Before and *after* with temporal and spatial meaning in language acquisition

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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/mögött* –'After/behind'
- Frame-Hypothesis: The conceptual interpretation of space predates 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/
expediency
in, 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.

...about the relation of the concepts:

➔ Languages using relative reference frame (English: "Turn to the left") vs. Languages using absolute reference frame (Kuuk Tayorre "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 compo nents 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.
(Szamarasz Vera Zoé, 2006)

"Christmas is near"

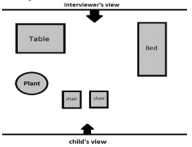
*egocentric: the terms encode a projective notion with regard to the position of the speaker
**located object: the terms encode a projective notion with regard to the position of a located object.

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**



Experimenter: *Where do you think the boy is?*
Helper: *He is hiding behind the chairs.*
The girl: *Did the girl say it right?* - Subject: *Yes*
Experimenter: *Please tell me, where the boy is now.*
Subject: *He is in front of the chairs.*

Temporal:

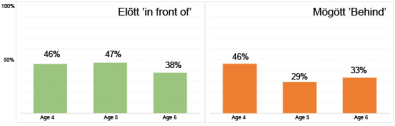
- **3 picture-sequences with 3 daily events**
- **9 questions - 3 for each sequence: 1 Forced choice, 1 EPT and 1 filler**

Forced choice
Experimenter: *When does the duckling watch TV? Before or after he goes to bed?*
EPT:
Experimenter: *When does the duckling take a bath?*

Results:

Spatial

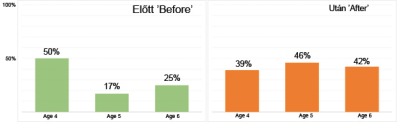
- Előtt *'before, in front of' 42%* - Mögött *'Behind'* 32%; Adults: 67%-83%



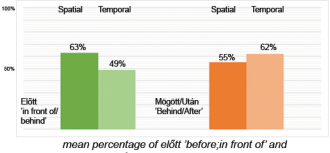
The rate of answers with spatial postpositions by different age groups

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. (!)
- 4 year-olds: higher percentage of "before" (50%-39%)



The rate of answers with temporal postpositions by different age groups



mean percentage of előtt 'before;in front of' and után;mögött 'after; behind'

- **Supported hypotheses (Lukács&Szamarasz 2014; Crain&Thornton 1998)**
  - ***előtt*** **'before, in front of' with spatial meaning is more frequent than *mögött* '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 (Pléh 2013), **but also in the development of temporal concepts,** thus the linguistic development of both conceptual domains is led by expediency.

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 expediency
- The frequent use of *előtt* 'in front of' may facilitate its use with a temporal meaning.

Main references:

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