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This article contributes to a debate in the linguistic and psychological literature that centers around the question if grammatical systems which are acquired simultaneously are separate right from the beginning or if they overlap. We will have a close look on developmental patterns involved in the construction of reference systems in German and Polish by a bilingual child between age 1;5 to 4;0. The German and Polish reference system is of particular interest here because the languages are very different from each other in the relevant domain. We will show that there is cross-linguistic influence in bilingual acquisition and that the grammars are not strictly separated. Overgeneralization moves from German to Polish and not vice versa. We assume that the child prefers transparent form-function patterns and therefore temporarily favors the German system over the Polish one in the course of acquisition. In particular, the concept of definiteness turns out to be a driving force for the expansion of the noun phrase in both languages. Once acquired on the basis of the demonstrative pronoun *das* 'this' in German, demonstrative markers in definite contexts are then also attested in Polish. Thus, the demonstrative pronoun *das* can be considered as being the key to the system.

Keywords: bilingual language acquisition, acquisition of NPs, cross-linguistic influence, reference, German, Polish

1. Introduction

1   In this paper we want to explore the acquisition of the NP in German and Polish by a bilingual child aged between 1;5 to 4;0. We are interested in the question, whether the bilingual child transfers structural components in the course of language acquisition from one language to the other or whether the child keeps both grammars separate from early on. From a typological point of view, German and Polish are of particular interest here, since German nouns are usually preceded by an article form. Bare nouns are possible but restricted to particular configurations, e.g., plural nouns, or specific semantic types, e.g., mass nouns. The opposite is true in Polish. Since Polish does not have articles, a default NP is simply a bare noun. Expanded NPs, e.g., [Quantifier + N] or [Demonstrative + N] constructions are possible but restricted to

specific configurations. Thus, NPs of the form [Determiner + N] (henceforth [Det + N]) are the default in German and the exception in Polish, while NPs of the form [N] are the default in Polish and the exception in German, for further information cf. sec. 2. Despite the differences between the systems there is thus also overlap in the surface forms. Structural overlap in a specific domain has been identified as a crucial condition for cross-linguistic influence in bilingual L1 acquisition in prior research (Hulk, Müller, 2000; Müller, Hulk, 2001).

2   German speaking children do not only have to learn that NPs typically consist of [Det + N], they must also learn to understand different aspects of meaning contributed by definite vs. indefinite articles. The article system in German is exploited for reference to given/identifiable and discourse new entities, cf. section 2. Polish, on the other hand, relies to a great extent on a syntactic mode, when referring to given or new entities respectively. Bare nouns are in principle compatible with new and given information, but the relative position of the noun to the verb conveys information about the specific referring function: old information is typically found in preverbal position, whereas new information tends to be placed in post-verbal position, cf. section 2.

3   Besides structural overlap as a potential trigger for transfer, researchers concerned with child bilingualism mention a second factor, namely, that cross-linguistic influence is particularly likely to emerge at the interface between syntax and pragmatics (Hulk, Müller, 2000; Müller, Hulk, 2001). Since this is the case with referring expressions, the acquisition of the NP in German and Polish seems to be perfectly suitable to answer our research question.

4   It is important to keep in mind that it is not the target language system by itself, but rather the learner's knowledge at a given point in time that constitutes the basis for potential transfer (Hulk, Müller, 2000: 228). Both Polish and German monolingual children go through a phase in which they exclusively produce bare nouns (for German cf. Bittner, 1997; Eisenbeiss, 2000; Schlipphak, 2008; for Polish cf. the data from the Weist-Jarosz corpus [1] investigated in the current study). This also holds for the bilingual child in the current study. German determiners gradually emerge in the second year of life. We will compare the development of referring expressions in the bilingual child's languages in a longitudinal perspective.

5   In what follows, we will first have a closer look at the structure and function of the NP in German and Polish. We will then lay out the theoretical background of our research question and summarize the state of the art with respect to cross-linguistic influence in bilingual first language acquisition. After introducing our data and subjects, we will present and discuss our results. The paper will close with a short conclusion.

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1.   The corpus is available through the CHILDES database (https://childes.talkbank.org/). Details can be found in Weist and Witkowska-Stadnik (1986), Jarosz (2010) and in section 4.1.

2.   Reference in German and Polish

6   As far as the marking of referential functions is concerned, German and Polish differ quite dramatically from each other. The referential system of German is mainly based on the opposition of definite and indefinite articles which are obligatory for almost every NP (Vater, 2005). The choice between a definite or indefinite NP is motivated by the status of the referent. Entities which enter the communicative scenario are generally referred to by indefinite NPs [1] whereas entities that are already identified are marked with definite NPs [2]. [2] Mass nouns [3] or indefinite plurals [4] appear as bare nouns in German.

[1]   Ich   möchte   **einen Film**   sehen.
I   would-like   a   movie   watch.
'I would like to watch a movie.'

[2]   Heute   läuft   **der Film**   Forrest Gump   im   Fernsehen.
Today   runs   the   movie   Forrest Gump   on-the   TV.
'The movie Forrest Gump is on TV today.'

[3]   **Gold**   schmilzt   bei   1063   Grad.
Gold   melts   at   1063   degrees.
'Gold's melting point is at 1063.'
(Krifka, 1991: 401)

[4]   Auf   der   Wiese   habe   ich   **Kühe**   gesehen.
In   the   meadow   have   I   cows   seen.
'I saw cows in the meadow.'

