ACQUISITION OF MORPHOLOGICAL CATEGORIES AND VOCABULARY IN EARLY ONTOGENESIS OF A CZECH CHILD

PAVLA **CHEJNOVÁ**

KAROLINUM

Acquisition of Morphological Categories and Vocabulary in Early Ontogenesis of a Czech Child
Politeness in Czech Academic Culture

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1.
INTRODUCTION

This monograph introduces the process of vocabulary and grammar (primarily morphology) acquisition in one Czech child over a long time span. The research is based solely on the analysis of authentic material and covers the period from the onset of speech till three and half years of age in the target child's development. The longitudinal study is oriented toward the acquisition of lexicon and acquisition of grammatical categories of inflectional parts of speech, namely nouns, adjectives, pronouns and verbs. The analysis is mostly quantitative, largely building on concepts of pre-morphology, protomorphology and modularised morphology / morphology proper (Dressler, W. U. (ed.), 1997; Voeikova, M. D., Dressler, W. U. (eds.), 2002; Bittner, D., Dressler, W. U., Kilani-Schoch, M. (eds.), 2003; Stephany, U., Voeikova, M. D., (eds.), 2009).

The approach is constructivist, presupposing active mental processing of language input by a child. This approach assumes that in the first period of development the child uses mostly rote-learned forms without fully understanding their grammatical meanings. Therefore, in the pre-morphological stage, the child uses most lexemes only in one grammatical form. These lexemes could be referred to as base forms that do not yet express any grammatical categories. In the next, protomorphological stage, first contrasts of grammatical categories start to appear; for example, in nouns, the contrast between the nominative singular expressing the agent and the accusative singular expressing the patient / affected entity usually appears among the first contrastive forms. In verbs, contrast between infinitives, present tense forms and past participles can be observed. In the protomorphological stage, the number of contrastive forms increases and the first miniparadigms start to appear, i.e. one lemma is used at least in three different forms in one month of recording. In the last stage, modularised morphology, the grammar of the child becomes similar to the grammar of adult native speakers, and the child is able to use most of the categories of the mother tongue appropriately.

The presented study briefly addresses the pre-morphological stage, but the main focus is on the protomorphological stage, describing the first contrasts and miniparadigms in the target child's oral production between 2.8–3.6 years of age[1]; this span of

1 Age is usually presented in the format year, month, day, e.g. 2.8.1 means that the child is two years, eight months and one day old.

eleven months is analysed quantitatively. The study is based on an analysis of authentic material: a corpus of transcriptions of audio recordings of one Czech monolingual boy in verbal interactions with adults. As supportive material, diary records are used to illustrate the development of morphology. Furthermore, for the analysis of the lexicon, diary records serve as the primary source.

Chapter 2 introduces the results of previous studies on Czech language acquisition and the theoretical background of the research. Chapter 3 provides a detailed description of the methodology and data. The analysis of the first 1000 lexemes in the target child's lexicon is addressed in chapter 4. As the primary source of material analysed in chapter 4, diary recordings are used as the child was not very talkative after onset of speech and also because his utterances were unintelligible, thus making it impossible to use recordings. The list of the first 1000 lexemes in the child's active vocabulary is presented in chronological order in appendix A, including pronunciation, development of forms and English translation. An analysis of parts of speech in the first lexicon and the rate of acquisition is provided in this chapter as well.

Chapter 5 briefly describes the basics of Czech nominal and verbal morphology for those who are not native speakers. Chapter 6 addresses the pre-morphological stage, briefly describing the first syntactic and morphological phenomena occurring in the first two or more word combinations in the child's oral production. Chapter 7 briefly addresses syntactic development.

