Development of Majority Language Skills in Children with Different Family Language Backgrounds: Results from the BiKS-3-18 Study

Susanne Ebert and Sabine Weinert

Abstract

Given that social disparities evolve early in development (cf. Weinert and Ebert this volume), the main aim of this chapter is to learn more about how disparities in (majority) language skills develop in preschool children when their parents have a nonnative German language background. For this purpose, we refer to key findings from the longitudinal study BiKS-3-18. These demonstrate that especially children with two nonnative German-speaking parents are disadvantaged in majority language development, particularly when the everyday language in the family is not German or when the family feels less integrated into German society. However, these two factors correlate only marginally, and both change over the preschool years. Moreover, our results suggest that the quality, and not the pure quantity, of German language interaction within the family promotes children's majority language development. Further, results show that internal factors such as verbal working memory are

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an important explanatory factor for children's language development in the majority language when children grow up with more than one language. Concerning external factors in the environment, the study can hardly demonstrate the effect of language and literacy support in preschool for children's majority language development. We discuss how the results of the BiKS-3-18 study can (and cannot) contribute to an understanding of the complex developmental process of majority language development in preschool children.

Keywords

Language development · Migration background · Language use at home · Perceived integration in society · Changes over time

Introduction

Although there is a huge heterogeneity, many children growing up in families with a history of migration experience more than one language in their everyday lives. These children often grow up not only with the majority language of the country in which they live, but also with a second or even third language: that of their family. Thus, these children acquire language skills not only in the majority language of society but also in the language(s) of their family's country of origin. Since these language(s) might be cultivated more or less strongly in the family, the question arises as to how such (external) environmental factors interrelate with the children's (internal) language development.

The importance of (external) proximal and more distal environmental conditions and how these interact with children's developing (internal) preconditions are highlighted in bioecological models of child development (Bronfenbrenner and Morris 2006). Indeed, (monolingual) language development is accompanied by numerous changes in, interactions with, and characteristics of the child's proximal and distal physical and social environment. Moreover, language development relates to further cognitive, social-cognitive, and social-emotional development and educational outcomes (see also Weinert and Ebert this volume, for results of the BiKS-3-18 study on this issue). Thus, when (monolingual) language development is impacted by external environmental conditions, differences in the multilingual environment will impact a fortiori on children's development of the majority language.

However, although numerous studies focusing on the educational disadvantages of children with a migration background explain these disadvantages in

terms of reduced language skills in the majority language (e.g., Esser 2006; Hoff 2013; Prevoo et al. 2016), less is known about how these limited language skills develop, and about what (internal) factors in the child and what (external) factors in the environment impact on these developments (see, e.g., Hammer et al. 2014; Heckman et al. 2013). Moreover, there is little research on how various aspects that are supposed to be related to majority language development change themselves—for example, how the use of the majority language within the family changes over time. In addition, given that the development of domain-specific competencies and the emergence of social disparities start well before school entry (see Weinert and Ebert this volume), there is a need to investigate the development of the majority language well before children enter school. This is even more important because it has been suggested that early developments are highly relevant for later developments, educational pathways, and participation in society (e.g., Heckman 2008).

Against this background, the main aims of the present study are to learn more about (a) the development of the majority language in preschool children growing up in families with a non-majority native language background, (b) the development of their environmental conditions associated with language development, and (c) how these developments are interrelated. Specifically, we focus on how differences in children's language environment change, and we ask how these are associated with the development of disparities in (majority) language competencies. Therefore, we draw on Bronfenbrenner's bioecological approach (e.g., Bronfenbrenner and Morris 2006) and differentiate between internal factors (e.g., children's abilities and skills) and external factors (e.g., language stimulation in the family and educational institutions) that are important for the development of majority language and literacy skills under these—albeit interindividually often very different—conditions found for children with a family background of migration. This is highly relevant, because it can provide a first basis for effective language support in the majority language that is then so crucial for future educational careers and participation in society (e.g., Heckman 2008; Heckman et al. 2013).

In light of our aim to learn more about children's language development in the majority language, the longitudinal BiKS study provides important insights into relevant individual preconditions, developmental trajectories, and their relation to learning opportunities in different learning environments of children growing up with not only the language of the majority. Hence, we report key findings from the longitudinal study BiKS-3-18 ("Educational Processes, Competence

Development, and Formation of Educational Decisions in Preschool and School Age")[1] on the early development of majority language skills in children growing up in families with a minority language background due to a family history of migration. The focus will be on language development in preschool-age, a period when children are assumed to be particularly good language learners (see Weinert 2004a, for an overview). We focus on the acquisition of receptive majority language skills, particularly in the area of vocabulary and grammar (especially sentence comprehension). These receptive language skills were examined more closely in the BiKS-3-18 study and are considered to be school-relevant (e.g., for understanding teachers' instructions and explanations) and linked closely to literacy development—that is, to the acquisition of reading and writing (e.g., Dickinson et al. 2003; Ebert 2020; Ebert and Weinert 2013; Muter et al. 2004).

Restricted by the data of the BiKS-3-18 study, we can look at only a small part of the children's language development. Of course, children's receptive language skills in the majority language are only a small segment of children's language development in general, and there is much more in children's language development—to name just the development of productive language and the development of children's language competencies in their family's native language(s). However, competencies in the majority language are said to be especially important for successful social integration, and are regarded as central explanatory factors for disparities in educational careers associated with the family's native language or languages (e.g., Esser 2006; Hoff 2013; Stanat 2006).

Drawing on BiKS-3-18 data, we first look at the competencies of children at the beginning of their preschool years. In particular, we take a closer look at the (German) language skills of children who have at least one nonnative German-speaking parent, and compare these to the (German) language skills of children growing up in monolingual German families. Then, we take a closer look at the subgroup of children with two nonnative German-speaking parents: We present results showing how their (German) language competencies are related to the families' language use at home and their parents' perceived integration into German society. In addition, we report on changes in the everyday language used in the family (i.e., the customary use of language in the family), the perceived

[1] The Bamberg research unit BiKS conducted two comprehensive longitudinal studies funded by the German Research Foundation (Principal investigators: C. Artelt, H.-P. Blossfeld, G. Faust, H.-G. Rossbach, and S. Weinert). Here we report on findings based on the longitudinal study BiKS-3-18 that traced children's development from 3 to 10 years and, later on in subsequent projects, until 18 years (see the introductory chapter to BiKS by von Maurice et al. this volume).

integration into society, and the children's (German) language competencies over the preschool years up to primary school. Furthermore, we consider explanatory approaches addressing interindividual differences in the observed changes in the children's (German) language skills.

Before going to the main part of the study, we give a short overview of the BiKS-3-18 sample with a special focus on children's language background (see, for more general information, also Weinert and Ebert this volume; Homuth et al. this volume).

