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German Communicative Development Inventory

An Adaptation of the MacArthur-Bates Communicative Development Inventory for Toddlers

PL ACADEMIC RESEARCH

Introduction

For some years children's linguistic abilities have been a topic in German scientific, popular science and media publications. Unfortunately, most of the discussion tended to bemoan the lack of good linguistic abilities in young children. Statements about so-called language disturbance in young children dominate the discussion – with vastly exaggerated percentages of between 20 % and 33 % of preschool children suffering from "linguistic deficits", "language delay" or "language disturbance". Amongst two-year olds 20 % are said to be at risk to develop subsequent language impairment. Demands for a general screening of two-year-olds have been voiced repeatedly. It seems that there is little conception of language development as a developmental phenomenon which is part of human behavioural development and, just like other developmental phenomena, displays a large amount of variation.

Faced with this situation and a lack of norms for early language development in German-speaking children we felt it was high time to create an instrument for measuring early language development in German and provide norm data. We carried out a research project which altogether ran over four years at the Carl-von-Ossietzky Universität Oldenburg. For a large scale study of early language development, parental questionnaire data are required. We adapted the American Communicative Development Instrument (CDI) Toddler Scale (Fenson, Dale, Reznick, Bates, Thal & Pethick, 1994, 1st edition) to German. The adaptation required some changes in vocabulary, and a rewriting of some sections. We added a detailed section on inflectional morphology covering basic paradigms of German inflectional morphology. Thus, the instrument differs in a language and culture specific way from the American CDI, while keeping the common aim, namely to assess the typical course and variability of young children's language development as they make the transition from first words to grammar.

As a result of our cooperation with paediatricians' practices we realised the urgent need for a short form instrument which could be used to assess children's language level during a developmental check within the time limits of a paediatric consultation. In a second part of the study we therefore developed a short form version of our parental questionnaire.

Our CDI adaptation has the name FRAKIS which stands for "**FRA**gebogen zur früh**KI**ndlichen **S**prachentwicklung" – German for "questionnaire on early child language development". The name of the short form version adds a K, FRAKIS-K, "k" meaning "kurz" – German for "short".

The German version of FRAKIS, FRAKIS-K and the norming studies were published in 2009 as: Szagun, G., Stumper, B. & Schramm, S. A. (2009). *Fragebogen zur frühkindlichen Sprachentwicklung (FRAKIS) und FRAKIS-K (Kurzform)*. Frankfurt: Pearson Assessment. www.pearsonassessment.de . Since then, we have been contacted frequently and asked, if an English version was available. Unfortunately, as our results had already been published in German, we were not able to publish an article about our research in a scientific journal. We therefore decided to publish them in the present form. This presentation does not include the questionnaires itself, the norm tables and the exact instruction how to use and the questionnaires and how to analyse the data. The publisher Pearson Assessment & Information GmbH, Frankfurt am Main retains the copyright for these parts.

Due to the detailed inflectional morphology section of our questionnaire, data interpretation allows more than just a summing up of crosses and checking the scores against the norm data. It is possible to draw a child's linguistic profile which can render valuable insight into the child's grammatical development. For the use of the questionnaire itself, the norm tables and instructions for interpretation it is necessary to obtain the German version.

1 Normality and variability in language development

1.1 Average child or variability?

Language is a human behaviour of great importance. It enables us to communicate and it structures concept formation. Human children acquire language during the course of early childhood. This occurs as a natural process without specific instruction. All healthy young children acquire a first language – or mother-tongue. One can hardly stop a child acquiring her or his mother-tongue (Pinker, 1994). In typical development children acquire a basic vocabulary and a basic grammar during a time span of roughly three years. For most children this occurs between the ages of one and four years. They start with first words around their first birthday and have acquired the basic grammar of their first language by the age of four (Pinker, 1994; Tomasello, 2003; Szagun 2013). While grammatical learning will soon come to an end – with even rare structures being acquired and errors disappearing – vocabulary learning can be a life-long process.

