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Prefix po- in acquisition from a cognitive linguistic perspective

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Prefix *po-* in acquisition from a cognitive linguistic perspective

Akwizycja prefiksu *po-* z perspektywy językoznawstwa kognitywnego

The article presents an analysis of speech development of one Polish-speaking child starting from the use of fixed rote-learnt phrases to abstract schemas, which allow for production of novel adult-like utterances. The research, which is based on dense corpus data, is an attempt to trace the changes in the child's speech and explain them on the basis of Cognitive Linguistics assumptions.

Słowa kluczowe: przyjęcie pierwszego języka, prefiks *po-*, schematy wypowiedzi, badanie korpusu

Key words: first language acquisition, prefix *po-*, formula, utterance schemas, corpus study

In Cognitive Linguistics approach to first language acquisition the role of innate linguistic knowledge, postulated by Generativists, has been minimalized. Instead, the 'bottom-up" approach to the development of language has been proposed, which means that the knowledge of structures emerges from their everyday use. To emphasize this particular kind of approach to linguistic description, the approach is called "usage-based" (Langacker 2000).

The process of first language acquisition from the angle of Cognitive Linguistics always starts with the repeated use of formulas. They are fixed memorized phrases, which become entrenched with time. After the entrenchment of a given phrase, it becomes easily elicited and executed. Such an entrenched phrase is called a unit (Langacker 1999:93).

Thus, the first units are fixed rote-learned phrases which, after their full entrenchment, are broken into components. At this time, abstract utterance schemas are formed (Tomasello 2000:66). The process of extracting the schemas is gradual. First, individual open slots are identified leading to the formation of low-level

schemas. Open slots may be filled with a number of lexical items. In this way children start to produce novel utterances, which have the same structure as the abstract schemas.

To illustrate, let me mention a partly schematic construction which is the earliest structure with a preposition to appear in the process of the acquisition of Polish (Łozińska 2013). The low-level schema is PERSON *do domu* 'to home', where the slot PERSON may be filled with a number of specific expressions. Dąbrowska and Kubiński (2003: 23) state that with time the schema becomes more abstract, namely PERSON[1] *do*[2] 'to, into' + NOUN + GENITIVE ENDING, which allows for creating novel utterances.

Dąbrowska (2000) in her case study traced the development of utterance schemas of English interrogative structures, starting from invariant formulas such as *Whassis?*, through formulaic frames like *Where's __ ?* to abstract schemas with many open slots. Out of these formulas a child's grammar develops. One of important conclusions of Dąbrowska's study is that children rely on low-level schemas for much longer and to much greater extent than it had been assumed before the study.

The aim of the present research is to trace the development of abstract utterance schemas from formulaic expressions, which at the beginning of speech development are used automatically in a rote-like fashion. The analysis will be carried out on the speech data of one Polish-speaking child – Inka and will encompass utterances coding motion events by means of the prefix *po-*. The schema will be more complicated and consisting of more elements than the one described by Dąbrowska and Kubiński (2003) schema: PERSON *do* 'to, into' + NOUN + GENITIVE ENDING.

The patterns of language acquisition will be based on the child language data collected by Professor Szuman at the Jagiellonian University. Szuman's diaries were computerized by Magdalena Smoczyńska (1985) and included in the computer database CHILDES (the Child Language Data Exchange System), which is available on the Internet (http://childes.psy.cmu.edu/). The data were collected in a written form usually every day. In consequence, the created corpora are extremely dense, which makes them an excellent base for research. The corpus for Inka, which will be analysed in the present study, covers the observation starting at the age 0;10 till she was 4;0. After this age the changes in the development of the child's grammar are not so noticeable and easy to trace.

There are as many as eight senses of *po-* listed in the Dictionary of the Polish Language (*Słownik języka polskiego PWN*, 2010). One of them codes the beginning

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[1] Open slots are written in SMALL CAPS.
[2] Invariant parts of schemas are written in italics.

of an activity with verbs of movement, for instance, *pobiec* 'run', *polecieć* 'fly', *popłynąć* 'swim', as well as with verbs which do not denote movement such as *pokochać* 'love', *poczuć* 'feel'. Only a few instances of senses other than the beginning motion were recorded in the first four years of Inka's life and in the present study only the patterns of development of the motion sense of *po-* will be traced.