7   In contrast to German, Polish does not have articles. The default NP therefore simply consists of a bare noun. The referential status of an entity is in the unmarked case signalled on the sentence level by the position of the NP relative to the main verb (Szwedek, 1974). While the preverbal position is typically reserved for given referents [5], new referents are predominantly placed in post-verbal position [6]. [3]

[5]   **Klucze**   leżą   na   stole.
Keys   lie   on   table.
'The keys are on the table.'

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2.   Articles in German (*der*, *die*, *das*) reflect the gender (masculine, feminine, and neuter) of the head noun. The forms can also be used independently as demonstrative pronouns:
Der/die/das   schläft.
This   sleeps.
'It sleeps.'

3.   However, it has to be emphasized that these are rather strong tendencies than grammaticised rules. The post-verbal position can also be used for given referents (Czardybon, 2017; Czardybon et al., 2014). There also seems to be a relation between definiteness and perfective aspect in Polish, but this is also a tendency rather than a regular marking. Like word order, it relies on global markings (i.e., structural properties of the sentence that go beyond the NP) (Sadziński, 1995).

[6]   Na   stole   leżą   **klucze**.
        On   table   lie   keys.
        'There are keys on the table.'

8   Yet, the marking of referential functions on the sentence level does not exclude the possibility of the expansion of the NP by adnominal pronouns in Polish (Gunkel et al., 2017). As a matter of fact, in some contexts, nouns can be marked by the demonstrative pronoun *ten* 'this' or by the quantifier *jeden* 'one' or the indefinite pronouns *jakiś* 'some'. These forms are exploited for explicitly marking the referential status of the noun in question. The form *ten* can mark given information [7] whereas the forms *jeden* and *jakiś* can mark new information [8].

[7]   Do   hotelu   weszła   **kobieta**.
        In   hotel   come-PST   woman.
        'There was a woman coming into the hotel.'

        Kiedy   wszedłem   do   środka,   zobaczyłem,
        When   Ø come-PST   in   inside,   Ø see-PST,

        że   przy   recepcji   stała   **ta   kobieta**.
        that at   reception   stand-PST   this woman.
        'When I came in I saw the woman at the reception.'

[8]   Kiedy   wszedłem   do   hotelu,   zobaczyłem,
        When   Ø come-PST   in   hotel,   Ø see-PST,

        że   **jedna/jakaś   kobieta**   stała   przy   recepcji.
        that one/some   woman   stand-PST   at   reception.
        'When I came into the hotel I saw a woman at reception.'

The referent of *woman* in [7] is considered to be given due to a previous mention in the discourse. To achieve coreferentiality, in the second sentence, the post-verbal NP *woman* is marked by the demonstrative pronoun *ten*. In [8], *woman* was not mentioned before so the status of the referent is new. The use of the pronouns *jeden* and *jakiś* is motivated by the preverbal position of the NP which otherwise would signal givenness. Thus, if a noun is preceded with one of these adnominal pronouns the referential status conveyed by the relative position of the noun to the verb is overwritten. In addition to discourse pragmatics, the use of these forms can also be influenced by factors such as register, style, or emphasis.

9   Hence, a German-Polish bilingual child has to learn that nouns in German are systematically preceded by articles and that the opposite is true for Polish. Furthermore, the same referential function is marked differently in both languages. In German, the status of the referent is locally expressed on the NP. This is possible but not systematically the case in Polish where the referential status of the NP is either left implicit, or marked on the sentence level, i.e., through the opposition between the preverbal and the post-verbal position of an NP.

3. Theoretical background about bilingual language acquisition

10 It is a well-established fact that bilingual children differentiate between the grammatical systems of the languages they are acquiring from early on (Meisel, 1986, 1989; Genesee, 1989; De Houwer, 1990). Yet, the parallel acquisition of two independent language systems does not exclude interactions between them. Indeed, numerous studies have reported structural influence from one language to another in the morpho-syntactic domain (Hulk, Müller, 2000; Müller, Hulk, 2001; Kupisch 2007). However, transfer of grammatical properties does not seem to affect all domains of grammar to the same extent. Hulk and Müller (2000) and Müller and Hulk (2001) suggest that cross-linguistic influence is most likely to occur in domains where grammatical features interact with regularities outside the domain of syntax (e.g., the flow of information in discourse) and their acquisition is therefore particularly complex. Based on the results of a number of studies, the authors propose two conditions under which cross-linguistic influence is likely to occur:

> a. The vulnerable grammatical phenomenon is a so-called interface property, e.g., a grammatical property involving the interface between syntax and pragmatics.
>
> b. The surface strings used by the two languages for the expression of the vulnerable grammatical phenomenon are sufficiently similar but not identical.

If conditions a. and b. are met, children are likely to overextend the structure of the language with the grammaticised structure (i.e. the language requiring an explicit marking of given and new information). A prime example is the bilingual acquisition of a null-subject language like Italian or Spanish in combination with a non null-subject language like German or English. [4] In these cases, studies converge on the observation that children tend to overuse overt pronouns in the null-subject language (Paradis, Navarro, 2003; Serratrice et al., 2004; Hacohen, Schaeffer, 2007; Otwinowska et al., 2020). They are thus extending the more transparent and less context dependent regularities encountered in one of their languages (e.g., German or English) to the other. Interestingly, however, Müller and Patuto (2009) report that, against their expectations, this kind of cross-linguistic influence was not attested in a French-Italian bilingual child. The authors attribute this to the fact that subject pronouns are quasi obligatory in French, whereas German and English allow topic drop under restricted conditions. It thus appears that children do not feel invited to overextend the system of their less ambiguous language unless both languages exhibit at least some within language variability with respect to the relevant phenomenon.

