The acquisition of reference: a cross-linguistic study
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8 The acquisition of reference with pronouns

8.1 Introduction

Chapter 7 examined the use of different types of determiners in relation to the pragmatic factors of specificity, new/given in discourse and familiarity. This chapter focuses on pronouns. The examples below show that pronouns can be used felicitously in some pragmatic contexts (1), but not in others (2).

(1) Felicitous use of pronoun (Peter, 3;3, English)

chi: Oh there was a big bad wolf in here last night and he brought that pole and he broke it.

(2) Infelicitous use of pronoun (Peter, 3;3, English)

%sit: Peter is talking about playing basketball in the past.
chi: And when the basketball had eyes!
inv: The basketball had eyes?
chi: Yes had eyes.
[...]
chi: Goes up in the sky # the basketball # catches and he knocks it on his house and he says # oh good...

Felicitous use of pronouns depends on whether the intended referent is easily accessible to the hearer. This is the case in example (1), where the intended referent ‘wolf’ has just been mentioned in the discourse. Speakers can also use

1 Parts of this chapter appear in Rozendaal and Baker (2006), Rozendaal (2007a) and Rozendaal and Baker (2008b).
pronouns for referents that are new to discourse, as long as these are familiar to both speaker and hearer on the basis of the referents being physically present in the non-linguistic context (exophoric reference, exp) and if these have the joint attention of both speaker and hearer. The speaker must thus also take account of the listener’s perspective in pronoun use. In example (2), this is not the case. The referent that the child is talking about, using the pronoun he, is new to the discourse and not physically present (endophoric reference, end). Therefore, the hearer (or reader) cannot identify the referent of he properly. Pronouns are thus appropriate for referents that are discourse-given and for discourse-new referents that are physically present, but are inappropriate for discourse-new referents that are not physically present. Full nouns or proper names must be used in the latter case (§2.4.1).

The current chapter examines when young children acquiring Dutch, English or French start to show sensitivity to pragmatic factors in pronoun use and how this sensitivity develops. This will be compared to the use of full nouns and proper names. As pointed out in §2.4.1, the non-specific/specific distinction is less prevailing in pronoun use than in determiner use (see also §8.2). The current chapter, therefore, only deals with the pragmatic factors of new/given in discourse and familiarity to the hearer based on physical presence or absence of the referent. The main question in this chapter relates to Research Question A from §3.5:

*Do children acquiring Dutch, English or French distinguish between new/given in discourse and physical presence/absence in the use of pronouns as compared to full nouns and proper names?*

Various studies have shown that, outside the realm of language, two- to three-year-old children can distinguish new from given and are to some extent also aware of the perspective of other people (§3.3). If children can benefit from these cognitive abilities in language use, one would expect correct pragmatic use of pronouns for the new/given distinction from the moment that these forms have become productive in language use, that is, shortly after 2;0 (§5.4). Complete understanding that others’ minds are separate from one’s own seems to take at least until age four (ToM-development). Moreover, in determiner use (Chapter 7), the children investigated in this study only start to become sensitive to the perspective of the hearer between 2;9 and 3;3 and have not reached an adult level
before the end of the investigation period. It is therefore likely that the children will also use pronouns incorrectly in relation to the pragmatic factor of familiarity to the hearer.

In contrast to what was found for determiner acquisition, there are no large differences between the children acquiring Dutch, English or French in the timing and speed of pronoun acquisition (§5.4.4). The role of the speed of morphosyntactic acquisition on form-function associations can therefore not be investigated for pronoun use.

The influence of the input can be investigated. Language-specific patterns of form-function combinations in the input may be evident early in the children’s use of pronouns for pragmatic functions. In addition, high frequency and consistency of a particular form-function combination in the input might lead to faster acquisition (§3.2.2). The possible influence of input cues was formulated as Research Question C in §3.5. It is adapted here to the acquisition of pronominal forms for reference.

What is the influence of the input in the acquisition of form-function combinations for pronouns in children acquiring Dutch, English or French?

In the next section (§8.2), some methodological points are considered that are relevant to the analysis in the current chapter. The focus lies on those points that differ from the analysis of determiner use in the previous chapter. The associations between pronouns and pragmatic functions in the input will be investigated in §8.3, followed by the development of pronoun use for pragmatic functions by the children in each of the three languages (§8.4). Finally, the influence of the input is discussed in §8.5.

8.2 Methodological considerations
The use of pronouns will be contrasted with full lexical nouns and proper names in the analyses. The use of different types of pronouns for pragmatic functions will also be examined in more detail. To this end, pronouns will be subdivided into personal pronouns, demonstrative pronouns and ‘other’ pronouns. The last group consists of possessives (e.g. his/zijn/son), numerals (e.g. two/twee/deux), relatives (e.g. that/die/que) and reflexives (e.g. himself/hemzelf/se). The pronouns in the category ‘other’ are either infrequent in the data of most of the children or acquired late (§5.4). A separate analysis of the pragmatic use of these forms is
therefore not considered meaningful and the focus of the detailed analyses lies on the use of personal and demonstrative pronouns only.

The pragmatic functions that will be examined for pronoun use are not the same as those examined for determiner use in Chapter 7. First, the use of pronouns for labelling will not be studied in full detail. In labelling, the speaker categorizes, names or identifies an entity and a pronominal form is often not informative enough for these purposes (§2.4.1). There were only sixteen instances of labelling in combination with a pronoun in the children’s data. In half of these, the child points out who the possessor of an item is, as in (3). In the other half, the child matches a person, object or picture with its linguistic reference, which has often been used in the immediate preceding discourse context, as in (4). Although videos could not be used in this study (§4.2), it is very likely that in the latter case, children combine their use of a pronoun with a pointing gesture to identify the referent. In example (4), this pointing gesture is mentioned in the extra-linguistic description. In the input, there were three instances of pronoun use for labelling, which all had the function of identification, as in (4). Due to the low frequency of pronouns for labelling, it was decided not to investigate this further.

(3) Pronoun for labelling/identifying to indicate possession (Sarah, 2;6, Dutch)

CHI: Is mijnes.

‘Is mine’

(4) Pronoun for labelling/identifying in identification (Anne, 2;6, French)

MOT: Elle s’apelle comment, sa copine?

‘What’s her name, her friend (‘s name)?’

MOT: Pimprenelle?

‘Pimprenelle?’

CHI: Oui.

‘Yes’

MOT: Pimprenelle.

‘Pimprenelle’

CHI: C(e) est lui, elle s’apelle.

‘That’s him (= her), she is called (Pimprenelle)’

%act: Pointing at the one who’s called Pimprenelle.

Pronoun use will not be investigated for non-specific reference either. The results from Chapter 7 have shown that non-specific reference is strongly associated with nouns with an indefinite determiner. However, in §2.4.1 it
was argued that pronouns can also be used for non-specific reference. In the current data however, pronouns were infrequent for this pragmatic function. There were 44 instances in the children’s speech and 15 instances in the input. These occurrences mainly involved one type of non-nominal form. That is, in 95% of the instances, the children refer non-specifically to one instance out of many with a numeral, as in (5). The adults also use numerals most frequently (67% of the instances of pronoun use for non-specific reference). It was decided not to investigate the use of pronouns for non-specific reference further.

(5) Non-specific reference to one instance out of many with numeral (Léa, 2;9, French)

%sit: Léa has a bag of sweets and is offering her grandparents sweets.

CHI: Tiens!
‘Keep’

GRM: Merci.
‘Thank you’

CHI: Tu en veux encore une?
‘Do you want another one (= sweet)?’

Having excluded labelling and non-specific reference, the use of pronouns, nouns and proper names will only be investigated for the pragmatic functions of discourse-new and discourse-given. To examine whether the children are sensitive to the perspective of the listener (familiarity), discourse-new referents are subdivided into referents that are physically present (discourse-new-exp) or physically absent (discourse-new-end) (§2.3). For referents that are physically present, pronouns can be used to introduce the referent to discourse. The speaker might at the same time also create joint attention for the referent through deictic means, such as pointing, eye gaze or body lean. This is, however, not investigated here, since video-recordings are needed for this type of analysis and these were not available at the time of coding (§4.2). Pronouns are usually inappropriate for discourse-new referents that are physically absent, because there is no linguistic or extra-linguistic source for the hearer to identify the referent (see example 2). A noun or proper name should be used instead. If a speaker does use a pronoun here, it indicates that she does not take the listener’s perspective into account. ²

² In §2.4.1, I showed that pronouns can be used felicitously for discourse-new-end in some contexts.
Discourse-given referents are subdivided into discourse-given-maintenance and discourse-given-shift. The difference between these is the recency of their previous mention (§2.3). A subsequent mention that is similar to the immediately previous mention is termed referent maintenance. Pronouns are the most felicitous forms for maintenance, since the use of a nominal form is often redundant. In referent shift, the distance between the two subsequent mentions is larger. Then, (definite/demonstrative/possessive) nouns or proper names are equally appropriate or even better than pronouns (§2.4.1).

8.3 Input

8.3.1 Background analyses of pronoun use in the input

The input data can be pooled if the adults’ use of pronouns, nouns and proper names for pragmatic functions does not differ in relation to (1) the children’s age (2;3 or 3;3), (2) the child to whom the input is addressed and (3) the type of interlocutor ((grand)parent or investigator) (see also §7.2).

The Dutch input data did not differ for these three variables. The data can therefore be pooled for this language. In English, age and type of interlocutor were of no influence, but a loglinear analysis revealed that there were some differences in form-function combinations with regard to the child to whom the input was addressed ($\chi^2=22.61$, df=12, $p=0.03$). The effect is mainly due to differences in form-function use between Nina’s mother and Adam’s mother ($\chi^2=14.00$, df=6, $p=0.03$) and between Nina’s mother and the investigators in Peter’s data ($\chi^2=12.27$, df=6, $p=0.056$). Statistical analyses on the source(s) of these differences cannot be carried out due to low cell frequencies. However, by comparing percentages of form-function use (see Appendix C), it appears that Nina’s mother uses fewer pronouns and more nouns for discourse-new-exp (92%) than both Adam’s mother (60%) and the investigators in Peter’s data (62%). The input to Nina also contains more nouns for discourse-given-shift (46%) than the input to Adam (31%) or Peter (33%). There does not seem to be a specific reason in the data for this more frequent use of nouns in the input to Nina. It is important to keep in mind that both nouns and pronouns are appropriate referential expressions for discourse-new referents that are physically present and discourse-given-shift (§2.4.1). The difference between the adults might thus be purely stylistic. It was therefore decided to pool the English input data.

In French, form-function combinations did not differ with regard to the
type of interlocutor or the child to whom the input was addressed. The adults did, however, make slightly different form-function combinations at the two age points investigated ($\chi^2=14.48$, df=6, $p=0.02$). By inspection, it appeared that this variation is mainly due to a difference in the use of forms for discourse-given-maintenance (Appendix C). At 2;3, the French adults use more proper names (6%) than at 3;3 (1%) and fewer pronouns (74% at 2;3 versus 87% at 3;3), mainly relative and possessive pronouns. The higher number of proper names at 2;3 can for the most part be traced back to Grégoire’s mother. In several passages in the sample at 2;3, she explains facts or asks questions about family members. To this end, she uses proper names as referential expressions. In example (6), she tells Grégoire how old his brothers are.