1 The BiKS-3-18 Sample

Overall, the interdisciplinary longitudinal study BiKS-3-18 focused particularly on family and institutional conditions and their effects on children's development. Within this framework, a large number of indicators of cognitive and language development were recorded longitudinally in an initial sample of 547 three-year-old children ($M = 3;8$ years; $SD = 5.0$ months). These children were sampled from 60 Bavarian and 37 Hessian preschools (see, for more detailed information, von Maurice 2007, and further chapters in this volume). A total of 428 children (78.2%) came from families in which both parents reported that their mother tongue was German: Here, we define these families and their children as native speakers. In 53 families (9.7%) of the BiKS-3-18 sample, one parent claimed to possess another mother tongue than German. Here, we define these families as one-parent nonnative German-speaking. In 66 families (12.1%), both parents reported possessing another mother tongue than German. Here, we define them as families in which both parents were nonnative German-speaking. In a single-parent household, we focused on the mother tongue of this parent alone. In other words, if the single parent reported having another mother tongue than German, we grouped this child to the nonnative German-speaking families, and if the single parent reported having German as her or his mother tongue, the child was grouped to the native German-speaking families. Among families in which both parents were nonnative speakers of German, most parents were from the same language area, with the majority coming from Turkish-speaking regions (24 families) and others from a wide range of further cultures and languages. In families in which only one parent was nonnative German-speaking, the most frequently represented language (11 persons) was English.

In families in which only one parent was nonnative German-speaking, the majority (66%) used only German most of the time in everyday family life at the beginning of the BiKS-3-18 study. In contrast, in families in which both parents were nonnative German-speaking, the majority (about 65%) used only or mostly

the other language in everyday family life at the beginning of the BiKS study (see, for more details, Dubowy et al. 2008 and Fig. 2). Thus, in families in which one parent was nonnative German-speaking, the language of this nonnative parent seems to play a minor role in everyday language. This suggests that most children in this group grew up speaking German more or less monolingually. In contrast, in families in which both parents were nonnative German-speaking, most children seem to grow up monolingually as well, but not in the majority language German. Thus, our data suggest that most of the children growing up with two nonnative German-speaking parents start to learn German more intensively when entering German preschool. However, we do not know about this in more detail. Unfortunately, the BiKS-3-18 study does not give more information on whether and to what extent the children grew up bilingually. In addition, our groups are rather small and thus, we use one or two parents nonnative German-speaking as a (rather) crude indicator for differences in language environments within the family.

Families also varied widely in their social backgrounds. Overall, the parents' socioeconomic status (SES) and education were significantly lower among children with a bilateral nonnative German language background compared to the other two groups. Although there were about the same number of mothers with a high school diploma (or a comparable qualification) among these children as among the monolingual German families included in the study (33.3% vs. 34.3%), there were significantly more mothers in the first group who had no school-leaving certificate (6.1% vs. 0.7%) or only a lower secondary school leaving qualification (31.8% vs. 22.5%). Children with only one nonnative German-speaking parent were more similar to those with two German-speaking parents in terms of socioeconomic background. However, the first tended to have, on average, slightly higher educational qualifications and a higher International Socio-Economic Index (ISEI; cf. Ganzeboom and Treiman 1996). For more detailed information on the sample, see Table 1 and also Dubowy et al. (2008).

Table 1 Means (M) and standard deviations (SD) of the International Socio-Economic Index (ISEI) of mothers and fathers and the respectively highest ISEI as a function of parents' native language

Mother tongue parents	ISEI mother *M (SD)*	ISEI father *M (SD)*	ISEI highest *M (SD)*
Both parents German	47.32 (15.17)	49.62 (16.62)	53.97 (15.83)
One parent not German	48.69 (13.41)	47.85 (19.18)	54.79 (16.14)
Both parents not German	36.08 (12.91)	32.98 (13.98)	38.75 (13.20)

2 Competencies at the Beginning of the Preschool Years

We first look at the performance of children with different language backgrounds in the various areas of competencies examined in the BiKS-3-18 study (grammar and vocabulary in German, verbal working memory, nonverbal cognitive abilities, factual content knowledge) at the beginning of preschool. The BiKS-3-18 study demonstrated that children whose parents both had a mother tongue other than German showed—as a group—comparatively more limited results on competence measures at the age of about 3 years compared to the other groups of children, especially in tests requiring relatively rich language skills in the majority language German (see Fig. 1). Statistical analyses (see Dubowy et al. 2008) revealed that even after controlling for their parents' SES, children with two nonnative German-speaking parents differed significantly from children growing up monolingually German as well as from children with one nonnative German-speaking parent in terms of grammar, vocabulary, and factual content knowledge. These

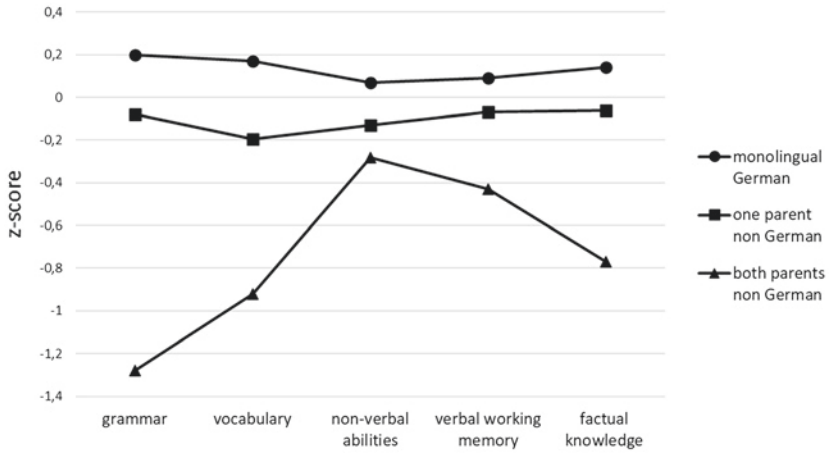

Fig. 1 Children's performance (mean z score) in grammar, vocabulary, basic nonverbal abilities, verbal working memory, and factual knowledge at the age of about 3 years (Measurement point 1) depending on parents' language background (figure based on Dubowy et al. 2008, p. 127)

measures were all assessed in the German language. In contrast, differences in basic nonverbal cognitive abilities and verbal working memory were, as expected, small and could be attributed to individual subtests and possibly to the language of instruction, which was German. For example, differences in basic nonverbal abilities were found only in the subtest 'Categories' of the SON-R 2½-7 (Tellegen et al. 2005), but not in the subtest 'Analogies'. This might be explained by the fact that the processing of categories is often influenced by language (see, for more information, Weinert 2004b, 2008). Also concerning verbal working memory, the limitations could be attributed only to the subtest 'Phonological memory for nonwords' from the SETK 3-5 (Grimm 2001) that contains pseudowords resembling German phonology.