11 In the bilingual acquisition of Polish and German, all relevant conditions for cross-linguistic influence seem to be fulfilled. The grammar of determination, i.e.,

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4. Polish is a null-subject language like Italian and Spanish. For results concerning cross-linguistic influence in the domain of subject pronouns, see Jachimek, forthcoming.

the regularities underlying the presence and the choice of adnominal determiners clearly belongs to the interface phenomena (condition a.). The expression of concepts like definiteness and indefiniteness requires an integration of syntactic and pragmatic (and semantic) information. Even though German is a language with grammaticised (in)definiteness markers (articles) and Polish is not, the structure of the NP in both languages displays surface similarities that seem to be comparable to the kind of overlap that German and Italian/Spanish exhibit with respect to explicit subject pronouns (condition b.). Bare nouns as well as nouns preceded by determiners occur in both languages, albeit with different frequencies and with different underlying regularities, i.e., there is variation in both languages. Table 1 shows examples illustrating the surface overlap between NPs in Polish and German. The grey cells indicate the default variants for both languages.

	Polish	German
[N]	[9] W ogródku jest **piesek**. In garden is dog, 'There is a dog in the garden.' **Piesek** śpi Dog sleeps 'The dog is sleeping.'	[10 Hier ist Ø **Kaffee**. Ø **Tassen** stehen da hinten. Here is Ø coffee. Ø Cups are over there. 'Here is coffee. The cups are over there.'
[Det + N]	[11] Tu jest jeszcze **jeden piesek**. Here is still one dog. 'Here is yet another dog' Ja wolę **tego pieska**, a ty? I prefer this dog and you? 'I prefer this dog, and you?'	[12] Im Garten ist **ein Hund**. **Der Hund** schläft. In-the garden is a dog. The dog sleeps. 'There is a dog in the garden. The dog is sleeping.'

Table 1 – Bare nouns and NPs with determiners in German and Polish

Bare nouns in German are restricted to mass nouns (like *coffee* in [10]) and indefinite plural NPs (like *cups* in [10]). Kupisch (2000, 2007) reports that the proportion of bare nouns in German child directed speech is 18%.[5] Unfortunately, we do not have precise numbers for Polish, but according to standard descriptions bare nouns (like in [9]) make up for the vast majority of the cases. As shown in section 2, Polish nouns can be preceded by a singular quantifier or a demonstrative pronoun (like in [11]) in particular contexts. Despite the different default variants, table 1 shows that there is variability in both languages and surface overlap between them with respect to bare [N] as well as with respect to [Det + N]. Regarding the bilingual acquisition of Polish and German we would therefore predict that cross-linguistic influence is likely to occur.

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5. Kupisch (personal communication) analysed around 7500 NPs. Proper names and demonstrative NPs were excluded in order to determine the proportion of bare nouns vs. nouns preceded by an article or a contracted form (like *im* ('in the'), *am* ('at the'), etc.).

13   Predicting the direction of transfer is not that easy, however. Kupisch (2007) studies cross-linguistic influence in the acquisition of determiners in German-Italian bilingual children and discusses a model predicting "that it is always the same language that undergoes influence, namely the language that is ambiguous with respect to a structural property" (Kupisch, 2007: 75). As it turns out it is impossible to decide which of the determiner systems is more ambiguous (in the sense of being constrained by additional pragmatic factors), Kupisch proposes an alternative hypothesis, stating that "the language providing the less complex analysis for a grammatical domain influences the language with the more complex analysis" (Kupisch, 2007: 58). In her study, complexity has to do with the number of competing article forms per language, the number of grammatical features they encode and the predictability of the form (e.g., the correspondence of noun-final and article-final vowels in Italian), amongst others.

14   In what follows we will try to determine the relative degree of structural ambiguity and formal complexity with respect to German and Polish. German nominal determination consists of a quasi-obligatory system of local markings (within the NP) that is quite transparent. Concepts like definiteness and indefiniteness are grammaticised in German and often left implicit or marked less consistently in Polish. As we have shown above, Polish nouns can but do not need to be expanded by indefinite or demonstrative pronouns. In addition, adnominal demonstrative pronouns are not restricted to deictic contexts, but also licensed by a variety of contextual factors that are less well understood. Givenness (i.e., one of the components that leads to definiteness marking in German) is typically associated with a preverbal position, but this is only one out of many aspects of meaning conveyed by word order. It is thus plausible to say that the reference system of German is less ambiguous than the Polish one and to predict transfer from German to Polish. In light of this scenario, the bilingual child would look for ways to express a concept that she systematically encounters in the language with the more consistent marking (German) in her other language as well.

15   Determining the relative degree of formal complexity of the reference systems in German and Polish is even less straightforward. In both languages, adnominal determiners (if present) agree in number and gender with the noun and furthermore reflect case of the NP. The formal inventory of nominal inflections in Polish is, however, comparably rich and complex. As a highly inflecting language, Polish morphologically distinguishes singular and plural and also six to seven cases. Its nouns belong to one of three genders (like German) and a variety of different inflectional classes. Syntactically spoken, however, the structure of the default Polish NP is much simpler than the corresponding German NP. Most of the time there is only a structurally simple bare N and there is no grammaticised distinction between two types of articles (definite and indefinite) involved. With respect to bilingual acquisition, it is thus also plausible to predict transfer from Polish to German that would result in a prolonged phase of bare noun usage in comparison to monolingual German children.