Chapters 8, 9, 10 and 11 are dedicated to discussing the acquisition of morphological categories of inflecting parts of speech – nouns, adjectives, pronouns and verbs. A detailed quantitative analysis of authentic materials is presented, covering the acquisition of particular grammatical categories. With respect to nouns, adjectives and pronouns, the sequence of acquisition of number (singular and plural), grammatical gender and all seven cases in relation to their syntactic and pragmatic function is presented; with respect to verbs, the acquisition of person, number, mood, tense, aspect, voice and their interrelation in syntactic and pragmatic functioning is addressed. In chapter 12, the results discussed in individual chapters are finally summarized and commented on. The description of the sequence of grammatical categories acquisition helps us answer the question concerning what factors have the strongest influence on development. The results support the assertion that both grammatical and pragmatic competences are interrelated and that one limits the other. During the period of development when the child operates with only a limited number of grammatical and lexical means, he acquires primarily those means that he needs to fulfil his communicative goals. Therefore, pragmatics influence the acquisition of grammar. On the other hand, limited grammatical competence restricts the possibilities of how to operate with language, of how to choose one's most efficient communicative strategies. Later, during the period of development when the child has already acquired a plethora of communicative means, including most of the morphological categories that a given language expresses, pragmatics also play a crucial role, as the child is able to choose a communicative strategy according to contextual factors; thus, pragmatic and grammatical competences cannot be separated during any period of development.

To analyse relevant phenomena in child language acquisition, several quantitative indicators were used, e.g. number of contrastive forms actively used, number of mini-paradigms, number of base forms, mean length of utterance in words, and type-token ratio (see chapter 3 for methodology and procedures). The obtained results were compared with previous research on the Czech language and other typologically similar (highly inflectional) languages. The findings show that the development of the target child follows the same stages as those described in previous studies on Slavic and Baltic languages. Thus, the results support the claim that all children go through the same stages of development (Piaget, Inhelder, 1969), although the age at which children enter particular stages can differ over several months. As our child was a late talker, the present study also challenges the normative approach to language acquisition in children, which determines exact ages when a child should reach a certain level of language competence. Our child was one whose language development would be described by laypersons as follows: *He did not talk at all for a long time, and then he started to talk in whole sentences immediately.* However, detailed quantitative analysis shows the opposite – the development was not unusual, the child went through all stages of development; language acquisition was in fact gradual and regular. Hopefully, this study will also help anxious mothers worry less about their child's language development if it starts a bit later than in other children.

2.
THEORETICAL BACKGROUND

2.1 PREVIOUS RESEARCH

Current research approaches in the area of developmental psycholinguistics differ in their major orientation, whether they follow the nativist conception of Noam Chomsky (rationalistic approach, oriented toward problems of innate language abilities, Chomsky, 1965, 1988, Lust, 2006, Pinker, 1994, Sternberg, 1996); or are empiristic approaches that stress the role of learning, context, child directed speech and pragmatic function of language. Tomasello (2005) proposes a social-pragmatic approach to language acquisition in which children learn linguistic structures through intention reading and pattern finding in their discourse interactions with others. Finally, the interactionist approach to language acquisition considers the importance of both cognitive development and social environment (Clark, 2003).

More detailed theoretical explanations of different approaches and their development throughout the history of developmental psycholinguistics are presented, e.g. by Nebeská (1992), Průcha (2011), Slančová (ed.) (2008), Smolík (2007), and Šebesta (2005). Both crucial aspects, nativist and empiristic, were present in the pioneering works of language acquisition: The works of Piaget (e.g. Piaget; Inhelder, 1969), which are constructivist, held that the development of language is a result of the cognitive development of humans, but interactions with environment are also necessary; Vygotskij (1986) stressed the role of cultural and historical context, where the most important factor that influences cognition is language, and also emphasised the role of learning. Lev Vygotskij, Alexander Romanovich Luria and Alexei Nikolaevich Leont´ev presented a new approach that fused cultural, historical and instrumental psychology, an approach referred to as cultural-historical psychology. The approach emphasised the mediatory role of culture, particularly language, in the development of higher mental functions in ontogeny and phylogeny.