Although the performance of children with only one nonnative German-speaking parent was in the range of the performance of monolingual German-speaking children in most tests, they still differed from them in some language-related tasks such as vocabulary (cf. Dubowy et al. 2008). Similar results have been reported in other studies with bilingual children, although the reasons for the slight disadvantages of this group are not clear (e.g., Bialystok 2009). Yet, at least some of these children probably learned more than one language (and thus more than one vocabulary) with less time-on-task for each language. However, note that—particularly in this group—the specific language learning conditions were rather heterogeneous. They may have varied substantially depending on, for example, the value the family placed on promoting the native language of the parent rather than the majority language.

3 Language Use in the Family and Perceived Integration into Society Among Families with Another Language Background Than German

Differences in the conditions of language acquisition in children from families with different language backgrounds could be observed when considering the language spoken in the family when all family members are together (everyday family language). In the BiKS-3-18 study, families with only one nonnative German-speaking parent stated mostly that they spoke only German when all family members were together (66%). For children with two nonnative German-speaking parents, the parents' language of origin often played a much greater role in everyday family life. Of these families, 24.1% reported speaking mostly, and 40.9% exclusively, a language other than German when all family members

were together. In most of the remaining families in this group (27.3%), partly the majority language and partly the language of origin was reported as being the everyday family language, whereas in only a very few cases was German said to be spoken more frequently than the language of origin (see Fig. 2a).

Competencies in the majority language are often assumed to be the key to integration into a foreign society, especially in EU policy (e.g., Ros i Sole 2014). However, it is questionable whether this assumption holds empirically. Nonetheless, Johnson and Newport (1989) reported a significantly positive correlation of $r = 0.63$ between performance on an English grammar test and perceived integration in the US in adults after some years as second-language learners. Thus, for children's second or majority language development, the perceived integration of their family as an environmental factor may, on the one hand, reflect the language competencies in the majority language of the family and, on the other hand, act as an important external environmental factor for their language development. To the best of our knowledge, the impact of these external variables on children's language development has yet to be investigated.

The BiKS data shows that almost all families with only one parent who is not a native speaker of German, felt well integrated into German society. This is, of course, not surprising, because one parent is presumably originally from Germany. However, even in families in which both parents spoke a mother

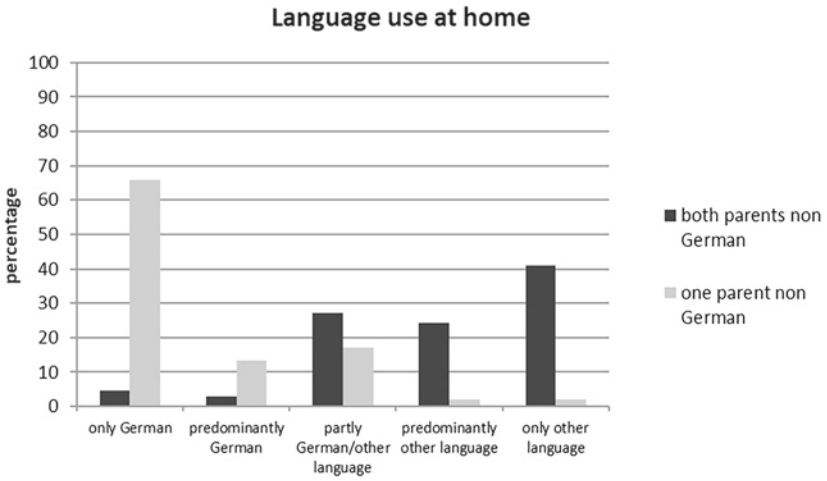

Fig. 2a Language spoken when all family members were together depending on family's language background

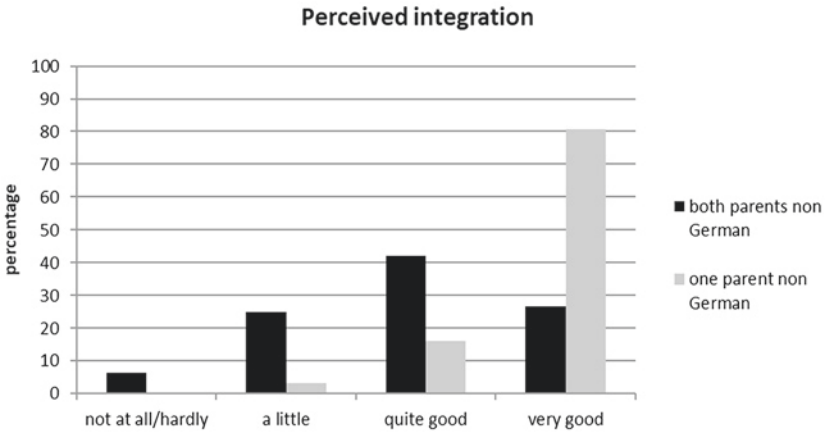

Fig. 2b Perceived integration into German society depending on family's language background

tongue other than German, the majority of this group felt fairly (42.2%) or very well (26.6%) integrated into German society (see Fig. 2b). This was the case, although—as shown above—they often used another language than German at home (i.e., mostly or exclusively used another language than German in everyday family life).

Since families in which both parents had a mother tongue other than German differed more in the language spoken in everyday family life as well as in the perceived integration into German society, it is particularly interesting to take a closer look at the German language development of their children.

Language use at home and competencies in children with two parents who have a mother tongue other than German. In line with Esser's (2001) time-on-task hypothesis of second-language learning (i.e., the assumption that (interactive) access to the language is of central importance for acquiring that language) statistical analyses of the BiKS-3-18 data showed that—after controlling for age and socioeconomic status—children growing up in families who predominantly or mostly spoke another language than German at home were significantly poorer in comprehending German sentences (receptive grammar) than the other children. On a descriptive level, these children also showed greater limitations in (German) vocabulary and verbal working memory compared to children who spoke German at least partially in their homes (cf. Dubowy et al. 2008; see Fig. 3).