16   Serratrice (2013: 21) reviews studies on cross-linguistic influence in child bilingualism in different linguistic domains and with diverse language pairs and comes to the conclusion that the results are not always in full accordance to the original proposals put forward by Hulk and Müller (2000) and Müller and Hulk (2001):

> Although our understanding of what drives cross-linguistic influence has now benefitted from more of a decade of intensive research, it is clear that the picture is becoming even more complex and that a multiplicity of factors are involved.

The author does not only consider language external factors like language dominance or general bilingualism effects, but also discusses the intricacies of making predictions for transfer on the basis of notions like elevated ambiguity or complexity. Against this background and given the above mentioned difficulties we will take the following hypotheses into account when studying the development of the NP in a German-Polish bilingual child:

> 1. There will be cross-linguistic influence since we are dealing with a syntax-pragmatics interface phenomenon and there is sufficient variability within and surface overlap between the relevant structures of both languages.

With respect to the direction of transfer, two hypotheses are equally plausible:

> 2. a. The simple NP-Structure of Polish (predominantly bare N) will be transferred to German, causing a delay in the acquisition of German determiners in comparison to monolingual German speaking children.
>
> b. The consistent and local determination of German NPs will be transferred to Polish, causing an overuse of adnominal demonstrative pronouns (in the case of definite reference) or the quantifier *one* (in the case of indefinite reference).

17   In principle, 2a and 2b are not even mutually exclusive. In what follows, we will consider all three hypotheses. We will investigate the development of the NP in one German-Polish bilingual child and one Polish monolingual child and refer to published results on the monolingual acquisition of German. Importantly, however, when studying cross-linguistic influence, we will not take the target language systems as our frame of reference, but the developing child grammar. After all, the ambiguity or the complexity of structures that might invite cross-linguistic transfer in one direction or the other can only be determined with respect to the properties of the learner grammar at any given point in time.

4.   Method

4.1.   Subjects

18   The present study involves spontaneous speech data from one German-Polish bilingual child at the age between 1;5 and 4;0 and one Polish monolingual child aged between 2;1 and 3;2. The bilingual corpus consists of 160 video recordings each

between 30 and 60 minutes long and transcribed in ELAN. [6] The recordings were conducted approximately four times per month. The bilingual child – Julka – has a native German-speaking mother and a native Polish-speaking father. The input she was exposed to followed the one-person-one-language principle. The interaction with two elder brothers took place either in German or in Polish. Until age 2;9 the child grew up in The Netherlands, albeit without considerable contact to Dutch. When the family moved to Germany, the child attended a German-speaking day-care center half time from the age of 3;3 onwards. For the other half of the day, a Polish speaking au pair took care of the child. She exclusively spoke Polish to Julka. In sum, the input can be characterised as being highly balanced. We thus assume that Julka's bilingual development up to the age of 4;0 was not influenced by externally motivated dominance effects.

19   The data of the monolingual child – Wawrzon – are taken from the Weist-Jarosz corpus (see footnote 1). There are 20 audio samples recorded in two-week intervals. The recordings are between 30 and 50 minutes long. Both children were recorded in their natural settings while playing or talking with their care givers.

4.2.   Annotation method and data collection

20   For each child, all nominal expressions referring to persons and objects were selected from the utterance samples independently of the linguistic-situational context. Uninterpretable utterances, imitations and references occurring in songs and poems were excluded from the analysis. The selected NPs were analysed according to morpho-syntactic, semantic, and pragmatic criteria. The morpho-syntactic coding focused on the grammatical number of the noun and the type of determiners used (if any). For Polish, the position of the NP relative to the main verb (preverbal vs. post-verbal) was coded as well. As for determiners, we distinguished between bare nouns, definite and indefinite NPs in German, whereas Polish NPs were coded as either bare, demonstrative or indefinite. In both languages, possessive (*my car*) and numeral determiners (*two cars*) as well as genitives (*mama's car*) were coded as well, but these cases are not considered in the present paper.

21   Concerning semantic features of the NP, we separated proper names from common nouns and analysed the latter in terms of animacy and countability.

22   Finally, the selected NPs were coded for their pragmatic function in the given context. In a first step, we investigated whether the child refers to a particular (*specific*) or to an arbitrary (*non-specific*) member of a class. Specific referents were then analysed with respect to the knowledge shared by the child and the interlocutor. To determine whether a specific referent is considered as *given* or *new* we examined if it was mentioned in the previous discourse. Since physically present entities can be considered either as *new* or as *given*, gestures were analysed to establish the status of the referent. Entities pointed to were coded as situationally *given*. On the other

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6.   Max Planck Institute for Psycholinguistics, The Language Archive, Niejmegen, The Nederlands, https://archive.mpi.nl/tla/elan; Wittenburg et al. (2006).

hand, entities which were physically present but not emphasised by gestures were coded as *new*. Discourse new referents could still be coded as *given* when the referents could be determined on the basis of knowledge shared between the child and the adult interlocutor (e.g., *The sofa*, referring to the only sofa in the house). As in many other studies (cf, Leys, 1973; Kuno, 1970; Carlson et al., 2006; Wittenberg, 2016; Bausewein, 1990; Du Bois, 1980), predicative NPs (*This is a cat.*), weak definites (*I go to the supermarket.*), NPs within light verb constructions (*She gave him a kiss.*) and vocatives (*Mum, look at it!*) were classified as non-referring.

23   The use of nominal forms for different pragmatic functions in the bilingual child was compared to form-function-associations in the monolingual child. To determine whether differences between the children are statistically significant, chi-square tests with the significance level of $p < .05$ were carried out per age point.