(6) Discourse-given-maintenance with proper names (input to Grégoire, 2;3, French)

 MOT: C’est Adrien qui a huit ans.
   ‘Adrien is eight years old’

 CHI: Oui.
   ‘Yes’

 MOT: Adrien a huit ans.
   ‘Adrien is eight years old’

 BRO: Ouais c’est ce que je lui ai dit moi.
   ‘Yeah that’s what I have told him’

 CHI: Victor.
   ‘Victor’

 MOT: Victor a cinq ans.
   ‘Victor is five years old’

The differential input over the two age points can thus be clearly related to the data of one of the adults and to discourse factors. The French input will therefore be pooled, just as the Dutch and English input. In all three languages, the use of personal and demonstrative pronouns, nouns and proper names is not radically different as a result of the type of interlocutor, the child to whom the input is addressed or the age of the children.

The analysis in this section has also produced an interesting result in that the form-function combinations in the input do not differ with respect to the children’s age. Guerriero, Oshima-Takane and Kuriyama found a similar result for non-realized arguments (zero pronouns) versus full pronouns and full nouns in English and Japanese input (2006). This implies that the adults do not use more explicit language, that is, more nouns, in talking to younger children than to older children in the age range 2;0-3;3. This is
surprising, since adults in Western societies have been reported to simplify their language both syntactically and semantically in child directed speech (Pine, 1994). Moreover, adults have been reported to fine-tune their input to the child’s language level. Adults’ contributions become less informative when the children’s language level increases (Sokolov, 1993). On the basis of the current data, this appears not to be the case for the use of pronouns, nouns and proper names in reference. It is important to note, however, that the adults might still be more explicit in talking to the children than to other adults of course. Moreover, there are also other ways in which adults can make reference more explicit to children than by using nouns instead of pronouns, for example by means of repetition, as in (7). In the current data, the adults repeat more of the children’s referential expressions when they are 2;3 (6%) compared to 3;3 (3%).

(7) Repetition of the child’s referential expression by the adult (input to Sarah, 2;3, Dutch)

MOT: Wat is dat?
‘What’s that?’

CHI: Is ee(n) gieter.
‘Is a watering can’

MOT: Is een gieter.
‘Is a watering can’

8.3.2 Pronouns for reference in the input

The form-function associations for pronouns as compared to nouns and proper names will be discussed first, followed by the associations between different types of pronouns and pragmatic functions.

8.3.2.1 Form-function associations of pronouns as opposed to nouns and proper names

In all three languages, there are significant form-function associations in the use of pronouns, nouns and proper names (Table 8.1; \( \chi^2 = 77.20, \text{df}=6, p<0.001, C=0.31 \) for Dutch; \( \chi^2 = 159.30, \text{df}=6, p<0.001, C=0.36 \) for English and \( \chi^2 = 184.96, \text{df}=6, p<0.001, C=0.40 \) for French). Figures that contribute to these significant form-function associations are given in bold in Table 8.1 (adjusted standardized residual, §4.7). The form-function associations are largely similar across the three languages.
Table 8.1. Use of pronouns, nouns and proper names for pragmatic functions in the input as a percentage of the total number of forms per function per language (and in raw figures)

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>Dutch</th>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp</td>
<td>Pronoun</td>
<td>32% (45) &lt;</td>
<td>26% (35) &lt;</td>
<td>30% (46) &lt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>66% (94) &gt;</td>
<td>71% (97) &gt;</td>
<td>64% (100) &gt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>2% (3) &lt;</td>
<td>3% (4) &lt;</td>
<td>6% (10) &lt;</td>
</tr>
<tr>
<td>Discourse-new-end</td>
<td>Pronoun</td>
<td>7% (2) &lt;</td>
<td>3% (1) &lt;</td>
<td>2% (1) &lt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>70% (19) &gt;</td>
<td>78% (25) &gt;</td>
<td>73% (33) &gt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>22% (6) &gt;</td>
<td>19% (6) &gt;</td>
<td>24% (11) &gt;</td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>Pronoun</td>
<td>66% (124) &gt;</td>
<td>80% (204) &gt;</td>
<td>81% (218) &gt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>29% (55) &lt;</td>
<td>17% (44) &lt;</td>
<td>16% (43) &lt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>5% (9) &gt;</td>
<td>3% (8) &lt;</td>
<td>3% (8) &lt;</td>
</tr>
<tr>
<td>Discourse-given-shift</td>
<td>Pronoun</td>
<td>48% (165) &gt;</td>
<td>55% (371) &gt;</td>
<td>53% (251) &gt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>42% (147) &gt;</td>
<td>39% (263) &gt;</td>
<td>35% (169) &gt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>10% (35) &gt;</td>
<td>5% (36) &gt;</td>
<td>12% (58) &gt;</td>
</tr>
</tbody>
</table>

Notes. Figures that are major contributors to the significant chi-square value for form-function associations per language are given in bold. The > indicates that the adjusted standardized residual is greater than 2 and that the morphosyntactic form is more strongly associated with this function than other forms and more strongly with this function than with other functions. The < has the opposite interpretation. The frequency of the pragmatic functions is given as a percentage of the total number of references in the input in the three languages taken together.

Nominal forms are strongly associated with both discourse-new-exp and discourse-new-end in all three languages. Pronouns are disassociated with discourse-new, although this form is used to some extent for discourse-new referents that are physically present (exp). There is a strong association between pronouns and discourse-given-maintenance. Proper names are most strongly associated with discourse-new-end and with discourse-given-shift. The adults thus differentiate between new and given in discourse in their use of pronouns. The adults also distinguish between different degrees of givenness on the basis of recency of mentioning, since the morphosyntactic forms studied are used differently for maintenance and shift. Nouns and proper names are more frequently used for referent shift, whereas pronouns are more often used for referent maintenance ($\chi^2=17.36$, df=2, $p<0.001$, C=0.18 for Dutch; $\chi^2=46.81$, df=2, $p<0.001$, C=0.22 for English; $\chi^2=61.42$, df=2, $p<0.001$, C=0.28 for French).

Furthermore, the adults take account of the listener’s perspective, since they use far fewer (inappropriate) pronouns for discourse-new-end than for discourse-
new-exp ($\chi^2 = 23.00, df=2, p<0.001, C=0.34$ for Dutch; $\chi^2 = 17.22, df=2, p<0.001, C=0.31$ for English; $\chi^2 = 22.43, df=2, p<0.001, C=0.32$ for French). There are a few instances in which the adults do use a pronoun to introduce referents that are not physically present. These do not lead to interpretation difficulties for the hearer and can therefore not be classified as inappropriate form use. For instance in (8), the child asks for a screwdriver, referring non-specifically in this context. The mother then introduces a specific, but physically absent, screwdriver to the discourse with a numeral. This, however, does not lead to a problem in interpretation here, since the concept ‘screwdriver’ is a discourse topic already.

(8) Use of pronoun for discourse-new-end (input to Adam, 3;3, English)

CHI: Where screwdriver?
CHI: Huh?
CHI: Where?
MOT: You had one in your pocket.

The data show strong overall similarities between the languages in the use of pronouns, nouns and proper names for pragmatic functions. There are, however, also some small differences. First, the Dutch adults use fewer pronouns and more full nouns for discourse-given-maintenance than the English and the French adults ($\chi^2 = 10.63, df=2, p=0.005, C=0.15; \chi^2 = 13.43, df=2, p=0.001, C=0.17$). The Dutch adults thus use more explicit language when talking to the children than the English and the French adults. The reason for this difference is not clear. The higher percentage of nouns in the Dutch input cannot be due to the sample from one child, since there are no differences between the adults addressing language to each of the three children in the use of forms for pragmatic functions in general and in the use of nouns for maintenance in particular (§8.3.1). It is neither the case that the Dutch adults always use a particular noun (type) in referent maintenance. In contrast, they refer to many different entities and use a range of different nouns for discourse-given-maintenance. The type-token ratio for nouns in maintenance is 0.71 at 2;3 and 0.76 at 3;3. Furthermore, the higher percentage of nouns for discourse-given-maintenance could neither be related to the discourse context. That is, in certain contexts, ambiguity arises if a pronoun is used for maintenance, for example, if there are two possible referents of the same gender (§1.1). These contexts did however not occur in the Dutch input. There is thus no clear explanation for the over-explicitness of the Dutch adults as compared to the English and French adults. Moreover, it is not known whether Dutch adults also use more nouns in
maintenance than English and French adults in adult-adult conversation.

A second difference is that the English adults use slightly fewer proper names for referent shift than the Dutch and the French adults \((\chi^2=10.48, \text{df}=2, \ p=0.005, \ C=0.10; \chi^2=17.12, \text{df}=2, \ p<0.001, \ C=0.12)\). This might be due to differences in discourse topic and family situation. In the English samples, there were no other children present than the main subject, nor do the English subjects have siblings. In the Dutch and French data, the adults often refer to siblings, either present or absent, with a proper name.

### 8.3.2.2 Form-function associations of different types of pronouns

The associations between different types of pronouns and pragmatic functions in the input are not influenced by the child to whom the input is addressed, the age of the children or the type of interlocutor in each of the three languages (loglinear analyses). The data per language are therefore pooled. Table 8.2 shows that there are clear associations and disassociations between the use of different types of pronouns and pragmatic functions \((\chi^2=23.33, \text{df}=4, \ p<0.001, \ C=0.26 \text{ for Dutch}; \chi^2=53.95, \text{df}=4, \ p<0.001, \ C=0.29 \text{ for English}; \chi^2=95.58, \text{df}=2, \ p<0.001, \ C=0.40 \text{ for French})\). Discourse-new-end referents are left out of the analysis here, since it has been shown in Table 8.1 that the adults hardly use pronouns at all for this pragmatic function. The category ‘other’ includes possessive, relative and reflexive pronouns and numerals (§8.2).

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>Dutch</th>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp</td>
<td>Personal</td>
<td>16% (7) &lt;</td>
<td>14% (5) &lt;</td>
<td>17% (8) &lt;</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>69% (31) &gt;</td>
<td>74% (26) &gt;</td>
<td>67% (31) &gt;</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>16% (7)</td>
<td>11% (4)</td>
<td>15% (7)</td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>Personal</td>
<td>40% (49)</td>
<td>66% (134) &lt;</td>
<td>38% (82) &lt;</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>52% (65)</td>
<td>27% (54)</td>
<td>28% (62)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>8% (10)</td>
<td>8% (16)</td>
<td>34% (74) &gt;</td>
</tr>
<tr>
<td>Discourse-given-shift</td>
<td>Personal</td>
<td>54% (89) &gt;</td>
<td>72% (266) &gt;</td>
<td>66% (165) &gt;</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>38% (62) &lt;</td>
<td>20% (74) &lt;</td>
<td>28% (69)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>9% (14)</td>
<td>8% (31)</td>
<td>7% (17) &lt;</td>
</tr>
</tbody>
</table>

Notes. Other = other types of pronouns, i.e. possessives, relatives, reflexives and numerals. Figures that are major contributors to the significant chi-square value for form-function associations per language are given in bold. The > indicates that the adjusted standardized residual is greater than 2 and that the morphosyntactic form is more strongly associated with this function than other forms and more strongly with this function than with other functions. The < has the opposite interpretation.
In all three languages, the adults associate demonstrative pronouns with discourse-new-exp and disassociate personal pronouns with this function. Personal pronouns are more strongly associated with discourse-given-shift in all three languages. There are also some cross-linguistic differences in form-function associations. In Dutch and English, demonstrative pronouns are disassociated with discourse-given-shift. The French adults disassociate ‘other’ pronouns with this pragmatic function. Moreover, personal pronouns are disassociated with referent maintenance in French, because the adults use many ‘other’ pronouns for this function. These are mainly reflexive and relative pronouns. It is plausible that speakers of French make more use of reflexives, because this form serves more functions in French than in Dutch and English (see De Schepper, 2007 for the different functions of reflexive pronouns). The more frequent use of relative pronouns in French is also related to the use of cleft-constructions for topicalization in this language (§2.2.3 and §4.4.4). Relative pronouns are often used in subordinate clauses to refer back to an entity mentioned in the cleft, as in (9). It is not surprising that the differential use of relative and reflexive pronouns between the languages is mainly evident in referent maintenance, since both types of pronouns are often syntactically close to their antecedent.

\[(9) \] **Relative pronoun as part of cleft-construction (input to Léa, 3;3, French)**

\[\text{GRM:}\quad C(e) \text{ est Luc qui a sali l’auto?}\]

That is Luc, who has dirtied the car?