In the field of developmental psycholinguistics, intensive scientific research has been conducted abroad, but no linguistic research centre in the Czech Republic has addressed first language acquisition in a systematic way. Foreign scientific studies on the topic are available to Czech researchers (mostly in English[2]), and several excellent

2 For example, E. Clark's monograph *First Language Acquisition* (2003) presents findings of many studies carried abroad; basic findings in developmental psycholinguistics are presented in D. Crystal's *Listen to Your Child* (1986),

studies have also been published by Czech authors, but most of these are older. Ohnesorg's works focused on the phonetic development of his two children (1948, 1959) and language development in general (1948). Pačesová's work addressed the development of articulation and vocabulary (1968) and grammatical categories acquisition (1979). Příhoda's *Ontogeneze lidské psychiky I* / Ontogenesis of Human Psyche included a brief section on language acquisition (1963). Čáda's works also presented findings reported by foreign researchers (1906, 1908). Moreover, Jakobson was interested in child language (Jakobson, 1941). The work of Saicová Římalová (2013) focuses on verbal and nonverbal expressive means at the one-word stage and in early development; this work is based on the longitudinal observation of one child in a dialogue with adults and is essentially the only recent longitudinal study on Czech language acquisition. Work by the same author (2012) focuses primarily on intertextuality. Smolík (2002) addresses verb morphology acquisition in two Czech girls. Smolík and Seidlová Málková (2014) address the acquisition of grammatical, lexical and phonological categories in preschool children from a psychological and psychodiagnostic point of view; the authors also mention the lack of empirical studies on authentic materials regarding Czech language acquisition. Smolík also presents an experimental methodology in psycholinguistics (Smolík, 2006, 2009). In addition to linguistic and psychological studies, logopaedic and diagnostic studies have been conducted (Kutálková, 2002, 2005, Lechta, 2011, Sovák, 1978). Findings in the fields of developmental psychology (Langmeier; Krejčířová, 2006, Vágnerová, 2000, Šulová, 2004) and neurolinguistics (Koukolík 2006, 2008) are also available. However, language development is only briefly outlined in general; grammatical development lies beyond the scope of most studies. The most important findings reported in the above mentioned studies will be further commented on in chapter 12.

Most foreign research addresses the acquisition of English, which differs significantly from Czech in terms of typological features (analytic language), but several works on languages typologically similar to Czech have also been reported. Gvozděv (1949, 1961) described the acquisition of grammatical categories of Russian by his son. Zarębina (1965) recorded several aspects of acquisition of Polish in several children. Quality research in the field of developmental psycholinguistics has been conducted in Slovakia, centred at the University of Prešov (http://laboratorium.detskarec.sk). Slančová (ed.) (2008) presented several studies focusing on the early acquisition of Slovak, including semantic and pragmatic aspects of child language. Kapalková et al. (2010) presented findings obtained from large studies based on questionnaires completed by parents (TEKOS), which focused not only on passive and active knowledge of lexemes but also on morphological and syntactic development. The findings help to suggest norms in development according to the percentage of children who had reached that level at a certain age. Kesselová (2014) carried out a study on early development of conjunctions, relatives, correlatives and particles with conjunctive func-

and J. Stilwell Peccei's *Child Language* (1999) introduces the topic and also lists further readings. Grammatical morphemes acquisition in English is described by Brown (1973).

tions, relative adjectives and grammatical category of case, i.e. how children during early childhood acquire linguistic means to express relations between words and their expressive contexts. Slovak studies are particularly relevant as they describe a Slavic inflecting language that has many features in common with Czech. Thus, the findings will be referred to in this study when appropriate.

2.2 CROSS-LANGUAGE RESEARCH OF LANGUAGE ACQUISITION

As researchers began to realize the importance of analysing acquisition of inflectional and agglutinative languages, several studies on various aspects of the acquisition of different languages were published, e.g. Slobin (ed.) (1985a, 1985b, 1992, 1997), Bowerman (1973), and Bowerman, Brown (eds.) (2008). The results suggest that it is not possible to generalise the results obtained for analytical languages with fixed word order such as English. Children acquiring inflecting and agglutinative languages focus more on morphological factors, which play a crucial role in their respective languages for expressing relations between sentence elements.