5.   Results

24   Table 2 presents the age ranges at which the bilingual child acquired nominal as well as pronominal referring expressions in German and Polish. In order to establish whether a form should count as acquired, both the frequency and the variability of use were examined. In the present study, a determiner is considered as acquired if it is used in non-imitative contexts with at least three different nouns within one recording [13a–c]. Correct gender agreement was not required.

[13a]   JUL (2;3):   Das   ist   **das   Mama   Huhn**.
This   is   this   mama   chicken.
'This is the chicken mama.'[7]

[13b]   JUL (2;3):   Wo   ist   **das   Bär**?
Where   is   this   bear?
'Where is the bear?'

[13c]   JUL (2;3):   Das   ist   **das   Nummer**.
This   is   this   number.
'This is the number.'

25   Table 2 shows that the first referring expressions are bare nouns and, a short time later, demonstrative pronouns in both languages (*das* in German and *ten* in Polish). Around the age of two, additional forms of demonstratives (*die*, *der* in German and *ta*, *to* in Polish) and definite articles in German (*das*, *die*, *der*) are acquired. The latter forms are the first NP-internal markings. At the same time, bare NPs are still frequently used in both languages. Indefinite articles in German (*ein* and *eine*) and adnominal demonstrative pronouns in Polish (*ten*, *ta*, *to*) emerge three months later. Based on table 2, we can thus differentiate between three acquisitional stages for NPs:

bare nouns > definite/demonstrative determiners > indefinite determiners

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7.   Only the speech production of the child is glossed in the examples cited in the current study.

Expression/ Age	1;4-1;5	1;6-1;7	1;8-1;9	1;10-1;11	2;0-2;1	2;2-2;3	2;4-2;5	2;6-2;7	2;8-2;9	2;10-2;11	3;0-3;1	3;2-3;3	3;4-4;0
bare nouns (German)	■	■	■	■	■	■	■	■	■	■	■	■	■
bare nouns (Polish)	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
das-pronoun		■	■	■	■	■	■	■	■	■	■	■	■
ten-pronoun			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
other demonstratives (*die, der, ta, to*) (German)					■	■	■	■	■	■	■	■	■
other demonstratives (*die, der, ta, to*) (Polish)						▨	▨	▨	▨	▨	▨	▨	▨
def-NPs					■	■	■	■	■	■	■	■	■
dem-NPs							▨	▨	▨	▨	▨	▨	▨
indef-NPs (German)							■	■	■	■	■	■	■
indef-NPs (Polish)							▨	▨	▨	▨	▨	▨	▨

■ German
▨ Polish

Table 2 – The acquisition of referring expressions in Julka's German and Polish

5.1. Phase 1

The acquisition of referring expressions starts with bare nouns [14a–b], followed by the demonstrative pronouns *das* and *ten* that are used as default forms for establishing joint attention [15a–b].[8] A pointing gesture often reinforces their deictic function.

[14a] JUL (1;11): Hier   **Bär**   sitzt. (pointing at a stuffed bear)
                Here   bear   sits.
                'The bear is sitting here.'

[14b] JUL (1;11): Jeszcze   szukam   **konika**.
                Still   look for   pony.
                'I am still looking for the pony.'
                (*pony* was mentioned in the previous discourse)

[15a] JUL (1;11): **Das**   holen. (pointing at a cup)
                That   get.
                'Get that/Give me that'

[15b] JUL (1;10): A   **ten**?
                And   this?
                'And this one?'

_____

8. Both monolingual Polish children and adult native speakers of Polish exclusively use the neuter form *to* in such contexts. Factors which lead to the overgeneralization of the masculine form *ten* in the bilingual child will be not discussed in the present paper.

These elementary referring expressions are definite in nature (Leiss, 2000). More precisely, they are mostly restricted to visible referents with clearly perceivable contours that can therefore be easily identified by the interlocutor. Their preponderance in early acquisitional stages could be due to the cognitive limitations of young children whose referring speech acts are bound to the HERE and NOW. As a consequence, they predominantly refer to entities that are part of the immediately surrounding communicative situation. Considering this restriction, it does not come as a surprise that demonstratives are the first grammatical markers of reference in both languages.

5.2.   Phase 2

27   From the age of two the referential systems begin to differ. Figure 1 presents the percentage of bare nouns, definite/demonstrative and indefinite NPs out of the total number of utterances with a singular NP in both languages between 2;1 and 2;3. Mass nouns and plural NPs are excluded since they can also be realised as bare nouns in German. The x-axis represents age phases. Total numbers of utterances are given in brackets underneath the columns.

28   As can be seen in Figure 1, the NP in Julka's Polish mostly remains bare, whereas in German first combinations of [DET + N] are attested. To be more precise, the use of determiners in Julka's German is mostly restricted to definite forms. Until the age of 2;3.19 indefinite NPs are produced only sporadically. The relative frequency of indefinites fluctuates between 1.3% and 1.8%, which means that there was only one token per recording. In contrast, definite articles make up between 1.8% to 13.7% of all NPs and are used with more different types (see table 2).
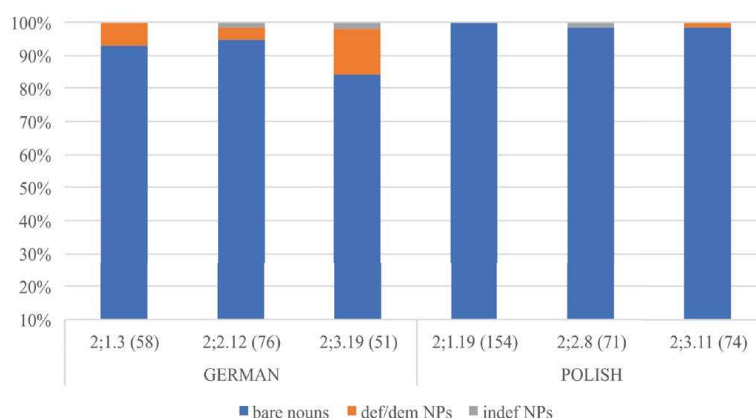