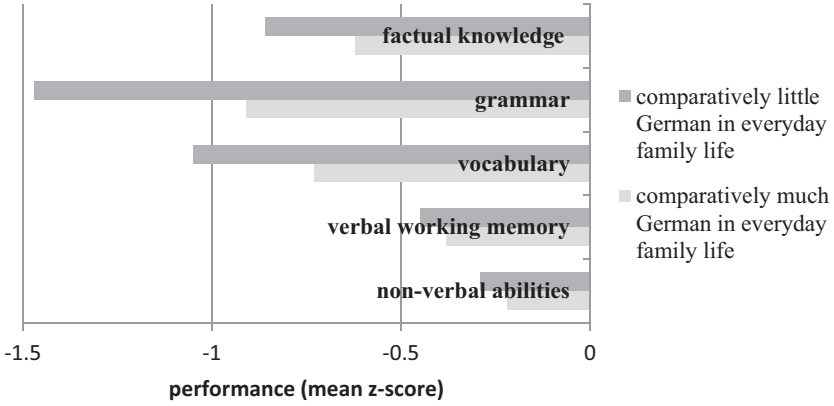

Fig. 3 Families in which both parents have a mother tongue other than German: Children's test performance (mean z score) at age of about 3 years (Measurement point 1) in factual knowledge, grammar, vocabulary, verbal working memory, and nonverbal abilities (recorded in German) depending on language use at home

However, it must be taken into account that we do not know how well the parents could speak German. It might be that parents with higher German language proficiency used German more often at home. Accordingly, we are not able to judge whether the apparent advantages of German language use within the family (see Fig. 3) could vary with or depend on the German language competence of the parents. Thus, not only the quantity but also the *quality* of German language stimulation may play a role in German language acquisition in children from families with a nonnative German language background. This can also be concluded from a study by Lehrl et al. (2012). Their analyses of data from the BiKS-3-18 study showed that the family's language background had also significant indirect effects on children's (German) language skills (grammar, vocabulary) and their factual knowledge (assessed via the German language). Thus, the effect of the parents' language background (i.e., whether both, only one, or none of the parents had German as her or his mother tongue) was partially mediated via the *quality of (verbal) parent–child interactions* and the *experience with books*. The *quality of parent–child interaction* was measured by a live rating of a semistandardized picture book situation. This rating refers, for example, to the use of questions, conversational shares, and the level of free speech. *Experience with books* was assessed via parent report on the number of children's and adults' books and the frequency of reading aloud to the child (see also Rossbach et al. this volume). When the quality of

the parent–child interaction was included in the model, only indirect effects of language background on the change in receptive (German) vocabulary and factual knowledge between the ages of 3 and 4 years were found. Concerning the development of German grammar reception between the ages of 3 and 4, indirect effects were also observed. In this case, effects were partially mediated through the experience with books. However, a direct effect of the parents' language background remained—although it did weaken (see for more details Lehrl et al. 2012).

Overall, the results of the BiKS-3-18 study suggest that language stimulation at home plays an important role in the acquisition of the majority language in children with a nonnative German language family background. However, the results cannot be used to conclude simply that the quantitative use of German in the family is decisive for comparatively better German language development. For example, even among children with nonnative German-speaking parents who predominantly or mostly used another language than German in everyday family life, at least half of them spoke German well to very well, according to their parents. Further, in the objective language tests, these children indeed showed comparable German language skills to children from nonnative German-speaking families whose parents reported using German at least partly in everyday family life. After controlling for the mean ISEI of the parents and the age of the children, there were no statistically significant differences between these two subgroups (i.e., between children with comparatively little use of German in everyday family life, but good German language skills according to their parents' claim vs. comparatively much German in everyday family life) in any of the competence areas tested (factual content knowledge, grammar, vocabulary, verbal working memory, nonverbal cognitive abilities, $F(5, 33) = 1.94$, $p = 0.23$[2]).

Findings on language use at home should not obscure the fact that, regardless of which language is spoken at home, all children for whom both parents were nonnative speakers of German were limited in their German language skills at the age of 3—that is, at an age when monolingual German-speaking children also are still making substantial progress in language acquisition. Thus, these children may be disadvantaged in their educational opportunities (cf. also Hoff 2013). However, besides the language used in everyday family life, other factors could also play a role in children's acquisition of the majority language. For example, as Klein (2000) has shown, individual preconditions and motivations in learners are also important over and above the language input they receive. Thus, which

[2] Result of a multivariate analysis of variance.

recommendations can be derived from the BiKS findings remains an open question. A simple conclusion that speaking German in a nonnative German-speaking family would be beneficial in every case is not possible, especially because the effects on the children's (second) language acquisition may vary depending on the parents' German language proficiency.

Perceived integration into society and competencies in children whose both parents have a mother tongue other than German. As mentioned above (see Fig. 2b), not only families in which one parent was a nonnative speaker of German but also the majority of families in which both parents were nonnative German speakers felt to an overwhelming extent well to very well integrated into German society. At the same time, within this group, it were especially those children growing up in families that did not feel integrated into German society (not at all or only hardly) who showed significantly poorer performance on factual knowledge (recorded in German) and German grammar at age 3 compared to children from families that felt comparatively well integrated into German society. This held even after controlling for the parents' ISEI and the children's age (cf. Dubowy et al. 2008). However, the perceived integration of the group in which both parents spoke a native language other than German correlated with the language spoken in everyday family life to only a small degree (rank correlation according to Spearman's rho: $r = 0.19$, *ns*). This means, for example, that families who felt well integrated into German society did not necessarily speak more German at home than families who felt less well integrated. Conversely, families who spoke more German in everyday family life did not necessarily feel better integrated into German society. However, as the BiKS-3-18 study showed, both aspects (language spoken in the family and perceived integration into society) related to the children's majority language skills: Children from families who felt less well integrated showed limitations in (German) language or (German) language-related other competencies as did children from families in which comparatively little German was spoken.

Against this background, the question arises whether the parents of children with comparatively good German language competencies felt better integrated into German society, even when they spoke comparatively little German at home. To answer this question, we took a closer look at the perceived integration into society of families who stated that they spoke comparatively little German at home: We compared their perceived integration as a function of whether their children showed comparatively advanced or less advanced German language skills. After controlling for ISEI and the age of the children, we found no statistically significant difference in perceived integration into society, $F(1, 38) = 0.74$, *ns*. Thus, the perceived integration of the family did not explain why some chil-

dren, although they received little German language stimulation at home, showed comparatively better German language skills. Consequently, other explanatory variables must be taken into account. Possible explanations could be special linguistic or cognitive prerequisites on the part of the children (internal factors) or the German language stimulation that these children experience outside the family (external factors).

4 Changes Over the Preschool Years in the Language Spoken in the Family, in the Perceived Integration into Society, and in the Children's Majority Language Skills

In the following, we ask about the changes over the preschool years that can be observed in the various factors considered so far: How does the use of German in everyday life change in families when parents have a mother tongue other than German? How does the perceived integration into society change over time? What does the children's German language development look like? Do the children with clear limitations in their German language competencies at the beginning of preschool catch up with their peers who grow up monolingually, or is the achievement gap widening (Matthew effect)? Furthermore, we ask whether there are internal factors such as individual child abilities and skills or external factors such as the quality of language stimulation in preschool that are particularly conducive to the majority language development of children living in families with non-majority language backgrounds?

Changes in everyday language use in families when both parents have a mother tongue other than German. We first looked at the changes in families' everyday language use over the preschool period in families in which both parents had a mother tongue other than German (Fig. 4).

