatates the conceptual interpretation of time. (Bowerman, 1983)

Background:
If a child can talk about something, he/she can make a representation about it as well. (Landau, Jackendoff, 1993)

The order of the acquisition of locations in Hungarian:
BEFORE > BEHIND

age 2: suffixes
age 3: postpositions
goal-types > source-types
in, into > from / expedition

n, on > under > beside, between, before (egocentric) > behind, before (located object)"

The order of the acquisition of the temporal relations:
AFTER > BEFORE

In temporal meaning, after (‘után’) appears first (Crain & Thornton, 1998) – The order of the events is described with ‘after’, then it should be easier in production and processing as well.

Languages using relative reference frame (English: ‘Turn to the left’) vs. Languages using absolute reference frame (Kukuk Taryoroe ‘Turn to east’)
– Languages using an absolute reference frame for space use the same for temporal representation (Boroditsky, 2009)
– Conceptual Metaphor Theory: We interpret time as a one-dimensional domain, thus the one-dimensional components of space are mapped on it. The direction of mapping is from the domain of SPACE to the domain of TIME – This fact presumes the primacy of spatial terms. (Szamaras Vera Zsé, 2006)

“Christmas is near”

about the relation of the concepts:

Methods:
- experiment divided into two sections – spatial section; temporal section – 4 days apart
- from 4.4 to 7, 15 children, mean: 5.6 (adult control)
- personal interview – group divided into two subgroups according to which task was first (audio and video records)
- elicited production task (EPT) and truth value judgement (TVJT)

Spatial:
- toy-furniture, Hide and Seek with 2 puppets (the boy hid, the girl sought)
- 15 scenes: 4 TVJT, 4 EPT, 7 filler questions

Temporal:
- 3 picture-sequences with 3 daily events
- 9 questions - 3 for each sequence: 1 Forced choice, 1 EPT and 1 filler

Results:

Spatial:
- Előtt ‘before’ in front of 42%; Mőgött ‘behind’ 32%; Adults: 67%-83%

The rate of answers with spatial postpositions by different age groups

Temporal:
- Előtt ‘before’ – Után ‘after’ 28% - 42% (Adults: 50%-50%)
- 15% of the data: usage an extra made-up scene before the first picture of the sequence instead of relating it to the forthcoming one. (1)
- 4-year-olds: higher percentage of “before” (50%-39%)

The rate of answers with temporal postpositions by different age groups

- Supported hypotheses
  (Lukács & Szamaras 2014; Crain & Thornton 1998)
  
- előtt ‘before’, in front of with spatial meaning is more frequent than mőgött ‘behind’
- után ‘after’ with temporal meaning is more frequent than előtt ‘before’

Conclusion… Could we find any influence?

Expediency: Expediency is one of the main features in conceptual development, not only in the development of spatial concepts (Fléh 2013), but also in the development of temporal concepts, thus the linguistic development of both conceptual domains is led by expedience.

EXPEDIENCY IN SPACE EXPEDIENCY IN TIME

Egocentric view Order of events

But we don’t see primacy from this data, just parallelism -> forthcoming studies.

Hungarian előtt ‘in front of’ could have a lexical effect on the appearance of előtt ‘before’ with a temporal meaning.

What about the 4-year-olds? – We need more data for a definite answer.

Summary:
- The developments of the postpositions in different conceptual frames are parallel, if we see them from the aspect of expedience
- The frequent use of előtt ‘in front of’ may facilitate its use with a temporal meaning.

Main references:


Conclusion… Could we find any influence? (Lukács & Szamaras 2014; Crain & Thornton 1998)

- Előtt ‘before’ in front of with spatial meaning is more frequent than mőgött ‘behind’
- Után ‘after’ with temporal meaning is more frequent than Előtt ‘before’

Spatial: Előtt ‘before’, Után ‘after’

Temporal: Előtt ‘before’, Után ‘after’

mean percentage of előtt ‘before’ in front of and mőgött ‘behind’

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