Research on the acquisition of verbal and nominal morphological categories in typologically different languages was carried out in the international Crosslinguistic Project on Pre- and Protomorphology in Language Acquisition. The project started in 1993 under the coordination of Wolfgang U. Dressler (Österreichische Akademie der Wissenschaften). Researchers from several countries published studies on the acquisition of morphological categories in nouns and verbs. Each study typically included longitudinal recordings of one or two children (only few studies included data obtained for more children) during their early stages of development (the age usually did not extend beyond four years of age, but the studies did extend beyond the one-word stage). The analysed languages included agglutinative, inflectional and isolating languages. The languages could be assigned to a gradual continuum between two ideal language types in terms of verb morphology (Bittner, Dressler, Kilani-Schoch, 2003: xv):

1) inflecting-fusional type < --- > isolating type: Lithuanian – Greek – Russian – Croatian – Italian – Spanish – Yucateco Maya – German – Dutch – French – English

2) agglutinating type < --- > inflecting-fusional type: Turkish – Finnish – Yucateco Maya – the other languages

With respect to noun morphology, the languages in the analysed sample may be assigned to a continuum of ideal language types ranging from agglutinating to isolating ones, with inflecting-fusional languages occupying an intermediate position (Stephany, Voeikova, 2009: 3):

< ---------- >
agglutinating strongly inflecting weakly inflecting isolating

Turkish – Finnish – Yucateco Maya – Estonian – Croatian – Russian – Greek – German – Italian – Spanish – French

Palestinian Arabic, which was also included among the analysed languages, follows a non-linear root inflecting pattern as well as a linear suffixing one and thus cannot be easily placed within this scale. Therefore, the scope of analysed languages provides a fairly representative sample in the cross-linguistic project.[3]

The developmental approach that the authors follow does not assume an innate morphological module but is constructivist, i.e. based on the model of self-organising processes.

"Important constructivist principles are those of pattern selection and of self-organisation: pattern selection means that the child selects some forms in some contexts due to token frequency and saliency (cf. Bates and McWhinney, 1987). Self-organisation means that children do not merely imitate input elements, but construct themselves their patterns in reaction to the intake, i.e. in uptake and production" (Bittner, Dressler, Kilani-Schoch, 2003: xviii).

According to Dressler and Karpf (1995), language development is divided into three stages:

1) **Pre-morphological stage:** Extragrammatical morphological operations and precursors of later grammatical rules consisting only of rote-learned forms occur. The authors support the hypothesis that the input frequency of a certain word is a crucial parameter for early rote learning (Bybee, 1995). The selection of grammatical precursors is based on principles of naturalness and constructivism. In the pre-morphological stage, no system of grammatical morphology has yet become dissociated from a general cognitive system that handles, inter alia, words of whatever form (Bittner, Dressler, Kilani-Schoch, 2003: xix). Word forms usually occur in their base form with typically one form per lemma. If lexical and inflectional development are measured by the number of lexemes and grammatical types occurring at monthly intervals, the stage of pre-morphology will be characterised by a coincidence of these values, whereas in the transition to protomorphology the number of forms will gradually exceed the number of lemmas (Stephany, Voeikova, 2009: 4). Extragrammatical morphology[4] comprises a heterogeneous set of either acquired primitive or late sophisticated operations that resemble morpho-

3 In Dressler (ed.) (1997), the following twelve languages were analysed: Greek, French, Italian, Dutch, German, Swedish, Lithuanian, Russian, Slovene, Turkish, Georgian, and Huichol. In Voeikova, Dressler (eds.) (2002), the following languages were analysed: Croatian, Russian, Lithuanian, Italian, Spanish, French, Finnish, and Yucateco Maya.

4 Term first introduced in Dressler and Merlini Barbaresi (1994: 36–41).

logical rules but whose only unifying property is that some principle of morphological grammar is violated (e.g. blends, backformations, echo-word formation and similar reduplications) (Dressler, 1997: 6).