Until around the end of the 1980s a dominant view was that language acquisition occurs in "stages" during which each child acquires the same linguistic structures and at the same age. While nobody ever defined exactly what constituted a "stage" in the sense of specifying which structures of a particular language belong to a specific stage and what constitutes the beginning and the end of a stage, the "stage" conceptualization has been surprisingly enduring (Stromswold, 2000). Less enduring has been the view that all children acquire language at the same pace. For a variety of languages studies began to show that individual children acquire language at widely differing speeds (Nelson, 1973; Goldfield & Reznick, 1990; Plunkett, 1993; Dromi, 1999; Bates, Bretherton & Snyder, 1988). This is particularly pronounced early on, i.e. during the transition from single words to a first grammar. Children do not acquire the same grammatical structures at the same age. Not only do they vary in tempo, but they also vary in their style of learning. For some children around two years of age vocabulary increases in one or several bursts, for others it increases more gradually. At the same age, some children regularly use two- and multiword utterances, others have hardly begun to combine words. Regarding their approach to learning, some children prefer nouns and use over 50 % nouns in their early language, others prefer "little words" – such as *off*, *that* and *there* (Nelson, 1973; Bates et al., 1988). Some children like to imitate, others do not. Differences in speed and

learning style during early language acquisition are well documented by now (Bates et al., 1988; Fenson, Dale, Reznick, Bates, Thal & Pethick, 1994; Fenson, Marchman, Thal, Dale, Reznick & Bates, 2007 (2nd edition); Szagun, Steinbrink, Franik & Stumper, 2006; Szagun, 2007a, 2013).

It seems paradoxical that nearly all children reach the same aim at roughly the same age, i.e. a basic grammar at around four years of age, yet they do so at varying speeds and in different ways. However, many developmental phenomena share this characteristic. There are aspects which are typical of all children and others which vary between them. This appears to be a characteristic of normal developmental processes. Thus, variation is the mark of normality – not sameness.

At the time when our research team started the research to be reported here this was not the view in which language development was generally and popularly depicted. Much of the prevailing literature in German – whether scientific or more general – characterised and still characterises language acquisition as a process occurring in the same stages at the same ages for all children (Grimm & Weinert, 2002; Grimm, 2003; Penner, 2004). The course of language acquisition is outlined in terms of a fictitious "norm child" (Grimm & Weinert, 2002; Jahn, 2005) whose empirical basis cannot be discerned.

For practitioners the decisive question is whether language acquisition in a particular child deviates so much from the normal or typical course of acquisition that it must be viewed as delayed or impaired. Neglecting individual variability and using a fictitious "norm child" as the standard of normality is not helpful in this process. A precondition for knowing whether development is delayed or even impaired is knowledge about what is normal in the population at what time. This includes the span of normal variability. One cannot know what is not normal unless one knows what is normal. Typical variability is empirically derived. It can be observed in a representative sample of the population concerned. Thus, the standard for what is normal in the acquisition of German by children has to be based on representative data on the acquisition of German and the observed typical variability during the course of acquisition. It was the aim of the present study to collect representative data in order to outline the typical course and variability of the acquisition of German during the early period of development.

1.2 Parental questionnaire as a tool for assessing variability in early language development

Studies with large samples are required in order to obtain data which represent the typical variability in language acquisition. Most research in language acqui-

sition has worked with spontaneous speech data and small samples of children. As the collection, transcription and analysis of spontaneous speech samples is a very time consuming process, this methodology is not suitable for large samples. Parent report instruments became the method of choice for assessing variability in a representative sample, because they enable researchers to study language development in large samples. Data collection by parental questionnaire is cost-effective and can be performed in a relatively short time.