‘Did Luc dirty the car?’

More detailed analyses revealed an additional cross-linguistic difference. The Dutch adults use more demonstrative pronouns for both maintenance and shift than the English adults (\(\chi^2=23.79,\ df=2,\ p<0.001,\ C=0.26;\ \chi^2=19.43,\ df=2,\ p<0.001,\ C=0.19\)). The Dutch adults also use more demonstratives for maintenance than the French, who prefer ‘other’ pronouns (\(\chi^2=33.87,\ df=2,\ p<0.001,\ C=0.30\)). This preference for demonstrative pronouns in Dutch was expected on the basis of the adult grammar (§2.2.2).

### 8.3.2.3 Section summary

The adults in all three languages distinguish between new and given and also between different degrees of givenness in their use of pronouns, nouns and proper names. Moreover, they distinguish between reference to familiar
and non-familiar referents, since they use pronouns only for discourse-new referents that are also physically present. Within the category of pronouns, the adults prefer demonstrative pronouns for discourse-new reference and personal pronouns for discourse-given-shift. There are also some small cross-linguistic differences in pronoun use. The Dutch adults use more demonstrative pronouns for maintenance than the English and French adults. The French adults use more ‘other’ pronouns, mainly relatives and reflexives. If an input-driven model of language acquisition is assumed, the children are expected to make similar form-function associations as the adults. The children’s form-function associations of different types of pronouns, nouns and proper names are investigated in the following sections.

8.4 Child language
This section investigates whether the children show sensitivity to givenness and familiarity in their use of pronouns and how this sensitivity develops. The children between two and three are able to distinguish between new/given in discourse in determiner use (Chapter 7). It is therefore expected that they also differentiate between new and given in their use of pronouns, nouns and proper names. The children studied only start to take account of the listener’s perspective in determiner use (Chapter 7). It is therefore expected that they do not show sensitivity to familiarity in pronoun use either: errors are expected in using pronouns for discourse-new-referents that are not physically present and therefore not perceptually available to the hearer. The children’s use of pronouns for pragmatic functions will be discussed per language in §8.4.1 to §8.4.3. Separate subsections will pay attention to the use of pronouns as opposed to nouns and proper names and to the use of different types of pronouns for pragmatic functions.

8.4.1 Child Dutch: pronouns for reference
The three Dutch children productively use proper names and demonstrative pronouns already at 2;0. Productive use of personal pronouns follows some months later, between 2;3 and 2;6 (§5.4.1). The use of (different types of) pronouns can thus already start at the earliest age points. There are no large differences between the children in the productive use of pronouns, although Matthijs appears to be some three months behind Abel and Sarah, especially at the earlier age points.
8.4.1.1 Form-function associations of pronouns as opposed to nouns and proper names

There are significant differences between the individual children in how they use pronouns, nouns and proper names for pragmatic functions (loglinear analysis, $\chi^2=27.59$, df=12, $p=0.006$). More detailed analyses reveal that this significant effect can be traced back to a few small differences (see Appendix C for the use of forms for functions per child). Firstly, between 2;0 and 2;6, Abel uses more pronouns for maintenance (61%) than Matthijs (39%; $\chi^2=11.08$, df=2, $p=0.004$, C=0.28, age points 2;0-2;6 combined) and Sarah (45%; $\chi^2=8.96$, df=2, $p=0.01$, C=0.23, age points 2;0-2;6 combined). Matthijs and Sarah both use more proper names for this function. In the age range 2;9-3;3, Matthijs and Sarah have caught up with Abel, who thus seems to be slightly earlier in developing sensitivity to using pronouns for maintenance. Secondly, at both 2;0-2;6 and 2;9-3;3, Sarah uses more pronouns (65% and 47%) and fewer nouns or proper names for discourse-new-exp referents than Abel (2;0-2;6, 37% of pronouns, $\chi^2=10.98$, df=1, $p=0.001$, C=0.25; 2;9-3;3, 25% of pronouns, $\chi^2=14.54$, df=2, $p=0.001$, C=0.23) and Matthijs (39% of pronouns, $\chi^2=12.37$, df=2, $p<0.01$, C=0.15, all ages combined due to low cell frequencies). This difference might be due to the fact that Sarah and her mother play with puzzles or memory cards during four of the six recordings. This leads to many pronominal forms as referential expressions to different puzzle pieces or memory cards, as in (10). Sarah's frequent use of pronouns for discourse-new-exp will be taken into account when interpreting the data, which will be pooled here.

(10) Use of (demonstrative) pronouns to refer to different puzzle pieces (Sarah, 2;6, Dutch)

MOT: Hij wiebelt een beetje, die puzzel.
     ‘It’s wobbling a little, that puzzle.’
MOT: (He)t is een beetje rare stukjes puzzel.
     ‘It’s a bit of a strange-pieces-puzzle.’
CHI: Nou deze.
     ‘Now this one’
MOT: Ja, heel goed.
     ‘Yeah, very good’
MOT: Heel goed gezien.
     ‘Well spotted’
CHI: Die kan niet.
     ‘That doesn’t fit’
MOT: Jawel!
     ‘Yes it does’
The form-function associations are also influenced by the children’s age (loglinear analysis, \( \chi^2=66.88, \text{df}=30, p<0.001 \)). This is also clear from Table 8.3. The children make significant form-function combinations at every age point (\( \chi^2, \text{df}=6, p<0.001, C>0.31 \)), but the associations and disassociations (indicated in bold) vary over age.

At 2;0 and 2;3, the Dutch children associate pronouns with discourse-new referents that are physically present and disassociate this form with discourse-given-shift. This is the opposite of the pattern that was found in the input (§8.3.2.1), indicating that the children do not yet differentiate between new and given in pronoun use in an adult-like way at these early ages. In the light of the differences between the children in form-function combinations reported on above, the question arises whether the preference for pronouns in discourse-new-exp is due to Sarah’s data. This appears to be the case. When Sarah’s data are excluded from the analyses, the association between pronouns and discourse-new-exp disappears. In fact, Abel and Matthijs do not appear to use pronouns, nouns and proper names differently at all over functions at 2;0 (no statistics due to low cell frequencies) and 2;3 (\( \chi^2=10.61, \text{df}=6, p=0.10 \)). All in all, it is clear that the Dutch children have not yet learned how to use nouns and pronouns for the new/given distinction at 2;0 and 2;3 in an adult-like way.

The children restrict their use of pronouns to discourse-new-exp from 2;0 onwards. This could be interpreted as if the children are sensitive to familiarity on the basis of physical presence/absence from a very early age. This interpretation is, however, questionable. In determiner use, the Dutch children are not yet sensitive to the listener’s perspective at 3;3 (§7.4.2.1). The apparent sensitivity to the listener’s needs in pronoun use can also be explained differently, for example by the deictic properties of pronouns. That is, the children may be using a pronoun to introduce a referent to discourse only on the basis of whether they themselves can see it or not. This discussion is relevant to the children’s use of pronouns in all three languages and is therefore taken up in §8.6 and Chapter 9.

By 2;6, the Dutch children start to show more adult-like sensitivity to the new/given distinction. At first, they only associate nouns with discourse-new referents that are not perceptually available, but at 2;9 and 3;0 also with discourse-
new referents that are perceptually available. Moreover, at 2;6, the children have started to disassociate nouns with referent maintenance and associate pronouns with this function. The children also show growing sensitivity to different degrees of givenness, since pronouns are more frequently used for referent maintenance and nouns for referent shift at all age points from 2;6 onwards ($\chi^2$, df=2, $p<0.01$, $C>0.20$). Like the adults, the children disassociate proper names with discourse-new-exp and associate this form with discourse-new-end and discourse-given-shift at most age points.
Table 8.3. Use of pronouns, nouns and proper names for pragmatic functions in child Dutch as a percentage of the total number of forms per function per age point (and in raw figures) and corresponding results for the Dutch input

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>2;0</th>
<th>2;3</th>
<th>2;6</th>
<th>2;9</th>
<th>3;0</th>
<th>3;3</th>
<th>Dutch input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp</td>
<td>Pronoun</td>
<td>48%</td>
<td>50%</td>
<td>44%</td>
<td>43%</td>
<td>38%</td>
<td>45%</td>
<td>32% (45) &lt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>50%</td>
<td>47%</td>
<td>55%</td>
<td>54%</td>
<td>59%</td>
<td>52%</td>
<td>66% (94) &gt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>2%</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
<td>2% (3) &lt;</td>
</tr>
<tr>
<td>Discourse-new-end</td>
<td>Pronoun</td>
<td>(0)</td>
<td>6%</td>
<td>5%</td>
<td>5%</td>
<td>10%</td>
<td>14%</td>
<td>7% (2) &lt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>63%</td>
<td>80%</td>
<td>64%</td>
<td>75%</td>
<td>65%</td>
<td>69%</td>
<td>70% (19) &gt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>38%</td>
<td>14%</td>
<td>12%</td>
<td>20%</td>
<td>26%</td>
<td>17%</td>
<td>22% (6) &gt;</td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>Pronoun</td>
<td>35%</td>
<td>36%</td>
<td>64%</td>
<td>70%</td>
<td>74%</td>
<td>76%</td>
<td>66% (124) &gt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>49%</td>
<td>50%</td>
<td>33%</td>
<td>25%</td>
<td>20%</td>
<td>22%</td>
<td>29% (55) &lt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>16%</td>
<td>14%</td>
<td>3%</td>
<td>5%</td>
<td>6%</td>
<td>3%</td>
<td>5% (9)</td>
</tr>
<tr>
<td>Discourse-given-shift</td>
<td>Pronoun</td>
<td>16%</td>
<td>24%</td>
<td>39%</td>
<td>49%</td>
<td>39%</td>
<td>42%</td>
<td>48% (165)</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>56%</td>
<td>58%</td>
<td>51%</td>
<td>41%</td>
<td>41%</td>
<td>46%</td>
<td>42% (147)</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>29%</td>
<td>18%</td>
<td>10%</td>
<td>10%</td>
<td>19%</td>
<td>12%</td>
<td>10% (35) &gt;</td>
</tr>
</tbody>
</table>

Notes. Age points for which form-function associations could be investigated are given in bold. Figures that are major contributors to the significant chi-square values for form-function associations per age point are also given in bold. The > indicates that the adjusted standardized residual is greater than 2 and that the morphosyntactic form is more strongly associated with this function than other forms and more strongly with this function than with other functions. The < has the opposite interpretation. The frequency of the pragmatic functions is given as a percentage of the total number of references over all age points.
The Dutch children thus show adult-like associations of pronouns, nouns and proper names for the new/given distinction from 2;6 onwards. This also becomes evident from detailed comparisons of the frequency of forms for pragmatic functions in the children’s language and the input per age point. At 2;0 and 2;3 the children use more nouns and proper names for maintenance ($\chi^2=19.39$, df$=2$, $p<0.001$, $C=0.27$; $\chi^2=23.17$, df$=2$, $p<0.001$, $C=0.28$) and shift ($\chi^2=38.72$, df$=2$, $p<0.001$, $C=0.29$; $\chi^2=23.45$, df$=2$, $p<0.001$, $C=0.22$) than the adults. At the younger ages, the children are thus overexplicit in their language use. That is, they use a nominal form where this is pragmatically not necessary, since a pronoun could also have been used felicitously, as in (11). From 2;6 onwards, the Dutch children are at an adult level in their use of forms for maintenance and shift. Pronouns are preferred for referent maintenance and nouns are used alongside pronouns for referent shift, as in (12), where Abel uses the pronoun *hij* for referent maintenance to ‘train’ and the nominal form *spoorbomen* to shift reference to ‘level crossing’.