On the basis of the above assumptions of Cognitive Linguistics the following hypotheses are made: i.) the process of acquisition of motive structures will be gradual and will proceed from rote-learned formulas, through low-level schemas, to abstract schemas; ii.) the process of speech development as far as utterances containing *po-* are concerned will display a significant period of heavy reliance on low-level schemas (invariant formulas) or formulas with one or two open slots; iii.) there will be no sudden improvement in performance, which would mark the acquisition of a grammar rule.

Since the prefix *po-* is predominantly used with verbs of movement (such as *iść* 'walk', *jechać* 'go by car', *lecieć* 'fly'), what is basically presented in the article is Inka's gradual process of learning how to code motion events. Let us analyse in a greater detail what happens in her speech during the period from 1;7,28 to 3;4,18 when the child definitely progresses from a fixed formula, as in (2) and produces an adult-like novel utterance like (1).

> (1) 3;4,18 mamusiu nie mogłabyś tak wszystko porobić, no tak wszystko żeśmy **poszli** na spacer z tatusiem daleko, do parku może.
> 'mummy couldn't you do everything, everything so that we could go somewhere far with daddy, to a park maybe'

The first motion event coded by means of the prefix *po-* occurred at age 1;7.28. What is worth noticing is the fact that Inka's first recorded use of the structure was immediately followed by her mum's comment, in which another preposition, namely *na* 'on', was used. What is more, the child was encouraged to repeat the second version of the utterance, as shown in (2).

> (2) 1;7.28 *CHI[3]:   tatuś **poszedł** do domu.
>   'daddy went to home'
>   *MAM[4]: tatuś **poszedł** na Akademię, Akademię.
>   'daddy went on academy'
>   *MAM: powiedz Inusiu Akademia
>   'Say Inusia academy'

For as long as two months, Inka used the formula PERSON *poszedł(szła) do* ('went to') PLACE without dropping the subject or replacing the preposition *do* 'to' with

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³ Abbreviation *CHI stands for 'child'.
⁴ Abbreviation *MAM stands for 'mother'.

other possible prepositions in these slots items. The slot PERSON was always present and filled with names of members of the family, including Inka herself. The slot PLACE was filled with places conceptualized as containers (e.g. *kościół* 'church', or *szkoła* 'school'), which is a natural consequence of the use of the preposition *do* 'to'. During these two months as many as twenty phrases sharing this structure were recorded.

According to an operational definition of a formula postulated by Dąbrowska (2000), it is the combination of words which recurs again and again. This recurring use leads to the conclusion that these are the strings of units that are stored in memory. Any sequence of units (with or without a slot) which is repeated five times is treated as a formula. Thus, the recurrent use of the word combination PERSON *poszedł(szła) do* ('went to') PLACE, repeated twenty times, can be treated as an instance of a formula.

Let me note that the shorter, less complicated schema described by Dąbrowska and Kubiński (2003), namely PERSON *do* 'to, into'+ NOUN + GENITIVE ENDING, had been incorporated into this larger one, which explains the fact that the slots PERSON and NOUN were open starting from the first use of the analysed schema. In fact, before accomplishing the difficult task of coding motion events by means of verbs prefixed by *po-*, Inka had extracted the abstract *do* 'to' schema (Łozińska 2013) and successfully incorporated it into a larger one.

A phrase different from the fixed phrase PERSON *poszedł(szła) do* ('went to') PLACE was produced at age 1;9,23 when the preposition *do* 'to' was substituted with *na* 'on' (shown in (3)). The phrase *na akademię* 'on academy' must have been taught to Inka by her mum who had repeated it many times before since Inka's father worked at the academy and, incidentally, was a favourite topic of Inka's conversations.

(3) 1;9.23   *CHI: tatuś **poszedł** na Akademię.
                        'daddy went on academy'

At exactly the same time yet another change in Inka's speech was recorded. Since Polish is a pro-drop language, Inka realized after some time that the agent of the action may be omitted and inferred from the context. Starting from age 1;9.23 the initial slot of the low-level schema, namely PERSON, was frequently, in an adult-like fashion, left empty, as in (4). It is remarkable that in the course of the first two months of the use of the formula, all utterances, with no exception, included an explicitly stated agent of the action.

(4) 1;10,25 *MAM: gdzie **pojechał**?
                        'where did (he) go?'
              *CHI: do Katowic pojechał.
                        'went to Katowice"

At age 1;9.24, Inka started using another motion verb prefixed by *po-*, namely *jechać* 'go in a vehicle' (as in (5)).