2) **Protomorphological stage:** Children detect and reconstruct or creatively construct morphological patterns of analogies or of first rules. To handle the increasing morphological complexity, a primitive system of morphology dissociates from phonology, syntax and the lexicon. "Protomorphology starts when the target-like inflectional contrasts become regular and when the respective forms are employed with (the majority of the) new lexemes. Furthermore, at this turning point, the verbs and the subject phrase are going to be established as obligatory parts of the utterance" (Bittner, Dressler, Kilani-Schoch, 2003: xxv).

3) **Morphology proper / modularised morphology:** "The child's system approach qualitatively, if not quantitatively, the adult models. In passing over to this stage, the two main functions, namely lexical enrichment and motivation need to be served. This leads to ever greater complexity, paralleled and even more increased by the accumulation of inflectional devices. In order to serve the different functions of inflection and verb formation, the primitive morphological system must dissociate, giving rise to separate submodules of inflection and word formation. In this way morphology becomes modularised. Hence morphology proper initiates when the basic language-specific properties of target morphology are acquired and structurally differentiated (i.e. compartmentalised) into verbal vs. nominal inflection vs. word formation" (Bittner, Dressler, Kilani-Schoch, 2003: xix). For some children, the emergence of miniparadigms (at least three forms of one lemma occurring in one month of recording) is simultaneous with the onset of protomorphology, whereas in others it occurs either before or after this onset.

The development towards morphological analysis and pattern recognition appears to be undissociable from a quantitative enrichment of lexical, syntactic and morphological structures. Overcoming a one-word stage appears to be a prerequisite for morphological development. The enrichment of syntactic complexity precedes or parallels qualitative changes in inflection (Bittner, Dressler, Kilani-Schoch, 2003: xxiii). Some children accompany the transition from pre-morphology to protomorphology with a spurt in verbal lexicon. Between individual stages, there are transitional periods that are characterised by the occurrence of features of both stages.

Research suggests that the morphology of agglutinative languages is usually acquired the most rapidly, followed by the rate observed for inflectional languages. Acquisition of analytical languages takes the longest time, which could be explained by the higher transparency of grammatical morphemes in both agglutinative and inflectional languages. The individual findings reported in the most relevant studies published within the framework of the project will be commented on in chapter 12, when the results of the present study will be discussed and compared to previous research.

3.
METHODOLOGY AND PROCEDURES

3.1 METHODS OF OBTAINING CHILD LANGUAGE DATA

Among the fundamental methods of obtaining child language data (oriented on grammatical phenomena production) are the following (classified according to Lust, 2006: 132–135): natural speech sampling, elicited production and elicited imitation.

1) Natural speech sampling

Authentic speech production of children in the form of audio recordings or video recordings is one of the most important sources of data regarding child language development. Such speech production provides information in the context in which a particular language phenomenon (in our study, for example, a particular grammatical category) occurs and it also enables the researcher to evaluate the level of a child's language acquisition in the developmental stage under study. It is possible to record occurrences of the new grammatical phenomenon and analyse its productivity and functionality in the following stages of development. If the researcher needs to maintain compatibility with previous research, it is advisable to retain the same criteria for the transcription of recordings. The detailed methodology for child language transcription is provided in the CHILDES database (http://childes.psy.cmu.edu, MacWhinney and Snow, 1985, 1990). "Natural speech samples can provide rich sources of evidence on children's language knowledge, but they are inherently limited. Specific constructions may not occur in a particular child's language sample simply because the pragmatic or cognitive context of the situation hasn't motivated them" (Lust, 2006: 133).

2) Elicited production

If the researcher wants to determine whether a child is able to use a particular construction, it is possible to motivate the child to use the construction by creating an appropriate context. The elicited production method could be used to test which language means the child would use if his/her task is to formulate a polite request (Bates, 1976) or which verbal means he/she would use when formulating questions (Thornton, 1996). The method investigates the real oral production of the child and illustrates which constructions are actively used.