(11) **Overexplicit use of nominal form for discourse-given-maintenance (Matthijs, 2;3, Dutch)**

**MOT:** Waar is de grote kiepauto dan?

‘Where’s the big dump truck?’

**INV:** Buiten.

‘Outside’

**CHI:** Kiepauto zoeken.

‘Search dump truck.’

(12) **Differentiation in use of pronouns and nouns for maintenance and shift (Abel, 3;0, Dutch)**

**SIT:** Abel and the investigator are playing with a toy train.

**CHI:** *Spoorbomen* # een beetje dicht, ja.

‘Level crossing, a bit closed, yeah.’

**CHI:** Anders kan de *trein* niet door.

‘Else the train cannot pass’

**INV:** Nou.

‘Right’

**CHI:** Ja!

‘Yeah’

**CHI:** *Hij* kan zo wel.

Like this it (= the train) can’

**CHI:** De *spoorbomen* dicht, oh.

‘The level crossing closed, oh’

**INV:** Plok.

‘Bang’
For discourse-new referents, the cell frequencies are too low to compare the use of forms in the children and adults’ language per age point. Therefore, data were pooled into two larger age ranges: 2;0-2;6 and 2;9-3;3. The children use significantly more pronouns and fewer nouns than the adults for discourse-new-exp at 2;0-2;6 ($\chi^2=8.89$, df=2, $p<0.05$, $C=0.15$) but not anymore at 2;9-3;3 ($\chi^2=5.32$, df=2, $p=0.07$, $C=0.10$). This latter result can be related to the children’s developing sensitivity to new and given in pronoun use. The children have, however, already reached the adult level of avoiding pronouns for discourse-new-end in the age range 2;0-2;6 ($\chi^2=0.48$, df=2, $p=0.79$, $C=0.07$). As pointed out earlier, it is questionable whether the children take account of the listener in their use of pronouns. This will be discussed in more detail in §8.6 and Chapter 9.

8.4.1.2 Form-function associations of different types of pronouns

There are no differences between the three Dutch children in how they use different types of pronouns for pragmatic functions ($\chi^2=9.03$, df=8, $p=0.34$, see also Appendix D). The pragmatic function of discourse-new-end is excluded from the analysis here, since the children hardly use pronouns for this function (§8.4.1.1). The category of ‘other’ pronouns consists of possessives, numerals, relatives and reflexives (§8.2). The raw figures per age point were too low to apply statistic tests. Therefore, the six age points are pooled into two broader age ranges: 2;0-2;6 and 2;9-3;3 (Table 8.4). The children’s form-function associations do not differ across the two age ranges ($\chi^2=2.18$, df=4, $p=0.70$).

By only looking at the percentages of use, it becomes clear that for all pragmatic functions the Dutch children use mostly demonstrative pronouns. There are, however, also clear associations and disassociations. In the age range 2;0-2;6, the cell frequencies are still too low to carry out chi-square analyses. This is mainly due to the low number of ‘other’ pronouns in this age range. If the category ‘other’ is excluded, it becomes clear that the children associate demonstrative pronouns with discourse-new-exp and personal pronouns with discourse-given-maintenance ($\chi^2=21.48$, df=2, $p<0.001$, $C=0.07$).
A similar pattern is found in the age range 2;9-3;3 ($\chi^2=55.12$, df=4, $p<0.001$, C=0.27). In addition, the children also associate personal pronouns with discourse-given-shift between 2;9-3;3.

In §6.2, it was found that around 30% of the Dutch children’s demonstrative pronouns could not be classified for pragmatic function due to lack of visual information during coding. The results on children’s use of demonstrative pronouns for pragmatic functions must therefore be considered with caution. However, Table 8.4 shows that the children’s use of this form is highly similar to its use in the input. On the basis of the input-based model of language acquisition assumed here, it is plausible that the pattern of use that arises from the child data is a true reflection of their use of this form.

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>2;0-2;6</th>
<th>2;9-3;3</th>
<th>Dutch input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp</td>
<td>Personal</td>
<td>2% (2)</td>
<td>&lt; 6% (9)</td>
<td>&lt; 16% (7) &lt;</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>94% (112)</td>
<td>&gt; 90% (149)</td>
<td>&gt; 69% (31) &gt;</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>4% (5)</td>
<td>4% (7)</td>
<td>16% (7)</td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>Personal</td>
<td>21% (23) &gt;</td>
<td>34% (74) &gt;</td>
<td>40% (49)</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>75% (82) &lt;</td>
<td>60% (129) &lt;</td>
<td>52% (65)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>5% (5)</td>
<td>6% (12)</td>
<td>8% (10)</td>
</tr>
<tr>
<td>Discourse-given-shift</td>
<td>Personal</td>
<td>12% (14)</td>
<td>33% (92) &gt;</td>
<td>54% (89) &gt;</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>86% (99)</td>
<td>65% (198) &lt;</td>
<td>38% (62) &lt;</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2% (2)</td>
<td>2% (6)</td>
<td>9% (14)</td>
</tr>
</tbody>
</table>

Notes. Other = other types of pronouns, i.e. possessives, relatives, reflexives and numerals. Age ranges for which form-function associations could be investigated are given in bold. Figures that are major contributors to the significant chi-square values for form-function associations per age range are also given in bold. The > indicates that the adjusted standardized residual is greater than 2 and that the morphosyntactic form is more strongly associated with this function than other forms and more strongly with this function than with other functions. The < has the opposite interpretation.

There are also a few differences between the child and input language. The adults do not show a clear preference for personal pronouns in referent maintenance. Moreover, the children use significantly more demonstrative pronouns and fewer personal pronouns and ‘other’ pronouns than the adults in discourse-new-exp, discourse-given-maintenance and discourse-given-shift at 2;0-2;6 ($\chi^2$, df=2,
p<0.01, C=0.22) and for discourse-new-exp and discourse-given-shift at 2;9-3;3
(χ², df=2, p<0.01, C=0.25).

8.4.1.3 Section summary
The Dutch children are starting to show sensitivity to new/given and different
degrees of givenness in their use of pronouns, nouns and proper names from 2;6
onwards. At this age, they have also reached the adult level in the frequency of
pronouns and nouns for discourse-given-maintenance and discourse-given-shift.
At 2;0, the children have already reached the adult level in avoiding pronouns for
discourse-new referents that are physically present. Whether this indicates that
they are sensitive to the familiarity of the referent to the hearer will be discussed
further in §8.6 and Chapter 9. From an early age, the children’s use of different
types of pronouns for pragmatic functions is highly similar to what was found
in the Dutch input. Like the adults, they prefer demonstrative pronouns for
discourse-new referents and associate personal pronouns more strongly with
discourse-given referents. However, compared to the adults, the Dutch children
use more demonstrative pronouns and fewer personal pronouns in all pragmatic
functions.

8.4.2 Child English: pronouns for reference
In the earliest samples studied (2;0-2;3), the English-speaking children already
use proper names, demonstrative and personal pronouns productively. The
investigation of pronoun use for pragmatic functions can therefore start around
these age points. The children do not acquire pronouns at the same rate: Nina is
fastest, followed by Peter and then Adam (§5.4.2).

8.4.2.1 Form-function associations of pronouns as opposed to nouns and
proper names
There are significant differences in the use of pronouns, nouns and proper names
for pragmatic functions between age points (loglinear analysis, χ²=45.87, df=18,
p<0.001) and between the three different children (loglinear analysis, χ²=40.77,
df=12, p<0.001). The source of the latter difference needs to be established to
find out if the data can be pooled in the further analyses. Separate loglinear
analyses between dyads of children were carried out (Adam-Nina, Adam-Peter,
Nina-Peter). There are no differences between Adam and Peter in form-function
use (χ²=7.78, df=6, p=0.26). There are, however, differences between Adam and
Nina ($\chi^2=29.44$, df=6, $p<0.001$) and between Peter and Nina ($\chi^2=22.84$, df=6, $p=0.001$). Statistical analysis of these differences per age point is difficult, since the cell frequencies are generally too low. If the data are pooled into the age ranges 2;0-2;6 and 2;9-3;3, variations between the children become clear (see also Appendix C).

Between 2;0-2;6, Adam uses more nouns and proper names for referent maintenance and shift than Nina and Peter, who both use more pronouns instead (Nina: $\chi^2=25.74$, df=2, $p<0.001$, C=0.31; $\chi^2=15.52$, df=2, $p<0.001$, C=0.16; Peter: $\chi^2=32.49$, df=2, $p<0.001$, C=0.35; $\chi^2=38.71$, df=2, $p<0.001$, C=0.31). Adam also uses more nouns in discourse-new-exp than Peter (72% versus 43%, no statistics due to low cell frequencies). These results can be explained by the slower development of pronoun use for Adam compared to Nina and Peter (§5.4.2).

There is also a difference in noun use between Nina and Peter. Nina uses more nouns (and fewer pronouns) than Peter in discourse-new-exp (66% versus 43%) and in discourse-given-shift ($\chi^2=12.32$, df=2, $p=0.002$, C=0.14). Many of Peter’s pronouns occur in one of two syntactic contexts at 2;0 and 2;3, especially for discourse-new reference. These contexts are look that and what’s that?, as in (13). The role of specific syntactic contexts on the acquisition of form-function associations will be further discussed in §9.6.

(13) **Pronouns for discourse-new reference in specific syntactic context (Peter, 2;6, English)**

**CHI:** What’s that.

**INV:** That’s the microphone.

**CHI:** Microphone.

In the age range 2;9-3;3, there are again differences between the children in the use of nouns and pronouns for discourse-new-exp and for discourse-given-shift. The choice for one form or the other appears to be influenced by the discourse topic or the activity engaged in during the conversation. For example, Nina often introduces participants or objects to the play situation in a labelling construction. The referents are introduced with a pronominal form in these constructions, as in (14). In the case of referent shift, the recency of mention between the referent and its previous mention may also be of influence: longer distance leads to more nominal forms.

(14) **Use of pronoun in discourse-new-exp to subsequently label/identify the referent (Nina, 3;0, English)**

**MOT:** Um # that’s a nice family.
**Mot:** Tell me who’s in that family.

**Mot:** Who’s there?

**Mot:** Introduce me.

**Chi:** That’s a daddy and that’s a doggy and that’s a mother and that’s a little girl.

Despite the differences in form-function use described here, it was decided to pool the data, since the general pattern of form-function combinations is highly similar for the three English children (Appendix C). Most importantly, the children make comparable associations and disassociations of forms with functions where certain forms are appropriate and others inappropriate in the adult language, for example for the pragmatic functions of discourse-new-end.