Figure 4 shows that for those children for whom valid data were available at all three measurement points ($N = 45$),[3] the proportion of families who stated that they used only the language of origin in everyday family life was significantly lower at MP 5 when children were about 5 years old compared to age 3. Like-

[3] The everyday language in the family at Measurement point 1 did not differ significantly between the group of persons for whom data on everyday language were available at all three measurement points ($N = 45$) and the group of persons for whom data were not available at all three measurement points ($N = 21$), $t(64) = -1.63$, $p = .11$.

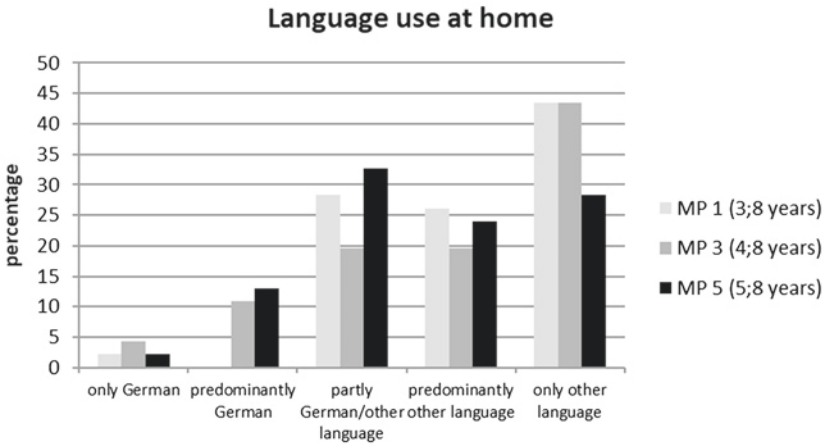

Fig. 4 Frequency of German vs. other language spoken in the family when all family members are together at the ages of 3, 4, and 5 years (Measurement point (MP) 1, 3, and 5) in percent for the children whose parents both speak a mother tongue other than German and from whom data were available for all measurement points (N = 45)

wise, the proportion of families who mostly spoke German increased over time (see Fig. 4). This suggests that the children increasingly introduce the majority language of the society in which they live to the families, probably through their preschool attendance.

Changes in perceived integration into society when both parents have a mother tongue other than German. Next, we looked at changes during preschool years in the perceived integration of the families in which both parents had a mother tongue other than German. For those families from which data on perceived integration were available at all three measurement points ($N = 40$),[4] we found that the proportion of people who felt fairly well integrated into German society increased over the preschool period. However, at the same time, the proportion reporting that integration into society was perceived as very good decreased (see Fig. 5). The reason for this result and the extent to which language

[4] Perceived integration at Measurement point 1 did not differ significantly between the group of persons for whom data on integration were available at all three measurement points ($N = 40$) and the group of persons for whom these data were not available at all three measurement points ($N = 24$), $t(62) = 1.00$, $p = .32$.

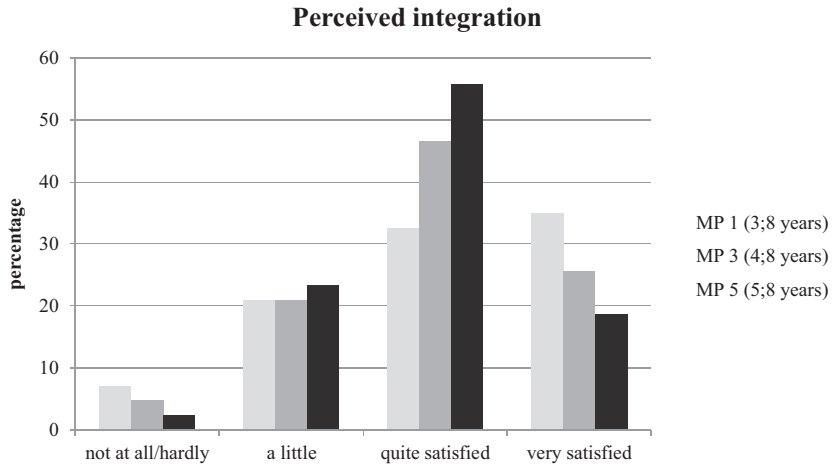

Fig. 5 Perceived integration of family when children aged 3, 4, and 5 years (Measurement point (MP) 1, 3, and 5) for families in which both parents spoke a mother tongue other than German and for which information was available at all three measurement points (N = 40)

proficiency in the majority language and the increasing contact with the German education system (i.e., attendance at preschool) might have played a role must remain open at this point.

Majority language development in children of parents who both had a mother tongue other than German. Although, as expected, those children whose parents both had a nonnative German language background were comparatively limited in their German language competencies at age 3 (see above), interestingly, 39.7% of the parents in this group stated that German was the language their child spoke best. This percentage even rose during preschool years: At the age of 4 years, 58.6% and, at the age of 5 years, even 82.1% of the parents were convinced that their child spoke German better than the language of origin. Consequently, the mastery of the majority language German is becoming increasingly dominant over that of the parents' native language.

Vocabulary development in German. In the BiKS-3-18 study, we found that on a German research version of the Peabody Picture Vocabulary Test (PPVT-R; Dunn and Dunn 1981), 5-year olds whose parents were both nonnative speakers of German assigned, on average, almost three times as many words correctly to the corresponding picture compared to the first measurement point in the BiKS-3-18 study. Thus, their German vocabulary (performance on a receptive vocabulary

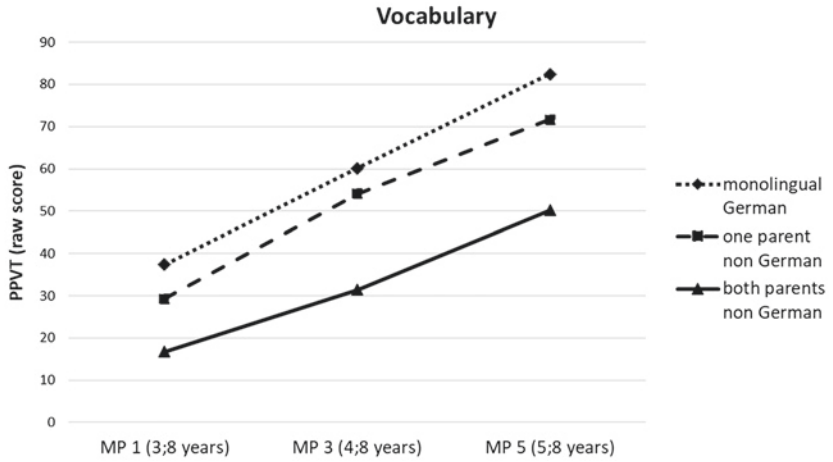

Fig. 6 Scores on the vocabulary test (PPVT) at Measurement points (MP) 1, 3, and 5 depending on family's language background

test) tripled between the ages of 3 (MP 1) and 5 years (MP 5). As Fig. 6 shows, however, the vocabulary of the monolingual German children participating in BiKS-3-18 also increased over the preschool years. Thus, at the age of 5 years, the differences in the number of correctly assigned pictures in the vocabulary test between the three groups (children with no, one, or two nonnative German-speaking parents) were even greater than at age 3 (see Fig. 6). Latent growth curve models depicting the achievement growth of the individual children confirmed that the children with two nonnative German-speaking parents showed not only a more limited German-language vocabulary at age 3 compared to the monolingual German children ($b = -1.42$, $p < 0.01$), but also had a smaller vocabulary growth ($b = -0.83$, $p < 0.01$) until age 5 (cf. Ebert et al. 2013).