Figure 1 – Percentages of bare nouns, definite/demonstrative and indefinite NPs
in Julka's German and Polish between 2;1 and 2;3

Age	def. NPs (types/tokens)	indef. NPs (types/tokens)
2;1	4/4	-
2;2	2/3	1/1
2;3	5/9	1/1

Table 3 – Types/tokens used with definite and indefinite articles
in German between 2;1 and 2;3

Based on table 3 it can be claimed that definite articles are acquired before indefinite article forms, even though bare nouns still account for the vast majority of nominal referring expressions.[9] The dominance of definite determiners over the indefinite ones is almost exclusively linked to the form *das*. This form is homophonous and can be used as a (free) demonstrative pronoun, an adnominal demonstrative pronoun and a definite article. The neuter form is used independently of grammatical gender in order to establish joint attention to entities and situations [16].

[16]   Siehst   du   **das**   da? (situational context: a dog chasing a cat)
        See   you   this   there?
        'Do you see this?'

The specific function of *das* has to be determined with the help of the context and the syntactic environment. In early acquisitional stages the demonstrative pronoun is exclusively used for the reference to physically present and salient referents. Since the physical presence is also one of the conditions for the first definite articles attested in the corpus, a developmental trajectory of the demonstrative *das* to the adnominal determiner *das* is highly plausible. Table 4 shows the frequencies of all [DET + N] structures produced by the bilingual child at the relevant age in German.

Age	*das* (neuter)	*die* (feminine)	*der* (masculine)
2;1	3	1	
2;2	3		
2;3	9		
2;4	13	5	9

Table 4 – The production of [DET + N]-structures in German between 2;1 and 2;4

The numbers given in table 4 show that until the age of 2;3 the neuter form *das* is the only productive determiner in the child's speech production. *Das* is overgeneralized and combined with nouns of all three genders [17]. Even proper names like *Mama* and *Franek* in [17] are affected by the overgeneralization of *das*.

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9.   Studies on the acquisition of determiners in German mostly report that monolingual children acquire indefinite articles before definite ones (Mills, 1985, 1986; Koehn, 1994; Bittner, 1997; Schlipphak, 2008). Since transfer from Polish can be excluded in the current study we attribute the different order of acquisition we found to different criteria for productivity applied in the relevant studies.

[17]   JUL (2;3): Das   ist **das Mama**   und das   ist **das Franek**.
                    This   is   the   mommy   and this is   the   Franek.
                    'This is the mommy and that is the Franek.'
                    (Franek – the brother of the child)

Furthermore, 75% of the [DAS + N] structures between the age of 2;0 and 2;3 (12/16) are used to refer to visible referents regardless of their referential status. As a consequence, even predicative NPs in introductions, which require an indefinite article in German are combined with the neuter *das*-form, cf. [18]. [10]

[18]   JUL (2;3): Das   ist   **das Hündchen**. (instead of *Das ist ein Hündchen.*)
                    This is   the   doggy.
                    'This is the doggy.'

The NP *das Hündchen* in [18] refers to a stuffed dog, which is lying next to the child and the interlocutor but was not mentioned in the previous discourse. The use of the definite article *das* is therefore inappropriate.

29   These results show that a template of the type [*das* + N] emerges in German between 2;1 and 2;3. Definite, not indefinite markers are the driving force for the development of the NP in German. It is likely that the first definite articles develop out of the general demonstrative pronoun *das* towards a more general template of the type [Det + N] that is acquired in phase 3 (see below).

30   Regarding a potential transfer from Polish to German (see hypothesis 2a above), we considered the possibility that the frequency of bare nouns in the Polish input could have an impact on the bare noun phase in German, i.e., the phase could be prolonged in comparison to monolingual children. This does not seem to be the case, however. The production of the first articles in the monolingual acquisition of German is also observed around the age of two (Bittner, 1997; Kupisch, 2007). However, Kupisch (2000, 2007) emphasizes that until the age of 2;4 maximally two tokens of the kind [Det + N] per recording are produced. In view of these findings, we can claim that the bilingual child does not differ from monolingual children acquiring German. What is more, before the age of 2;4 she produces definite articles more frequently than the monolingual child investigated by Kupisch. Thus, hypothesis 2b, claiming that the simultaneous acquisition of Polish causes a delay in the acquisition of articles in German can be rejected.

5.3.   Phase 3

31   In the final acquisitional stage described here, the definite article in German develops further in the direction of the target language. In particular, the forms are now marked for gender (*der*, *die*, *das*). At this point, definite NPs are no longer restricted

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10. The use of a definite article in the predicative position is only appropriate if the NP has either an identifying function (*Das ist die Mutter meiner Frau.*) or was mentioned in the previous discourse (*Ich habe ein Hündchen. Das ist das Hündchen.*), cf. Chur (1993).

to the reference to visible referents but can also be used anaphorically [19] or for unique [20] referents.

[19]   Situation: The child is rummaging in a box full of stuffed animals.
          JUL (2;5):   Ich   suche   **ein Bär**   den   tata   hat   mir   gegeb(en).
                       I   look for a   bear   which   daddy   has   me   given.
                       'I am looking for a bear which daddy gave me.'