The three English children use pronouns, nouns and proper names differently for pragmatic functions at all age points (Table 8.5; $\chi^2$, df=6, $p<0.001$, C>0.31). From 2;0 onwards, the English children differentiate their use of nouns and pronouns over referents that are new/given in discourse. Already at 2;0, the English children associate nouns with discourse-new-referent and disassociate this form with discourse-given-maintenance. In contrast, pronouns are associated with the latter function. Sensitivity to givenness is thus earlier evident for the English children than for the Dutch, who start to show sensitivity to this distinction at 2;6 (§8.4.1.1). Moreover, the English children have started to differentiate between different degrees of givenness at this early age. From 2;0 onwards, they use significantly more pronouns for discourse-given-maintenance than for discourse-given-shift ($\chi^2$, df=2, $p<0.05$, C>0.14). The use of nouns and proper names for these pragmatic functions shows the opposite pattern.

The children disassociate pronouns with discourse-new-end reference from 2;0 onwards, whereas they do use this form for discourse-new-exp. This pattern of pronoun use was also found for the Dutch children (§8.4.1.1). The explanation that the children take account of listener’s perspective in pronoun use was called into question there. That is, another possible explanation, relating to the deictic properties of pronouns has been briefly suggested. This suggestion will be further discussed in §8.6 and Chapter 9, since it is relevant to the children’s use of pronouns in all languages. For discourse-given-shift, the English children do not show a clear preference for either nouns or pronouns. They do, however, associate proper names more strongly with this function at most age points. This was also found for the Dutch children and in the English input.
Table 8.5. Use of pronouns, nouns and proper names for pragmatic functions in child English as a percentage of the total number of forms per function per age point (and in raw figures) and corresponding results for the English input

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>2;0</th>
<th>2;3</th>
<th>2;6</th>
<th>2;9</th>
<th>3;0</th>
<th>3;3</th>
<th>English input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp (22%)</td>
<td>Pronoun</td>
<td>39% (26)</td>
<td>36% (46)</td>
<td>42% (68)</td>
<td>40% (62)</td>
<td>42% (48)</td>
<td>41% (77)</td>
<td>26% (35)</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>61% (41) &gt;</td>
<td>64% (82) &gt;</td>
<td>57% (91) &gt;</td>
<td>58% (90) &gt;</td>
<td>58% (66) &gt;</td>
<td>59% (112) &gt;</td>
<td>71% (97) &gt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>(0) &lt;</td>
<td>(0) &lt;</td>
<td>1% (2) &lt;</td>
<td>1% (2) &lt;</td>
<td>(0) &lt;</td>
<td>1% (1) &lt;</td>
<td>3% (4)</td>
</tr>
<tr>
<td>Discourse-new-end (9%)</td>
<td>Pronoun</td>
<td>20% (4) &lt;</td>
<td>8% (3) &lt;</td>
<td>8% (5) &lt;</td>
<td>7% (3) &lt;</td>
<td>6% (4) &lt;</td>
<td>8% (6) &lt;</td>
<td>3% (1) &lt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>50% (10)</td>
<td>48% (19)</td>
<td>70% (44) &gt;</td>
<td>72% (55) &gt;</td>
<td>81% (52) &gt;</td>
<td>81% (61) &gt;</td>
<td>78% (25) &gt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>30% (6) &gt;</td>
<td>45% (18) &gt;</td>
<td>22% (14) &gt;</td>
<td>21% (16) &gt;</td>
<td>13% (8) &gt;</td>
<td>11% (8) &gt;</td>
<td>19% (6) &gt;</td>
</tr>
<tr>
<td>Discourse-given-maintenance (22%)</td>
<td>Pronoun</td>
<td>64% (48) &gt;</td>
<td>48% (77) &gt;</td>
<td>59% (81) &gt;</td>
<td>74% (109) &gt;</td>
<td>83% (86) &gt;</td>
<td>85% (134) &gt;</td>
<td>80% (204) &gt;</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>29% (2) &lt;</td>
<td>43% (70) &lt;</td>
<td>35% (48) &lt;</td>
<td>22% (33) &lt;</td>
<td>16% (17) &lt;</td>
<td>13% (21) &lt;</td>
<td>17% (44) &lt;</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>7% (5)</td>
<td>9% (15)</td>
<td>7% (9)</td>
<td>4% (6) &lt;</td>
<td>1% (1)</td>
<td>2% (3)</td>
<td>3% (8)</td>
</tr>
<tr>
<td>Discourse-given-shift (47%)</td>
<td>Pronoun</td>
<td>41% (56)</td>
<td>28% (89) &lt;</td>
<td>45% (138)</td>
<td>44% (100)</td>
<td>48% (133)</td>
<td>58% (258)</td>
<td>55% (371)</td>
</tr>
<tr>
<td></td>
<td>Noun</td>
<td>41% (56)</td>
<td>57% (180)</td>
<td>42% (127) &lt;</td>
<td>40% (91)</td>
<td>46% (129)</td>
<td>36% (160) &lt;</td>
<td>30% (263)</td>
</tr>
<tr>
<td></td>
<td>ProperN</td>
<td>10% (2.6) &gt;</td>
<td>14% (45)</td>
<td>13% (41) &gt;</td>
<td>15% (34) &gt;</td>
<td>6% (18)</td>
<td>7% (31) &gt;</td>
<td>5% (36)</td>
</tr>
</tbody>
</table>

Notes. Age points for which form-function associations could be investigated are given in bold. Figures that are major contributors to the significant chi-square values form-function associations per age point are also given in bold. The > indicates that the adjusted standardized residual is greater than 2 and that the morphosyntactic form is more strongly associated with this function than other forms and more strongly with this function than with other functions. The < has the opposite interpretation. The frequency of the pragmatic functions is given as a percentage of the total number of references over all age points.
The English children thus show adult-like patterns of associations and disassociations in their use of pronouns for the new/given distinction from 2;0 onwards. In terms of frequency of use however, they do not reach the adult level until 2;9, just as the Dutch children. The English children use fewer pronouns and more nouns than the adults in discourse-given-maintenance at 2;0, 2;3 and 2;6 ($\chi^2=8.02, df=2, p<0.05, C=0.15; \chi^2=46.68, df=2, p<0.001, C=0.32; \chi^2=19.75, df=2, p<0.001, C=0.22$). When the children are younger, they are thus quite frequently over-explicit in reference. That is, they use a nominal form where a pronoun could have been used also, as in (15). From 2;0 until 2;9, the English children also use fewer pronouns and more nouns or proper names for discourse-given-shift than the adults ($\chi^2=31.84, df=2, p<0.05, C=0.20; \chi^2=69.76, df=2, p<0.001, C=0.26; \chi^2=21.67, df=2, p<0.001, C=0.15; \chi^2=24.31, df=2, p<0.001, C=0.16$).

(15) Use of nominal form for discourse-given-maintenance (Peter, 2;6, English)

**mot:** Remember when you took the ride on the fire engine?

**mot:** You saw a tiny little puppy?

**chi:** I see a tiny little puppy on the fire engine, and I go on a fire engine, and the fire engine is noisy and I go at the firehouse [...].

From 2;0 onwards, the children show adult-like associations and disassociations in their use of pronouns for discourse-new referents that are either present or absent. In terms of frequency of use, they have reached the input level in their use of pronouns as opposed to nouns for discourse-new-end in both age ranges (2;0-2;6: Fisher’s exact, $p=0.29$; 2;9-3;3: Fisher’s exact, $p=0.70$, data pooled due to low cell frequencies). Compared to the adults, the children do, however, use more pronouns and fewer nouns for discourse-new-exp in both age ranges ($\chi^2=7.09, df=1, p<0.01, C=0.12; \chi^2=9.25, df=1, p<0.01, C=0.13$). This latter result can also be related to the children’s developing sensitivity to new and given in pronoun use.

8.4.2.2 Form-function associations of different types of pronouns

The English children also demonstrate strong associations and disassociations in the use of different types of pronouns for pragmatic functions (Table 8.6; $\chi^2=84.62, df=4, p<0.001, C=0.34; \chi^2=232.18, df=4, p<0.001, C=0.43$, based on two age ranges because of low cell frequencies).

3 Proper names are excluded from the analyses on the comparison of the children and adults’ use of forms for discourse-new referents. The cell frequencies were still too low, even if the age points were combined in two larger groups.
There are no differences in form-function use between the three individual children in this respect (loglinear analysis, $\chi^2=9.89$, df=8, $p=0.27$). The children associate demonstrative pronouns with discourse-new-exp and disassociate personal pronouns with this pragmatic function. In contrast, personal pronouns are strongly associated with discourse-given reference, both in maintenance and shift. This was also found for the Dutch children. In the English child data, there is a difference across the two age ranges in form-function associations (loglinear analysis, $\chi^2=13.55$, df=4, $p=0.009$). This is mainly due to a decrease in the use of demonstrative pronouns for maintenance and shift. The English children have started to use more personal and ‘other’ pronouns instead in the age range 2;9-3;3. These are for the most part possessive pronouns, which also have become productive and more frequently used at the later ages (§5.4.2).

### Table 8.6. Use of different types of pronouns for pragmatic functions in child English as a percentage of the total number of forms per function per age point (and in raw figures) and corresponding results for the English input

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>2;0-2;6</th>
<th>2;9-3;3</th>
<th>English input</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Personal</td>
<td>13% (18)</td>
<td>14% (26)</td>
<td>14% (5)</td>
</tr>
<tr>
<td>Discourse-new-exp</td>
<td>Demonstrative</td>
<td>83% (116)</td>
<td>83% (155)</td>
<td>74% (26)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>4% (6)</td>
<td>3% (6)</td>
<td>11% (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>Personal</td>
<td>53% (110)</td>
<td>64% (210)</td>
<td>66% (134)</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>44% (91)</td>
<td>23% (77)</td>
<td>27% (54)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2% (5)</td>
<td>13% (42)</td>
<td>8% (16)</td>
</tr>
<tr>
<td>Discourse-given-shift</td>
<td>Personal</td>
<td>57% (162)</td>
<td>63% (309)</td>
<td>72% (266)</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>38% (108)</td>
<td>24% (120)</td>
<td>20% (74)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>5% (13)</td>
<td>13% (62)</td>
<td>8% (31)</td>
</tr>
</tbody>
</table>

Notes. Other = other types of pronouns, i.e. possessives, relatives, reflexives and numerals. Age ranges for which form-function associations could be investigated are given in bold. Figures that are major contributors to the significant chi-square values of form-function associations per age range are also given in bold. The $>$ indicates that the adjusted standardized residual is greater than 2 and that the morphosyntactic form is more strongly associated with this function than other forms and more strongly with this function than with other functions. The $<$ has the opposite interpretation.

A large part of the demonstrative pronouns in the English children’s data could not be analyzed for pragmatic function (25%, see §6.3). The results must therefore be taken with caution. However, the children’s associations between demonstrative pronouns and pragmatic functions are highly
similar to what was found in the English input, where the majority of the demonstratives could be analyzed for pragmatic function (85%). It is therefore plausible that the children’s use of this form in the data reflects true form-function associations, despite the high percentage of ambiguous references.

There are only some minor differences between the children and adults in the use of different types of pronouns for pragmatic functions. In contrast to the adults, the children show clear associations or disassociations for discourse-given-maintenance. The children also use significantly more demonstrative pronouns than the adults for maintenance and shift in the early age range \( \chi^2=17.56, df=2, p<0.001, C=0.20; \chi^2=27.65, df=2, p<0.001, C=0.20 \).