> (5) 1;9.24   *CHI: Inusia **pojedzie** tramwajem z tatusią.
>   'Inusia will go by tram with daddy'

The question that arises is whether this utterance marks the opening of another slot in the already existing schema or maybe it is a separate schema which first overwrites the already acquired one with *iść* 'go' and with time merges with it. Although at the end of the analysed period the child had seemingly acquired a higher-level schema with the slot for a verb open, it is possible that at the beginning she still operated with two memorized templates each with only two slots open (for PERSON and PLACE). The answer to this question requires a further study of the development of other schemas.

It took almost another month for Inka to use yet another prefixed verb, namely *lecieć* 'fly', which is shown in (6).

> (6) 1;10.27   *CHI: tatuś **poleciał** autem busem na Akademię.
>   'daddy flew by car by bus on academy'

At age 1;11.23, Inka produced an elaborate adult-like utterance, shown in (7). The fact that the trajector, for the first time in the recorded data, is inanimate also marks the beginning of non-egocentric speech. In other words, the child started using inanimate objects as trajectors of motion events she coded.

> (7) 1;11.23   *CHI: Hop, **poleciała** piłeczka mała, tam pod szafę.
>   'Hop, flew a little ball, there under wardrobe'

This moment in the speech development is particularly remarkable since children tend to talk about themselves as the agents of the actions they are coding (Łozińska and Góralczyk 2015). However, Inka, when talking about motion expressed by means of the prefix *po-,* did not predominantly talk about herself. On many occasions other members of family became trajectors of motion away from the speaker, which generally meant that the person had vanished, was no longer visible or accessible. It is characteristic that Inka used the prefix in her answers about somebody's location, as in (8).

> (8) 2;6.9   *BAB[5]: a gdzie jest twój tatuś?
>   'where is your daddy?'
>   *CHI: poszedł na Akademię, pojechał autembusem, daleko.
>   'he went on academy by carbus, far away'

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[5] Abbreviation *BAB stands for 'grandmother'

To summarize, the findings presented in the article strongly suggest that in the first years of speech development, Inka heavily relied on fixed formulas or low-level schemas, which confirms the first hypothesis. In the first period of using the schema, all utterances shared exactly the same structure: an animate agent, the same verb – *iść* 'go', the preposition *do* 'to' and the place which was the goal of movement.

The second hypothesis is also confirmed by the fact that for as long as two months, Inka's utterances coding motion events away from the speaker were exclusively based on a low-level formula PERSON *poszedł(szła) do* ('went to') PLACE. After two months, she started to use another verb *jechać* 'go by car' in the schema, however, it is possible that schema PERSON *pojechał(a) do* ('went to') PLACE functioned for some time as a separate one and then overwrote the one with *iść* 'go'.

Finally, in the course of Inka's speech development, there was no sudden improvement in the complexity of utterances, which would have marked the acquisition of a grammar rule. Instead, the acquisition of new structures proceeded in a piecemeal fashion. All recorded changes point rather at heavy reliance on low level schemas before a slot is identified and filled with some other lexical item. What is more, the analysis of Inka's speech development shows the child's ability to build longer and more complicated schemas (e.g. PERSON *poszedł(szła) do* ('went to') PLACE) on the basis of shorter ones (e.g. PERSON *do* 'to, into'+ NOUN + GENITIVE ENDING), which had already been 'decomposed' and became abstract.

Dictionary

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Streszczenie

Niniejszy artykuł przedstawia analizę rozwoju mowy dziecka zaczynającą się od powtarzania utartych zwrotów do tworzenia abstrakcyjnych schematów pozwalających na formułowanie własnych, niezasłyszanych wcześniej wypowiedzi. Analiza oparta jest na bogatym korpusie danych jednego polskojęzycznego dziecka. Badania zaprezentowane w artykule potwierdzają hipotezy wywodzące się z założeń językoznawstwa kognitywnego dotyczące charakteru procesu uczenia się pierwszego języka. Hipotezy te dotyczą przede wszystkim stosunkowo długiego okresu polegania wyłącznie na schematach niższego rzędu oraz braku momentu wyraźnego postępu w rozwoju mowy dziecka, który wskazywałby na opanowanie konkretnej reguły gramatycznej.