Thus, the gap in German vocabulary did not close following German preschool attendance but continued to widen. However, in our sample, it is not possible to test whether the gap would have widened even further if children had not attended preschool. This further widening is suggested by other findings in the literature (cf., e.g., Sammons et al. 2002).

Our analyses of the BiKS-3-18 data showed further that children with only one nonnative German-speaking parent also started preschool at a lower vocabulary level than monolingual German children ($b = -0.47$, $p < 0.01$); yet in contrast to children whose parents both had a different mother tongue than German, they

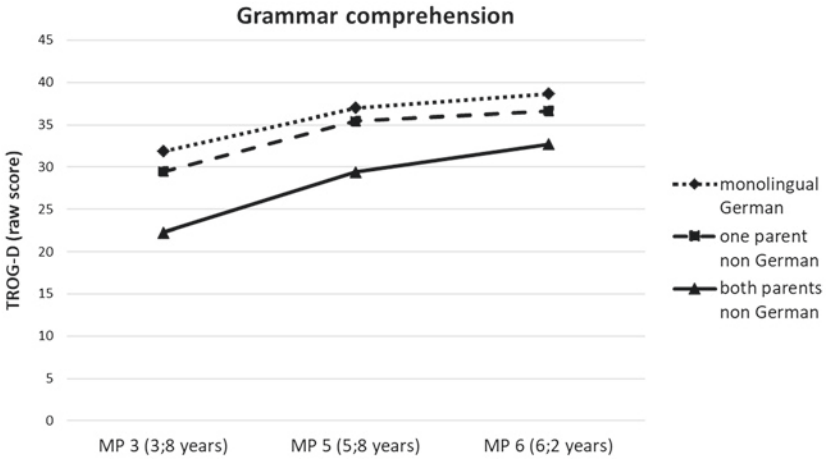

Fig. 7 Scores on the grammar comprehension test (short form TROG-D) at Measurement points (MP) 3, 5, and 6 depending on family's language background

did not show reduced growth ($b = -0.04$, ns) compared to monolingual German children (Ebert et al. 2013).

Grammar acquisition in German. Figure 7 shows the children's performance on a short German version of the *Test for the Reception of Grammar* (TROG-D, Fox 2006) as a function of their language background. This test presents children with German sentences of varying grammatical complexity, and their task is to select the one out of four pictures that matches the respective sentence. In the BiKS-3-18 study, the test was administered at the ages of 4;8 (MP 3), 5;8 (MP 5), and 6;2 (MP 6). Figure 7 shows that the grammar (sentence comprehension) in German acquired during preschool years was particularly limited for children whose parents both had a mother tongue other than German compared to the other two groups (monolingual German children and children with only one nonnative German-speaking parent). However, at the end of preschool (MP 6) differences between groups in raw scores on the TROG-D were smaller than at the age of 4;8 years (MP 3). Thus, children whose parents were both nonnative speakers of German seemed to make up some ground during their preschool years in German sentence comprehension (receptive grammar). This result differs from what we found for German vocabulary development.

Analyses of variance and latent growth curve models confirmed these descriptive findings: A repeated measures analysis of variance across the three measure-

ment points, controlling for social background (mean ISEI of parents) and age of the children, showed a significant main effect of language background, $F(2, 430) = 43.38$, $p < 0.01$, as well as a significant interaction between language background and time, $F(200.40, 801.41) = 4.09$, $p < 0.01$. This can probably be explained by the fact that the children with two nonnative German-speaking parents—at least for rather basic language patterns—caught up over time with the other two groups. This assumption was also confirmed by latent growth curve models. Here, we found that children with two nonnative German-speaking parents showed more limited performance ($b = -9.58$, $p < 0.01$) compared to the monolingual German children at the age of 4;8 years, but, at the same time, showed a stronger growth over time ($b = 1.18$, $p < 0.01$). However, these findings should be interpreted with caution, because the size of the significant interaction effect in the analysis of variance was extremely low. Moreover, the convergence of test performance of the children with nonnative German-speaking parents to the other groups seemed to be due more to the slower growth of the latter (see Fig. 7). The children from monolingual German families seemed to have reached a basic grammatical level at the end of the preschool years, so that a further linear increase in grammar could simply no longer be observed. Instead, more complex grammatical structures and meanings must now be acquired. At the same time, it should be noted that most children with two nonnative German-speaking parents did not seem to have reached this basic grammatical level in German by the end of preschool. Accordingly, they differed at this point from children with only one nonnative German-speaking parent as well as from monolingual German children, even after controlling for family socioeconomic status as measured by the highest ISEI in the family (see Kotzerke et al. 2013).

Even during primary school years, the grammatical skills in German (sentence comprehension) of children with two nonnative German-speaking parents were, on average, limited compared to monolingual German children. For example, in 1st grade, this was even true for comparatively simple sentence constructions that have already been mastered easily by almost all monolingual German children as well as by children with only one nonnative German-speaking parent. However, the disadvantages of children with nonnative German-speaking parents were particularly pronounced when it came to comparatively complex grammatical structures (see Fig. 8; for more information, see Kotzerke et al. 2014).

Whereas the disadvantage in understanding simple grammatical structures disappeared by the end of Grade 3, limitations in understanding comparatively complex grammatical structures still remained at this time (see Fig. 9; for more information, adapted from Kotzerke et al. 2014).