### 8.4.2.3 Section summary

From 2;0 onwards, the English children show sensitivity to the new/given distinction and to different degrees of givenness in their use of pronouns as opposed to nouns and proper names. It takes the children until 2;9, however, to reach the adult level in terms of frequency of pronoun use for discourse-given reference (both maintenance and shift). The English children appear to take account of the perspective of the listener in pronoun use from an early age, since they hardly use this form for discourse-new-end. Whether this really indicates sensitivity to the pragmatic factor of familiarity will discussed further in §8.6 and Chapter 9, since this is relevant to the children’s data in all three languages.

The English children also differentiate their use of different types of pronouns over pragmatic functions. Like the English adults, they associate demonstrative pronouns with discourse-new reference. Personal pronouns are associated with discourse-given reference, both maintenance and shift. The children do however use more demonstrative pronouns than the adults, especially in discourse-given-maintenance and discourse-given-shift.

Compared to the Dutch children, the English are somewhat earlier in showing sensitivity to (different degrees of) givenness in pronoun use (2;0 versus 2;6, §8.4.1.1). However, in both languages the children reach the adult level in using pronouns for maintenance around the same age (2;6-2;9). There are no differences between the Dutch and English children in the use of pronouns over discourse-new-exp and discourse-new-end.
8.4.3 Child French: pronouns for reference

The French children productively use demonstrative and personal pronouns already at the earliest age points (§5.4.3). The investigation of pronoun use can therefore start around 2;0. In the productive use of pronouns, Philippe is somewhat ahead of Anne and Grégoire. Not surprisingly, Léa already uses most pronominal forms at 2;9, the earliest age at which data are analyzed for this child.

8.4.3.1 Form-function associations of pronouns as opposed to nouns and proper names

There were no differences in how pronouns, nouns and proper names were used for pragmatic functions between Anne, Grégoire and Philippe (loglinear analysis, $\chi^2=8.59$, df=12, $p=0.74$). There were, however, differences in the form-function use of the children whose language was investigated from 2;9 through 3;3 (Anne, Philippe and Léa, loglinear analysis, $\chi^2=26.57$, df=12, $p=0.009$). Philippe’s form-function combinations are different from those of Anne ($\chi^2=17.96$, df=6, $p=0.006$) and also from those of Léa ($\chi^2=13.78$, df=6, $p=0.032$). There is no difference in form-function use between Anne and Léa. The data points from 2;9 to 3;3 were pooled to determine for which functions Philippe uses pronouns, nouns and proper names differently from Léa and Anne (see also Appendix C).
Table 8.7. Use of pronouns, nouns and proper names for pragmatic functions in child French as a percentage of the total number of forms per function per age point (and in raw figures) and corresponding results for the French input

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>2;0</th>
<th>2;3</th>
<th>2;6</th>
<th>2;9</th>
<th>3;0</th>
<th>3;3</th>
<th>French input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp (20%)</td>
<td>Pronoun</td>
<td>35% (8)</td>
<td>27% (30)</td>
<td>37% (50)</td>
<td>34% (48)</td>
<td>&lt; 33% (50)</td>
<td>&lt; 32% (46)</td>
<td>&lt; 30% (46)</td>
</tr>
<tr>
<td>Discourse-new-exp (20%)</td>
<td>Noun</td>
<td>65% (15)</td>
<td>73% (82)</td>
<td>63% (84)</td>
<td>65% (91)</td>
<td>66% (102)</td>
<td>65% (93)</td>
<td>&lt; 64% (100)</td>
</tr>
<tr>
<td>Discourse-new-exp (20%)</td>
<td>ProperN</td>
<td>(0)</td>
<td>&lt; (0)</td>
<td>&lt; (0)</td>
<td>1% (2)</td>
<td>&lt; 1% (2)</td>
<td>&lt; 3% (4)</td>
<td>6% (10)</td>
</tr>
<tr>
<td>Discourse-new-end (8%)</td>
<td>Pronoun</td>
<td>8% (1)</td>
<td>2% (1)</td>
<td>&lt; 8% (6)</td>
<td>2% (1)</td>
<td>&lt; 7% (4)</td>
<td>&lt; 11% (5)</td>
<td>&lt; 2% (1)</td>
</tr>
<tr>
<td>Discourse-new-end (8%)</td>
<td>Noun</td>
<td>75% (9)</td>
<td>88% (43)</td>
<td>78% (60)</td>
<td>76% (12)</td>
<td>&gt; 73% (44)</td>
<td>&gt; 67% (30)</td>
<td>&gt; 73% (33)</td>
</tr>
<tr>
<td>Discourse-new-end (8%)</td>
<td>ProperN</td>
<td>17% (2)</td>
<td>10% (5)</td>
<td>14% (11)</td>
<td>21% (9)</td>
<td>&gt; 20% (12)</td>
<td>&gt; 2.2% (10)</td>
<td>&gt; 2.4% (11)</td>
</tr>
<tr>
<td>Discourse-given-maintenance (29%)</td>
<td>Pronoun</td>
<td>30% (15)</td>
<td>54% (57)</td>
<td>63% (144)</td>
<td>86% (171)</td>
<td>&gt; 85% (175)</td>
<td>&gt; 85% (210)</td>
<td>&gt; 81% (218)</td>
</tr>
<tr>
<td>Discourse-given-maintenance (29%)</td>
<td>Noun</td>
<td>60% (30)</td>
<td>41% (43)</td>
<td>34% (78)</td>
<td>8% (15)</td>
<td>&lt; 11% (23)</td>
<td>&lt; 13% (31)</td>
<td>&lt; 16% (43)</td>
</tr>
<tr>
<td>Discourse-given-maintenance (29%)</td>
<td>ProperN</td>
<td>10% (5)</td>
<td>5% (5)</td>
<td>4% (8)</td>
<td>&lt; 7% (13)</td>
<td>&lt; 3% (7)</td>
<td>&lt; 2% (5)</td>
<td>&lt; 3% (8)</td>
</tr>
<tr>
<td>Discourse-given-shift (43%)</td>
<td>Pronoun</td>
<td>13% (13)</td>
<td>20% (30)</td>
<td>&lt; 40% (124)</td>
<td>51% (149)</td>
<td>&gt; 61% (182)</td>
<td>&gt; 62% (244)</td>
<td>&gt; 53% (251)</td>
</tr>
<tr>
<td>Discourse-given-shift (43%)</td>
<td>Noun</td>
<td>38% (38)</td>
<td>60% (91)</td>
<td>48% (148)</td>
<td>31% (90)</td>
<td>27% (80)</td>
<td>&lt; 28% (109)</td>
<td>&lt; 35% (169)</td>
</tr>
<tr>
<td>Discourse-given-shift (43%)</td>
<td>ProperN</td>
<td>49% (49)</td>
<td>20% (31)</td>
<td>&gt; 13% (39)</td>
<td>&gt; 18% (53)</td>
<td>&gt; 12% (35)</td>
<td>&gt; 11% (42)</td>
<td>&gt; 12% (58)</td>
</tr>
</tbody>
</table>

Notes. Age points for which form-function associations could be investigated are given in bold. Figures that are major contributors to the significant chi-square values form-function associations per age point are also given in bold. The > indicates that the adjusted standardized residual is greater than 2 and that the morphosyntactic form is more strongly associated with this function than other forms and more strongly with this function than with other functions. The < has the opposite interpretation. The frequency of the pragmatic functions is given as a percentage of the total number of references over all age points.
Philippe uses more nouns and fewer proper names than Léa for both discourse-new-exp (74% versus 64% of nouns, no statistics due to low cell-frequencies) and discourse-given-shift (38% versus 20%, \( \chi^2 = 24.30, \text{df}=2, p<0.001 \)). Most of Léa’s proper names refer to her parents or grandparents who are either present during the recording or are an important topic of conversation. Compared to Anne, Philippe uses more nouns and fewer pronouns for both discourse-new-exp (74% versus 51% of nouns, no statistics due to low cell-frequencies) and discourse-given-shift (38% versus 26%, \( \chi^2 = 13.30, \text{df}=2, p=0.001, C=0.13 \)). Pronouns, nouns and proper names are all appropriate for these functions (§2.4.1). The differences might therefore be due to the discourse topics in the samples analyzed. Moreover, the overall pattern of form-function combinations in terms of appropriate and inappropriate forms is largely similar for these children (Appendix C). Therefore, the data are pooled to investigate the use of pronouns, nouns and proper names for pragmatic functions.

At 2;0, the cell frequencies are too low to apply the chi-square test, but from 2;3 onwards, clear form-function associations and disassociations can be distinguished at every age point (\( \chi^2, \text{df}=6, p<0.001, C>0.35 \)). The French children show sensitivity to the new/given distinction from 2;3 onwards. They associate nouns with discourse-new reference and disassociate this form with discourse-given-maintenance (Table 8.7). In contrast, pronouns are strongly associated with the latter function at all age points, as in (16).

(16) Pronoun for discourse-given-maintenance (Léa, 2;9, French)

MOT: Et Luc, où est il en ce moment?
‘And Luc, where is he now?’

CHI: Euh il fait dodo.
‘Uh, he is having a nap’

The French children also distinguish different degrees of givenness from 2;3 onwards. That is, at all age points, they prefer pronouns for discourse-given-maintenance and use nouns and proper names more frequently for discourse-given-shift, as in (17) (\( \chi^2, \text{df}=2, p<0.001, C>0.24 \)). With their early sensitivity to the new/given distinction, the French children behave similarly to the English children (§8.4.2.1). The Dutch children become sensitive to this pragmatic factor somewhat later, at 2;6 (§8.4.1.1).
Just as the Dutch and English children, the French also appear to be sensitive to the pragmatic factor of familiarity in pronoun use. From 2;3 onwards, pronouns are strongly disassociated with discourse-new-end and nouns are associated with this function. Moreover, the children significantly differentiate their use of pronouns according to whether discourse-new referents are physically present or absent at both 2;0-2;6 and at 2;9-3;3 ($\chi^2=65.54$, df=2, $p<0.001$, C=0.37; $\chi^2=90.44$, df=2, $p<0.001$, C=0.37, age points combined due to low cell frequencies). That is, pronouns are quite frequently used for discourse-new-exp referents, but if the discourse-new referent is absent, nouns or proper names are highly preferred. As for the Dutch and English children, it is questionable whether this pattern of use really indicates that the children are sensitive to the familiarity of the referent to the hearer in pronoun use (see §8.6 for further discussion).

The early, adult-like associations for new/given in discourse do not imply that the French children have reached the input level in terms of frequency of forms for discourse-given reference. Compared to the adults, the French children use more nouns or proper names and fewer pronouns for discourse-given-maintenance at 2;0, 2;3 and 2;6 ($\chi^2=55.84$, df=2, $p<0.001$, C=0.39; $\chi^2=28.52$, df=2, $p<0.001$, C=0.27; $\chi^2=22.34$, df=2, $p<0.001$, C=0.21). In discourse-given-shift the children also use more nouns and fewer pronouns than the adults ($\chi^2=89.14$, df=2, $p<0.001$, C=0.37; $\chi^2=50.14$, df=2, $p<0.001$, C=0.27; $\chi^2=13.38$, df=2, $p=0.001$, C=0.13). The sensitivity to new/given in discourse therefore seems to be developing up to 2;9 for these French children, just like for the Dutch and English. Moreover, only from 2;9 upwards do the French children clearly disassociate pronouns with discourse-new-exp referents as in the input (§8.3.2.1). There are no differences between the children and the adults in the frequency of use of pronouns, nouns and proper names for discourse-new-end already in the early age range 2;0-2;6 ($\chi^2=3.93$, df=2, $p=0.14$). As was the case for the Dutch and English children, it is questionable to what extent the French children really
take account of the listener's perspective here or merely use pronouns deictically. This point is taken up in §8.6 and Chapter 9.