A precondition for relying on parent report is its reliability. It has to be ascertained that parental report reflects a child's linguistic level accurately. This is more likely when a recognition format is used in which parents are required to respond in a yes/no fashion to whether a given linguistic item is present in their child's speech or not (Fenson et al., 1994; Fenson et al., 2007). Open questions, in contrast, are open to misinterpretation and make a heavier demand on memory. Parents also report more accurately when asked about their child's present and emergent language behaviours rather than about past ones (Fenson et al., 2007). Parent report has to be validated against measurements of the same phenomenon, i.e. the child's language levels, obtained by a different method.

Comprehensive parental questionnaires for assessing early child language were developed first for American English (Fenson et al., 1994; Fenson et al., 2007). They are known as "MacArthur-Bates Communicative Development Inventories" – or "CDI". The inventories contain a part for infants between the ages and 8 and 18 months addressing the development of gestures and the comprehension and production of words, and a part for toddlers between the ages of 16 to 30 months addressing the development of vocabulary and grammar. This latter part is of more interest here, as the German adaptation of the CDI comprises the toddler version only. The vocabulary list of the American toddler CDI contains 680 words in 22 semantic categories. In the grammar section morphological development is assessed through a list of 70 items representing plural and past tense forms. For vocabulary and grammatical forms parents are asked to mark the items their child uses. A further part assesses sentence complexity by presenting 37 pairs of short sentences. Each pair expresses the same content in an easier and a more complex form. Parents are asked to mark the version of the sentence that comes closest to their child's present language level. The grammar section is introduced by some general questions regarding whether the child produces inflected forms and word combinations at all. The CDI also contains a part on demographic information.

Data on early language acquisition was collected from a sample of 1130 children between 16 and 30 months with the toddler CDI form (Fenson et al., 1994). The course and variability of the acquisition of vocabulary and grammar may be regarded as normative for children acquiring American English. Growth

curves for vocabulary, inflections and syntax show an enormous variability. Children are distributed widely over the scale values. Even when the top and bottom 10 % of children are excluded, the age difference between children at the same linguistic level can be up to 12 months. This applies to vocabulary and grammar. It means that a one-and-half-year old and a two-and-a-half year old child can be at the same language level, and this is within the normal range. Of the demographic variables gender contributed significantly to the variability. Language developed faster in girls than in boys. There was also a significant influence of socio-economic status and birth rank, although the magnitude of these effects was less pronounced. Children of parents with higher socio-economic status and first born children developed faster.

In order to ascertain the accurateness of the parental reports given with the CDI the questionnaire results were correlated with results based on a number of laboratory measures, such as spontaneous speech and language tests, from a number of smaller child samples (Fenson et al., 1994). Concurrent validity was generally substantial indicating that the parental responses obtained with the CDI are a valid measure of child language. Test-retest results with parents filling out the questionnaire again shortly after the first time indicated that parents answer reliably (Fenson et al., 1994). The conclusion is that parents can assess their child's early language skills validly and reliably.

1.3 CDIs in different languages

Since publication of the first edition of the American CDI (Fenson et al., 1994) and before the start of the present research a number of adaptations of the instruments to a number of languages and cultures occurred, amongst them Italian (Caselli, Casadio & Bates, 1999), Hebrew (Maital, Dromi, Sagi & Bornstein, 2000), Swedish (Berglund & Eriksson, 2000), Icelandic (Thordadottir & Weismer, 1996), British English (Hamilton, Plunkett & Schafer, 2000), Dutch (Zink & Lejaegere, 2002), and a vocabulary checklist for Austrian German (Vollmann, Marschik & Einspieler, 2000). Since then there has been an adaptation to Danish (Bleses, Vach, Slott, Wehberg, Thomson, Madsen & Basbøll, 2008b) and many more languages. A more complete report on CDI-based questionnaire instruments in different languages is presented in Bleses, Vach, Slott, Wehberg, Thomson, Madsen & Basbøll (2008a).

An important aim of the toddler CDIs is to describe the extent of normal variability in the population during the time period when children move from words to grammar. This typically occurs between 1;6 and 2;6 in a variety of languages. In different languages the instrument assesses culture specific linguistic