                       Den Bär   hat   ein   Aua.
                       The   bear   has   an   ouch.
                       'The bear is ill.'

[20]   Situation: Dialogue with her mother.
          JUL (2;4):   Ist   was   Geheimes.
                       Is   something   secret.
                       'It is something secret.'

          MOT: Du hast was Geheimes?
               'You have something secret?'

          JUL (2;4):   Ja,   mach   **die Augen**   zu.
                       Yes,   make   the   eyes   closed.
                       'Yes, close your eyes!'

The use of a definite article in [19] is motivated by the mention of the NP *ein bär* in the previous discourse, whereas the NP *die Augen* in [20] is combined with a definite article due to its uniqueness within the shared set.

32   Figure 2 displays that indefinite articles show up in a noteworthy number from age 2;4.18 onwards. The use of both articles results in an abrupt decrease of bare nouns which from now on rarely make up more than 20 to 30% of all NPs in one recording. In the majority of the cases, definite and indefinite articles are used appropriately.
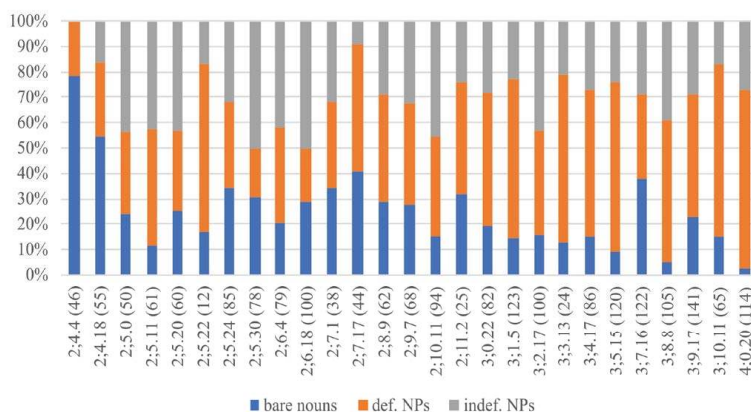

Figure 2 – Percentages of bare nouns, definite and indefinite NPs
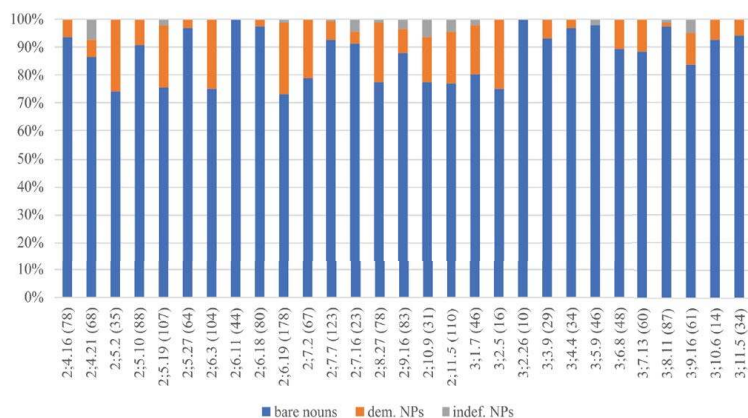in German between 2;4 and 4;0

Figure 3 – Percentages of bare nouns, demonstrative, and indefinite NPs in Polish (2;4 and 4;0)

As shown in figure 3, shortly after the acquisition of both article forms in German around the age of 2;4, the number of determined NPs in Polish starts to increase. The template [DET + N] is gaining ground in Polish, albeit almost exclusively with demonstrative pronouns. The percentage of indefinite NPs remains under 10%.

33   Considering these tendencies, it can be assumed that the template [DET + N] with its explicit marker for definiteness is transferred from German and used as a blueprint for the NP-structure in Polish. To verify this hypothesis, we examined the use of demonstrative pronouns in one monolingual child. Figure 4 presents the percentage of demonstrative NPs (*ten*/*ta*/*to* + *N*) in both children. To keep the total number of utterances containing nominal expressions as constant as possible the use of demonstrative NPs was investigated in two months' intervals except the last age phase which comprises recordings from three months.
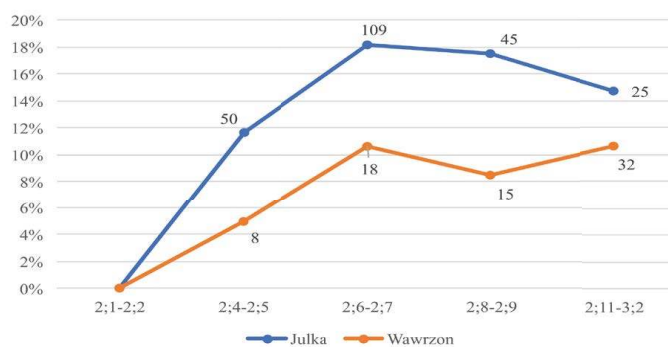

Figure 4 – Percentages of demonstrative NPs (*ten*, *ta*, *to* + N) in Polish in both children [11]

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11. Numbers given in the figure refer to the absolute number of tokens of [DET + N] found in each phase.

Figure 4 shows that until the age of 2;4 both children produce a similar proportion of adnominal pronouns. After this period, in each age phase, the bilingual child uses 4% to 10% more pronouns than the monolingual one. Except for the phase 2;11–3;2, the differences between the children are statistically significant (2;4-2;5: x^2 (1, N = 594) = 5.27, p < .05, C = 0.1; 2;6-2;7: x^2 (1, N = 769) = 5.02, p < .05, C = 0.08; 2;8-2;9: x^2 (1, N = 434) = 6.44, p < .05, C = 0.1).