8.4.3.2 Form-function associations of different types of pronouns

There are differences in the French children's use of different types of pronouns for pragmatic functions in both the early and later age range (loglinear analyses, \(\chi^2=21.15, \text{df}=8, p=0.007; \chi^2=17.11, \text{df}=8, p=0.03\)). Between 2;0-2;6, there are differences between Philippe and Anne (\(\chi^2=10.50, \text{df}=4, p=0.03\)) and Philippe and Grégoire (\(\chi^2=10.67, \text{df}=4, p=0.03\)), but not between Anne and Grégoire (\(\chi^2=6.87, \text{df}=4, p=0.14\)). Philippe uses more 'other' pronouns for discourse-new-exp than Anne and Grégoire (11% for Philippe versus 0% for the other children, no statistics due to low cell frequencies, see Appendix D). In addition, Philippe uses more personal pronouns than Grégoire, who only uses demonstratives for discourse-new reference in this age range. Philippe also uses pronouns differently from the other children in the age range 2;9-3;3. For discourse-new-exp, Philippe uses again more 'other' pronouns (13%) than Anne (2%) and Léa (0%). In discourse-given-shift, Philippe uses fewer demonstrative pronouns (14%) than Anne (22%) and Léa (26%). He uses more personal and 'other' pronouns instead. There are no differences between Anne and Léa in the use of different types of pronouns at 2;9-3;3. The differences between the French children in the use of different types of pronouns can thus for a large part be traced back to Philippe's use of 'other' pronouns for discourse-new-exp. Closer inspection of the category 'other' in Philippe's data reveals that he uses mostly numerals and some possessive pronouns for discourse-new reference in both age ranges. The use of these 'other' pronouns is correct in the discourse context (see 18) and does not mean that Philippe's form-function use is different from those of the other children. Rather, the overall pattern of form-function associations and disassociations as it will be described below, is largely similar for all four children (Appendix D). Therefore, the data are pooled in the further analyses.

(18) Numeral (category 'other') for discourse-new (Philippe, 3;0, French)

**CHI:** Regarde la belle petite boîte.

'Look at this nice little box'

**INV:** Oui.

'Yeah'

**CHI:** Maman aussi en a une.

'Mummy also has one'
CHI: Celle là à maman et celle c’est la mienne.
‘That one (is) Mummy’s and this one is mine’

The French children use personal pronouns, demonstrative pronouns and ‘other’ pronouns differently for pragmatic functions in both age ranges (Table 8.8, \( \chi^2=110.10, df=4, p<0.001, C=0.44; \chi^2=321.40, df=4, p<0.001, C=0.45 \)).

Table 8.8. Use of different types of pronouns for pragmatic functions in child French as a percentage of the total number of forms per function per age point (and in raw figures) and corresponding results for the French input

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>2;0-2;6</th>
<th>2;9-3;3</th>
<th>French input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp</td>
<td>Personal</td>
<td>13% (11) &lt;</td>
<td>13% (18) &lt;</td>
<td>17% (8) &lt;</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>83% (73) &gt;</td>
<td>82% (118) &gt;</td>
<td>67% (31) &gt;</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>5% (4) &lt;</td>
<td>6% (8) &lt;</td>
<td>15% (7)</td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>Personal</td>
<td>54% (117) &gt;</td>
<td>51% (282) &lt;</td>
<td>38% (82) &lt;</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>22% (48) &lt;</td>
<td>22% (122) &lt;</td>
<td>28% (62)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>24% (51) &gt;</td>
<td>27% (152) &gt;</td>
<td>34% (74) &gt;</td>
</tr>
<tr>
<td>Discourse-given-shift</td>
<td>Personal</td>
<td>54% (90) &gt;</td>
<td>72% (411) &gt;</td>
<td>66% (165) &gt;</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>30% (65) &lt;</td>
<td>21% (119) &lt;</td>
<td>28% (69)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>7% (12) &lt;</td>
<td>8% (45) &lt;</td>
<td>7% (17)</td>
</tr>
</tbody>
</table>

Notes. Other = other types of pronouns, i.e. possessives, relatives, reflexives and numerals. Age ranges for which form-function associations could be investigated are given in bold. Figures that are major contributors to the significant chi-square values of form-function associations per age range are also given in bold. The > indicates that the adjusted standardized residual is greater than 2 and that the morphosyntactic form is more strongly associated with this function than other forms and more strongly with this function than with other functions. The < has the opposite interpretation.

At 2;0-2;6, the French children associate demonstrative pronouns with discourse-new-exp and disassociate these forms with discourse-given-maintenance. Personal pronouns show the reverse pattern. In addition, personal pronouns are associated with discourse-given-shift. This pattern is highly similar to what was found for the Dutch and English children. In French, however, there are also associations and disassociations for pronouns from the category ‘other’. These are associated with discourse-given-maintenance and disassociated with discourse-given-shift and discourse-new reference. The ‘other’ pronouns are mainly possessives and reflexives in the early age range. The form-function associations differ significantly between the two age ranges (\( \chi^2=13.12, df=4, p<0.05 \)). Table 8.8 shows this difference clearly in that there is a disassociation between personal pronouns and discourse-given-maintenance at 2;9-3;3 and an association for this
form-function combination at 2;0-2;6. Furthermore, demonstrative pronouns are disassociated with discourse-given-shift at 2;9-3;3 and not at 2;0-2;6.

Only a small portion of the demonstrative pronouns could not be analyzed for pragmatic function in the French child data (15%, §6.4). In contrast to the Dutch and English data (§8.4.1.2 and §8.4.2.2), the French children’s associations and disassociations between this form and pragmatic functions need not to be considered with extra caution and can be interpreted as a true representation of their form-function use and sensitivity to pragmatic factors.

The pattern of associations and disassociations of different types of pronouns is largely similar in the French children’s language and in the input. There are, however, also some small differences. At both age ranges, the children disassociate ‘other’ pronouns with discourse-new reference, whereas the adults do not. In terms of frequencies, the children use fewer personal pronouns and more demonstrative pronouns for discourse-given-shift than the adults at 2;0-2;6 ($\chi^2=6.42$, df=2, $p=0.04$, C=0.12). The children also use fewer ‘other’ pronouns and more personal pronouns for discourse-given-maintenance than the adults in both age ranges ($\chi^2=12.16$, df=2, $p=0.002$, C=0.17; $\chi^2=10.84$, df=2, $p=0.004$, C=0.12). More specifically, the adults use more relative pronouns than the children. This is not surprising, since the children only start to use relative pronouns productively at the later age points (§5.4.3).

### 8.4.3.3 Section summary

The French children show sensitivity to the new/given distinction and to different degrees of givenness from 2;3 onwards. Their sensitivity to givenness seems, however, to be developing to the adult level until 2;9. Before this age, the children use more nouns for discourse-given-maintenance and discourse-given-shift than the adults. The French children avoid using pronouns for discourse-new-end already at 2;0-2;3. Whether this really indicates sensitivity to the perspective of the listener will be discussed in §8.6 and Chapter 9. The French children’s use of different types of pronouns also resembles the input pattern. Demonstrative pronouns are associated with discourse-new-exp, whereas personal pronouns are more frequently used for discourse-given-maintenance and discourse-given-shift.

The French children show sensitivity to the new/given distinction at about the same age as the English children and thus a little earlier than the Dutch children. The adult level of frequency of use of pronouns for maintenance is, however, reached around the same age in all three languages. In addition, the
children prefer demonstrative pronouns for discourse-new-exp reference in all three languages. However, the French children use more ‘other’ pronouns than the children acquiring Dutch and English, especially in discourse-given-maintenance. This difference will be further discussed in the next section.

8.5 Influence of the input on the acquisition of pronouns in reference

The interaction between pragmatic factors and pronoun use in the acquisition of reference will be further investigated by examining the role of the input. Firstly, the occurrence of input-based, language-specific form-function combinations in early child language will be established. Secondly, the influence of frequency and consistency of form-function combinations in the input will be examined. Early influence of the input is consistent with the input-based account of language acquisition assumed in this thesis (§1.2.2 and §3.5).

8.5.1 Language-specific patterns of pronoun use in reference

There are a few language-specific patterns in the use of different types of pronouns for pragmatic functions in the input (§8.3.2.2). The Dutch adults use more demonstrative pronouns for discourse-given reference than the English and French adults. In French, more ‘other’ pronouns are used for discourse-given-maintenance than in Dutch and English. The English adults use more personal pronouns for discourse-given-maintenance than both the Dutch and the French adults. This section investigates whether the cross-linguistic differences observed in the input are also evident in the children’s language. To this end, the frequency of personal, demonstrative and ‘other’ pronouns for different pragmatic functions in the language of the children acquiring Dutch, English or French is compared for the age ranges 2;0-2;6 and 2;9-3;3.

At 2;0-2;6, the Dutch children use more demonstrative pronouns for discourse-new-exp than both the English and the French children, who use more personal pronouns instead (Table 8.9, \( \chi^2 = 11.33, \text{df} = 2, p = 0.003, C = 0.21; \chi^2 = 10.15, \text{df} = 2, p = 0.006, C = 0.22 \)). This was not found in the input. There are several explanations for this unexpected pattern. On the one hand, personal pronouns become productive a little later in Dutch than in English and French (2;3-2;6 versus 2;0-2;3, §5.4.4). The Dutch children might therefore rely more on demonstrative pronouns at the earliest age points. On the other hand, it may be an input-based pattern. The Dutch adults use more demonstrative pronouns than the English and French adults overall and the Dutch children may be influenced by the high frequency of this form.
Table 8.9. Comparison of the frequency of different types of pronouns for pragmatic functions in child Dutch, English and French for the age range 2;0-2;6 as a percentage of the total number of forms per function per language

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>Dutch</th>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp</td>
<td>Personal</td>
<td>2%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>94%</td>
<td>83%</td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>4%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>Personal</td>
<td>21%</td>
<td>53%</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>75%</td>
<td>44%</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>5%</td>
<td>2%</td>
<td>24%</td>
</tr>
<tr>
<td>Discourse-given-shift</td>
<td>Personal</td>
<td>12%</td>
<td>57%</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>86%</td>
<td>38%</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2%</td>
<td>5%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Notes. Other = other types of pronouns, i.e. possessives, relatives, reflexives and numerals.

Other differences can be more clearly related to language-specific input patterns. At 2;0-2;6, the Dutch children use more demonstrative determiners for discourse-given-maintenance and discourse-given-shift than the children acquiring English or French. That is, the English children use significantly more personal pronouns than the Dutch for these functions (maintenance: $\chi^2=31.08$, df=2, $p<0.001$, C=0.30; shift: $\chi^2=75.44$, df=2, $p<0.001$, C=0.40). The French children use more personal and ‘other’ pronouns, mainly possessives and reflexives, than the Dutch children (maintenance: $\chi^2=84.23$, df=2, $p<0.001$, C=0.45; shift: $\chi^2=62.26$, df=2, $p<0.001$, C=0.43) The French children also use more ‘other’ pronouns for maintenance than the English in the age range 2;0-2;6 ($\chi^2=51.10$, df=2, $p<0.001$, C=0.33).