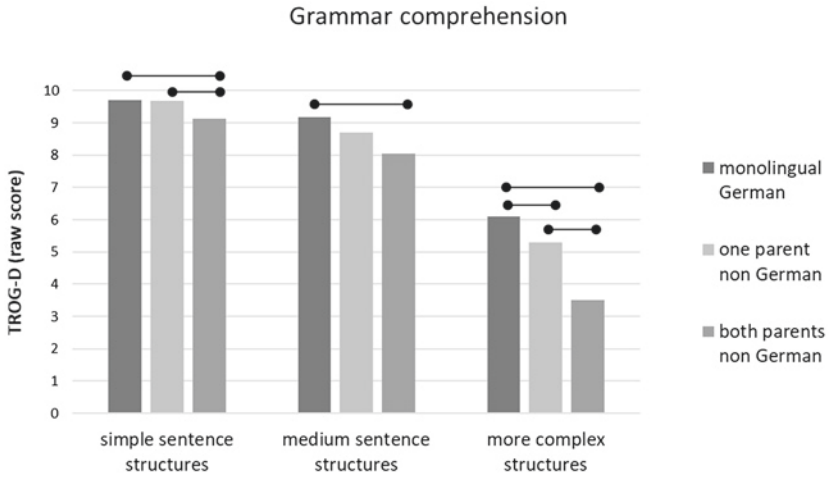

Fig. 8 Mean scores achieved in 1st grade in German sentence comprehension differentiating between items of simple, medium, and more complex sentence structure of the TROG-D (max. score each = 10) depending on family's language background (crossbars mark statistically significant group differences) (adapted from Kotzerke et al. 2014, p. 81)

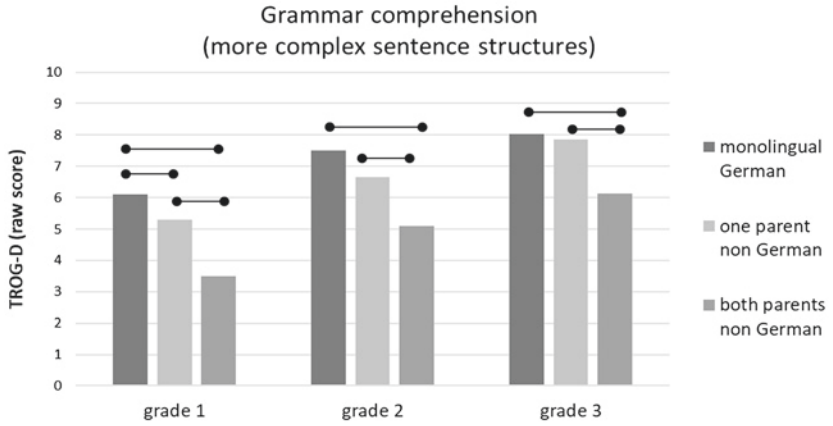

Fig. 9 Mean scores on comparatively complex grammatical sentence constructions of the TROG-D (max. score each = 10) depending on family's language background (crossbars mark statistically significant group differences) at Grade 1, 2, and 3 (adapted from Kotzerke et al. 2014, p. 82)

5 Factors Related to (German) Language Development in Preschool Years

So far, the BiKS-3-18 study has shown that children whose parents have a mother tongue other than German are comparatively disadvantaged in their German language development at preschool age. This disadvantage may also limit their opportunities in the German education system (see also Weinert and Ebert this volume). Thus, it is necessary to ask which factors explain these interindividual differences in German language development over the preschool years. In particular, one may ask which skills and abilities on the part of the child play a role (internal factors; see also Weinert and Ebert this volume), and which factors in the family and the preschool setting (external factors) support the children's language development (see also Lehrl et al. this volume).

Concerning *internal factors* that may be related to vocabulary development in the majority language German, latent growth curve models using BiKS-3-18 data showed—in line with theoretical assumptions—that in children with nonnative German-speaking parents, differences in verbal working memory had a significant effect on vocabulary growth over the preschool years. Advanced verbal working memory performance at the age of 3 was associated not only with comparatively more advanced vocabulary knowledge in German but also with a steeper vocabulary growth in German between the ages of 3 and 5 (cf. Ebert et al. 2013). This finding is in line with results reported by Gathercole and colleagues (e.g., Gathercole and Baddeley 1993; Gathercole et al. 1992). They documented, for example, that the interindividually different capacity of phonological working memory plays a central role in vocabulary development, especially in the early phases of vocabulary acquisition. Converging with this assumption, the results of the BiKS study showed that this phenomenon also applies to vocabulary development in a second language (cf. Ebert et al. 2013).

Concerning *external factors* related to children's language development, the previous sections have shown that in children whose parents have a nonnative German language background, *external factors* within the family such as the perceived integration of the family as well as the language used in everyday family life related to the children's (German) language competencies. Children whose families felt less integrated as well as families who spoke less German at home showed, on average, significant limitations in German vocabulary and grammar (sentence comprehension) at the beginning of preschool.

Other analyses within the BiKS research group on the effect of *external variables in the family* such as the family's SES and the literacy stimulation at home

showed that overall the literacy stimulation at home—measured via questionnaires (e.g., stimulation through books) and via observation and qualitative ratings of German language stimulation during a picture book situation (Family Evaluation Scale (FES), Kuger et al. 2005)—related to differences in children's German vocabulary and mediated the effects of the family's SES on vocabulary at age 3 (cf. Ebert et al. 2013; Weinert and Ebert 2013). However, there was no general effect of differences in literacy stimulation at home on the growth of German vocabulary over the preschool years. Nonetheless, we found that after controlling for the family's SES, the effect of verbal working memory on vocabulary growth in German was reduced for children with a nonnative German language background. This suggests a covariation between child and family variables, which is also proposed by bioecological and interactionist theories of development (Bronfenbrenner and Ceci 1994; Lerner et al. 2005).

With respect to *external language promoting factors* in the preschools, contrary to our expectations, latent growth curve models revealed hardly any effects on children's vocabulary (cf. Ebert et al. 2013; Weinert et al. 2012). Observed differences in neither structural quality (e.g., group size, educator–child ratio) nor the measured process quality of the preschool (literacy and language support) had a significant effect on the vocabulary development in children with a native or nonnative German language background.

For example, latent growth curve models in the group of children with a nonnative German family language background showed marginally significant effects of differences in literacy stimulation in preschool as well as of the presence of special language support programs in preschool on the children's German vocabulary at the age of 3 years, but no effects on vocabulary growth over the preschool years (Ebert et al. 2013). The effects of literacy stimulation (as measured by the ECERS-E: Early Childhood Environment Rating Scale—Extension; Sylva et al. 2010; German Version: KES-E; Tietze et al. 2005; see Rossbach et al. this volume) revealed that higher levels of stimulation in preschool were associated with better German vocabulary, whereas special language support programs were more likely to be present when the children had lower vocabulary. On the one hand, this suggests that the quality of literacy stimulation may also depend on the children's (German) language level and, on the other hand, that preschools recognize the need for language support and offer more language support programs when the children attending show a very limited vocabulary.

Another finding was that the proportion of children in preschool with a migration background was associated with the initial German vocabulary score of children who had nonnative German-speaking parents. The proportion of children in preschool with a migration background also had a marginally significant

negative effect on their vocabulary growth in German. However, this effect disappeared when family background variables were taken into account (see Ebert et al. 2013). This suggests that children with a nonnative German language background who attend preschools with a higher share of peers with a migration background show greater limitations in vocabulary at the age of 3, and, in some cases, also a slower growth (Ebert et al. 2013). One explanation for this result may be that the language stimulation in German from peers and teachers in preschools with a higher migration rate is reduced for the single child and qualitatively less demanding and less stimulating. This may be especially problematic for children's language development in the majority language when language stimulation and the language level of the majority language in the family is rather low (cf. also Mashburn et al. 2009, on the importance of language stimulation by peers).