34   Not only does Julka use much more demonstrative pronouns than the monolingual child, she also extends the use to pragmatically inappropriate contexts in Polish. More precisely, she produces demonstrative NPs for reference to highly activated and clearly identifiable referents [21] and combines demonstrative pronouns with proper names [22].

[21]   Situation: The child is playing with stuffed dogs.
         JUL (2;5): Mamie   s(chowam) **ogon**, bo   zimno   im (jej).
                    Mommy's Ø hide   tail,   because   cold   her.
                    'I hide the tail of the mummy.'

                    Ten   ogon ja   s(ch)owałam.
                    This   tail   I   hid.

                    'I have hidden this tail.'

[22]   Situation: The child prepares meals and drinks for stuffed animals.
         One of the bears is called "Jussi".
         ADULT: Popatrz Jussi wygląda na głodnego.
                   'Look, Jussi looks as if he was hungry.'

         JUL (2;5): Tutaj jest **Jussiego**. I   tutaj nalewam coś   tego **Jussiego**.
                    Here is   Jussi.   And here pour   something this Jussi.

                    'Here is Jussi. And here I'm pouring Jussi a drink.'

These results show that the child transfers the structure of the German NP into her Polish. Nevertheless, the influence of German is restricted to the marking of definiteness. As a consequence, the child overuses demonstrative but not indefinite adnominal pronouns in Polish. Thus, in the nominal domain, both referential systems are not completely autonomous. However, it has to be emphasized that the bilingual corpus comprises more recordings than the monolingual one which might increase the chance of using demonstrative pronouns in inappropriate contexts.

6.   Conclusion

35   Our results show that, in general, the child is highly sensitive to the structure of the NP. In her use of German, from an early age onward, the head of the NP is expanded by a form that could be a demonstrative or definite article form, i.e. *das*. In contrast, in Polish the child prefers to produce bare nouns, which is in line with the Polish grammar.

36   Nevertheless, in very early acquisition stages the child mostly produces bare nouns in both languages, i.e., she focuses on the meaning rather than on the structure of the NP. At this point, in the acquisition process it cannot be excluded that this behavior is also reinforced by the Polish input, since the NP structure in Polish usually consists of a bare noun. However, as demonstrated, this happens only during a very short period. Furthermore, a comparison with data from monolingual German speaking children shows that they also go through this period, and that Julka's production of bare nouns occurs at the same time.

37   A closer look at how the position of DET in Julka's NP productions is filled reveals that in early stages the form *das* is by far preferred. Keep in mind that *das* can be the neuter article form in German as well as a demonstrative pronoun. We found that the path for building the NP-structure starts out from the demonstrative pronoun *das*, cf. utterances like *das haben*, *das da*. In a second step, this form enters the NP structure. This claim is supported by the overgeneralization of *das* in NP productions in early recordings, i.e., (appropriate) masculine and feminine article forms (*der*, *die*) are undergeneralized. On the basis of such data, we conclude that the form *das* is the key that opens up the NP structure in German. In the course of acquiring German, the child learns successively that the demonstrative form *das* has to be reanalysed as an article form in specific syntactic environments.

38   Our main concern in this paper was to determine if the grammars of the two simultaneously acquired languages are distinct from early age on or if they overlap. We claimed that the two languages involved in this study are suitable to answer this research question, since the child is dealing with a syntax-pragmatics interface phenomenon that shows sufficient surface overlap between German and Polish NP-structure. As a matter of fact, we found that in the structural domain investigated transfer from one language to the other takes place. After the acquisition of article forms in German, the child starts to produce adnominal pronouns in Polish, albeit demonstrative pronouns are more dominant than indefinite pronouns. The percentage of demonstrative NPs is 4% to 10% higher in the bilingual child than in the monolingual one. Besides quantitative differences, some qualitative differences were observed as well. Unlike the monolingual child, Julka combines demonstrative pronouns with proper names and uses demonstrative NPs to refer to highly activated and unambiguous referents. Thus, there is evidence that the child transfers the structure of the German NP onto Polish. However, the transfer is limited to demonstrative pronouns. These results are surprising in so far as the prerequisites stated by Hulk and Müller (2000) and Müller and Hulk (2001) are fulfilled for both demonstrative and indefinite pronouns. This raises the question what factors lead the child to transfer demonstrative but not indefinite pronouns. It is not excluded that the linguistic-situational context plays a role here. Young infants mostly refer to directly perceivable entities which are part of the actual speech situation. The underrepresentation of indefinite pronouns might also be due to the input, since demonstrative pronouns are much more frequent than indefinite pronouns in Polish, cf. Grucza (1995). This is also reflected in the

speech productions of the monolingual child where we find only very few indefinite pronouns. When Wawrzon produces adnominal forms, these forms are definite markers like demonstrative pronouns.

³⁹ To conclude, the German/Polish bilingual acquisition of reference shows traces of cross-linguistic influence. Overgeneralization of the NP-structure moves from German to Polish. In particular, the concept of definiteness turns out to be a driving force for the expansion of the noun phrase in both languages. In German, definite articles are acquired three months earlier than indefinite articles; in Polish, demonstrative but not indefinite pronouns are overused. From a cognitive perspective, the preference for an explicit marking of definiteness is not unexpected, since the first language experiences of young children are mostly based on the contact with specific family members, e.g., mother and father. Furthermore, these experiences are limited to the shared "here and now". Nevertheless, the realibility of the results has to be viewed with great care since our study was limited to one bilingual and one monolingual child, which was due to the fact that longitudinal data from the relevant age ranges are scarce for Polish.

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