These cross-linguistic differences are also evident in the age range 2;9-3;3 (Table 8.10). The Dutch children again use more demonstrative pronouns than the English for discourse-new-exp, discourse-given-maintenance and discourse-given-shift ($\chi^2=7.11$, df=2, $p=0.029$, C=0.14; $\chi^2=74.29$, df=2, $p<0.001$, C=0.35; $\chi^2=124.34$, df=2, $p<0.001$, C=0.37) ($\chi^2=7.11$, df=2, $p=0.029$, C=0.14). Compared to the French children, the Dutch use more demonstrative pronouns for discourse-given-maintenance and discourse-given-shift ($\chi^2=112.41$, df=2, $p<0.001$, C=0.36; $\chi^2=158.35$, df=2, $p<0.001$, C=0.40). The French children use more personal pronouns and ‘other’ pronouns, mainly reflexives and relatives instead. Finally, the French children again use more ‘other’ pronouns for maintenance than the English children ($\chi^2=26.61$, df=2, $p<0.001$, C=0.17).
Table 8.10. Comparison of the frequency of different types of pronouns for pragmatic functions in child Dutch, English and French for the age range 2;9-3;3 as a percentage of the total number of forms per function per language

<table>
<thead>
<tr>
<th>Functions</th>
<th>Forms</th>
<th>Dutch %</th>
<th>English %</th>
<th>French %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-new-exp</td>
<td>Personal</td>
<td>6%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>90%</td>
<td>83%</td>
<td>82%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>4%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>Personal</td>
<td>34%</td>
<td>64%</td>
<td>51%</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>60%</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>6%</td>
<td>13%</td>
<td>27%</td>
</tr>
<tr>
<td>Discourse-given-shift</td>
<td>Personal</td>
<td>33%</td>
<td>65%</td>
<td>72%</td>
</tr>
<tr>
<td></td>
<td>Demonstrative</td>
<td>65%</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2%</td>
<td>13%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Notes. Other = other types of pronouns, i.e. possessives, relatives, reflexives and numerals.

In sum, the children are sensitive to the input in the acquisition of reference with different types of pronouns, since language-specific form-function combinations from the input are also evident in the children’s language from the early age points onwards.

8.5.2 Influence of cue frequency and cue consistency on the acquisition of appropriate pronoun use in reference

Various researchers have suggested that both cue frequency and cue consistency in the input play a role in language acquisition (Bates & MacWhinney, 1989; Tomasello, 2003). For the acquisition of the pragmatics of pronoun use in reference, this would imply that the more frequent and consistent the use of pronouns for a particular pragmatic function is in the input, the earlier it is acquired. This claim is investigated by examining the children’s use of pronouns, nouns and proper names for the most and least frequent pragmatic function in the input: discourse-given reference and discourse-new-end.

Table 8.11. Overview of the frequency of pragmatic functions relevant to pronoun use in the input per language as a percentage of all pragmatic functions relevant to pronoun use in the input per language (100%)

<table>
<thead>
<tr>
<th>Functions</th>
<th>Dutch %</th>
<th>English %</th>
<th>French %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discourse-given-shift</td>
<td>49%</td>
<td>61%</td>
<td>50%</td>
</tr>
<tr>
<td>Discourse-given-maintenance</td>
<td>27%</td>
<td>23%</td>
<td>28%</td>
</tr>
<tr>
<td>Discourse-new-exp</td>
<td>20%</td>
<td>12%</td>
<td>17%</td>
</tr>
<tr>
<td>Discourse-new-end</td>
<td>3%</td>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>
Discourse-given-shift is the most frequent pragmatic function in the input in all three languages, followed by discourse-given-maintenance (Table 8.11). However, the consistency in using pronouns as compared to nouns and proper names is not so clear for discourse-given referents. That is, the cue consistency for using a pronoun in maintenance is rather strong in all three languages (more than 80% in English and French, 66% in Dutch, §8.3.2.1). The cue consistency is, however, less strong for discourse-given-shift. Both nouns and pronouns are used to a considerable extent in this function. For example, the Dutch adults use 48% of nouns and 42% of pronouns for referent shift. In addition, pronouns are also used for discourse-new-exp (see §8.3.2.1). The not so consistent form-function use of nouns and pronouns for new/given in the input predicts that children need some time to reach the adult level of form use. This appears to be the case: although the children show sensitivity to the new/given distinction from 2;3-2;6 onwards (§8.4), it takes them until 2;6-2;9 in all languages to reach the adult level of frequency of forms for both discourse-given-maintenance and discourse-given-shift. At the early age points, the children use more nouns for discourse-given reference than the adults and are being over-explicit (§2.4.1). The children’s initial over-explicitness can be most clearly illustrated by their use of nouns for discourse-given-maintenance in Figure 8.1. Around 2;9, the children have reached the input level in using nouns for discourse-given-maintenance (20%).

![Figure 8.1. Use of nouns for discourse-given-maintenance in child Dutch, English and French as a percentage of the total number of forms for maintenance per age point per language and a corresponding result for the Dutch, English and French input combined](image-url)
In the input, discourse-new referents that are physically present (exp) are more frequent than discourse-new referents that are absent (end). However, the cue consistency for discourse-new-end referents is strong. Pronouns, which are usually inappropriate for this function, are hardly used. In contrast, for discourse-new-exp, the adults use around 30% of pronouns alongside nouns and some proper names. The children acquire the restricted use of pronouns in discourse-new-end very fast in all three languages. They have reached an adult level of form use already in the age range 2;0-2;6. The children do use more pronouns than the adults for physically present discourse-new referents at the early ages. As pointed out, the input cue is less consistent on this point.

In sum, both cue frequency and cue consistency appear to play a role in the acquisition of the pragmatics of reference in pronoun use.

8.5.3 Section summary
The children show early sensitivity to the input in the acquisition of reference with pronouns. Language-specific patterns are already evident in the children’s early form-function combinations. Like the adults, the Dutch children use more demonstrative pronouns for discourse-given reference than the English and French children. Moreover, the French children use more ‘other’ pronouns than the Dutch and the English, most notably in discourse-given-maintenance. This difference was also found in the input. In addition, both the frequency of a particular form-function combination and the cue consistency play a role in the acquisition of form-function combinations. It takes children some time to acquire the adult level for the frequent, but not so consistent use of pronouns for discourse-given reference, especially for referent maintenance. The restrictions on pronoun use for discourse-new referents that are physically absent are acquired faster. This latter function is infrequent, but the cue consistency is strong. The early influence of the input is consistent with an input-based account of language acquisition.

8.6 Conclusion
This chapter focused on the use of pronouns compared to nouns and proper names for the pragmatic factors of (1) new/given in discourse and (2) familiarity to the hearer based on the presence/absence of discourse-new referents. The influence of the input has also been investigated.

The children show adult-like patterns of pronoun use for discourse-new and discourse-given reference from 2;0 onwards in English, 2;3 in French and
2;6 in Dutch. Pronouns are associated with discourse-given-maintenance and discourse-given-shift, whereas nouns are associated with discourse-new reference. The children thus show early sensitivity to the new/given distinction. It takes, however, until 2;6-2;9 in all three languages, before the children have reached the adult level in terms of frequency of forms for discourse-given-maintenance and discourse-given-shift. At the early age points studied, the children use more nouns and fewer pronouns for these functions than the adults and are thus being over-explicit, especially in discourse-given-maintenance. Input cues might play a role here. The use of pronouns, nouns and proper names is not fully consistent for the new/given distinction. Nouns are used to a considerable extent for discourse-given referents (especially for referent shift) and pronouns for discourse-new referents that are physically present (§8.5.2). It is plausible that because of this reduced consistency, children need some time to reach the adult level of form-function use for discourse-given reference. The influence of cue frequency and consistency is in accordance with the input-based, constructivist account of language acquisition (Tomasello, 2003). Early influence of the input was also found for language-specific form-function patterns. For example, like the adults, the Dutch children use more demonstrative pronouns for discourse-given referents than the English and French children.

In all three languages, the children use pronouns, nouns or proper names in an adult-like way with regard to the familiarity of discourse-new referents to the hearer on the basis of physical presence or absence. In addition, they have reached the adult level of avoiding pronouns for discourse-new referents that are absent (discourse-new-end) already in the early age range of 2;0-2;6. This could be taken as evidence that the children correctly take account of the listener’s perspective in pronoun use. This would be rather surprising, since the results on determiner use have shown that the children are just becoming sensitive to familiarity on the basis of $\text{mk}/\text{nmk}$ in the later age range (2;9-3;3) and make many errors until 3;3 (Chapter 7). Moreover, Matthews et al. (2006) investigated English children’s use of nouns and pronouns in an experimental situation where the child could always see the referent and the listener either could or could not see it. In these situations, two-year-old children did not differentiate their use of pronouns with respect to the perceptual availability of the referent to the listener. Finally, adults do not often talk to children about referents that are new to discourse and not physically present (3%). Children thus hardly receive evidence on how to take account of the listener in pronoun use.
All in all, this makes it implausible that sensitivity to familiarity is developing so quickly as suggested by the current data. It was already proposed that the apparent sensitivity to the listener’s perspective might be explained by the deictic properties of pronouns (§8.4). The children may be using a pronoun to introduce a referent to discourse only on the basis of whether they themselves can see it or not, without taking account of the interlocutor. Earlier studies have found that pronouns and deixis are indeed closely related in child language. For example, Tomasello, Anselmi and Farrar (1984) show that children use more (deictic) gestures in using pronouns as compared to nouns. The current data also contain signals that point to a strong relationship between pronouns and deixis. For example, the children sometimes use a pronoun to introduce a referent to discourse without establishing or checking whether there is joint attention. In these data, it was impossible to code for joint visual attention, since video-recordings were not available (§4.2). However, on the basis of the adults’ reactions, it becomes clear that the children’s pronominal references are not always felicitous, even if the referent is physically present, as in (19).

(19) Use of pronoun for discourse-new-reference, presumably without joint attention

a. CHI: What’s that.          (Peter, 2;3, English)
   INV: What’s what?
   CHI: That’s that right there.
   %act: Peter pointing.
   INV: A dog?

b. CHI: Ah, valt.            (Abel, 2;6, Dutch)
   ‘Oh, falling’
   CHI: Dit.
   ‘This’
   INV: Wat valt?
   ‘What’s falling?’
   INV: Oh, die kleine.
   ‘Oh, the little one’

There are more signals that point to a strong relationship between pronouns and deictic reference in the children’s language. In discourse-given-maintenance, the children also use more pronouns for referents that are physically present than for referents that are absent in the early age range, 2;0-2;6 (Dutch, 54%-6%, $\chi^2=41.03, df=2, p<0.001, C=0.39$; English, 60%-22%, $\chi^2=108.31, df=2, p<0.001, C=0.47$; French, 61%-43%, $\chi^2=26.26, df=2, p<0.001, C=0.25$). The children also use more pronouns for physically present than for physically absent referents
for referent shift in both age ranges: 2;0-2;6 (Dutch, 35%-1%, $\chi^2=108.71$, df=2, $p<0.001$, C=0.46; English, 43%-10%, $\chi^2=270.06$, df=2, $p<0.001$, C=0.51; French, 35%-16%, $\chi^2=53.25$, df=2, $p<0.001$, C=0.29) and 2;9-3;3 (Dutch, 47%-16%, $\chi^2=70.69$, df=2, $p<0.001$, C=0.32; English, 55%-34%, $\chi^2=85.09$, df=2, $p<0.001$, C=0.29; French, 62%-43%, $\chi^2=72.22$, df=2, $p<0.001$, C=0.26). On the basis of these considerations, I no longer regard the apparent early sensitivity to familiarity as a result. Deixis appears to be a more important factor in explaining the children’s pattern of pronoun use for discourse-new-reference.

In sum, the findings in this chapter show that the new/given distinction plays an important role in children’s use of pronouns. The children acquire perspective taking skills in pronoun use quite slowly and not more quickly than in determiner use. The children are influenced by the input in the acquisition of reference with pronominal forms.