Interestingly, concerning another aspect of the preschool environment, the BiKS-3-18 study revealed effects of the preschool (or more precisely: of differences between preschools) on the vocabulary acquisition of children with a nonnative German language background—that is, differences in the attitudes of preschool teachers toward first-language integration related to the vocabulary development of children with a migration background (cf. Kratzmann et al. 2013). Children with a migration background (determined here based on the parents' and grandparents' country of birth) who experienced little German language stimulation in everyday family life (i.e., most children whose both parents had a mother tongue other than German) or who were in preschools with a high migration rate showed a slower development of German vocabulary when the preschool teachers considered first-language integration approaches to be particularly valuable (i.e., agree, for example, with the statement: "In every preschool, there should be bilingual programs for migrant children"). Against the background of Esser's (2001) assumption that interethnic social contacts and the associated educational opportunities are of central importance for German language development, the findings can be explained by the fact that educators who advocate first-language-integrating approaches may also increase the inclusion of the first language in everyday preschool life. As a consequence children who experience little German language input at home (e.g., because the parents themselves had limited German language proficiency) or in preschool (e.g., because the majority of playmates also had limited German language skills) may additionally be restricted in German-language-learning opportunities.

The findings from the BiKS-3-18 study showed that language and literacy support in preschool for German language development in all children is anything but trivial (e.g., Ebert et al. 2013; Weinert et al. 2012; Weinert and Ebert 2013). Hence, the study confirmed and extended findings revealing that the effects of

language support in institutional contexts often fall short compared to the effects that can be expected from a theoretical and empirical perspective (e.g., Roos et al. 2010; see Lehrl et al. this volume).

6 Summary and Outlook

The present chapter aimed to learn more about how social disparities in children with a migration background develop while bringing together key results of the BiKS-3-18 study on the development of preschool children with a nonnative German language background in their family. One focus was on language development in the majority language German in children whose both parents have a mother tongue other than German. Results show that these children are disadvantaged in German language development, especially when the everyday language in the family is not German or when the families feel less integrated into German society. However, it should be noted that the BiKS-3-18 study cannot give information about the children's productive language competencies in German. In addition, a simple conclusion that the mere offer of German in the family is beneficial in every case, cannot be drawn from our data. Hence, for example, we also found that about half of the children in whose families German is rarely used as the everyday family language are comparable in their German (receptive) language development to those children in whose families German is predominantly or mostly the everyday family language. Moreover, our results suggest that the quality, and not the pure quantity, of German language interaction promotes the children's majority language development. Thus, the home language environment (frequency of books and reading, German language stimulation during a semi-standardized book reading task) mediates part of the effect of the language background on German language development. Although we have no direct data on the parents' own German language competencies, these results suggest that these play a major role in the development of German language competencies in their children.

Interestingly, the use of German as their everyday language and perceived integration correlate only marginally. This means that the use or nonuse of German as an everyday language is not a clear sign of a good or not-so-good integration into German society—at least from the perspective of the families themselves. Moreover, the perceived integration of the family does not explain why some children, despite receiving little German language stimulation at home, show comparatively better German language skills. However, although only slightly correlated, both the proportion of families who mostly use German as an

everday language as well as the proportion of families who perceive good integration increased over the preschool years. This suggests that with preschool attendance, children bring the majority language increasingly into their family life. However, the perceived integration seems to become more realistic as the proportion perceiving a very good integration also decreases. We assume that these changes in perceived integration and language use at home also promote the German language development of the children. However, it is not possible to connect these changes directly with changes in German language development, because our sample is too small. This will have to be investigated further in future studies. Yet, more than 80% of the parents say that their children perform better in German than in the other language(s) at the end of preschool; whereas at the beginning of preschool, it was only 40%.

The BiKS-3-18 study also considered other explanatory variables for children's (German) language competencies (see also Weinert and Ebert this volume). Thus, further results of the BiKS-3-18 study show that internal factors such as verbal working memory are also an important explanatory factor for children's language development in the majority language when they grow up with more than one language. Moreover, in line with the bioecological and interactionist theories of development (Bronfenbrenner and Ceci 1994; Lerner et al. 2005), internal factors seem to covary with external factors within the family. Thus, for example, the effect of verbal working memory as an internal factor was reduced after controlling the family SES.

Regarding the external environmental factors that children experience outside the family in preschool, the BiKS-3-18 study reveals hardly any effect of German language and literacy stimulation on children's language competencies. At first glance, this seems surprising. Explanations for this finding may be that the quality of support in the almost 100 preschools surveyed in the BiKS study was, on average, not very high, and thus possibly too low to demonstrate an effect on development. In addition, the differences between the preschools in literacy stimulation were not very pronounced, and thus possibly too limited to produce effects. Another explanation is that the chosen measure of literacy stimulation may have been too unspecific, and that the requirements for promoting language development are more demanding than what could be reflected in the relatively unspecific literacy measure provided by the ECERS. Thus, other studies demonstrate that, for example, more specific measures of language stimulation such as specific features of the language input of parents or teachers show effects on children's vocabulary and grammar acquisition (e.g., Huttenlocher et al. 2002).

Overall, the findings of the BiKS-3-18 study on the development of children with a nonnative German language background suggest that a lot needs to be

done to compensate for their disadvantages in German language development, particularly with regard to the quality of preschools and the language support programs offered. Preschools need to take adequate account of the interindividual differences that children bring with them as well as the differences in language stimulation they receive at home. It should be noted that this applies not only to children with a nonnative German language background but also to monolingual German children from low-SES families (see Weinert and Ebert this volume; Weinert and Ebert 2013).

It should be emphasized that the BiKS-3-18 study could shed light on only a few facets of children's language development in the majority language. For example, the present findings relate predominantly to the development of (German) receptive vocabulary and receptive grammar. The extent to which internal and external factors relate to other facets of language development remains to be clarified. Differential effects and complex interactions between the home learning environment, preschool quality in general, and the quality of instruction in particular may depend on the specific developmental domain under study (see also Ebert et al. 2020; Lehrl et al. this volume). Moreover, the BiKS study observed only the German language development of the children without focusing specifically on the development of the language of family origin and possible advantages of multilingualism. However, in German language development, the findings of the BiKS-3-18 study show that especially for children with limited access to (German) language at home, preschools have an important role to play in learning the majority language. Nonetheless, much research is still needed to clarify how to design effective (German) language support in preschools.

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