The acquisition of reference: a cross-linguistic study

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3.1 Introduction

The discussion of the adult system for reference in Dutch, English and French in Chapter 2 showed that the choice of different types of determiners and of pronouns as opposed to nouns and proper names is related to the pragmatic factors of (1) specificity, (2) givenness in discourse and for discourse-new referents to (3) assumed familiarity to the hearer (§2.4.1). In the acquisition of reference, children are faced with a double task: they must not only acquire the relevant referential expressions, but also learn the pragmatic conditions under which these forms can or must be used. The first task is part of the acquisition of morphosyntax. The second concerns the acquisition of pragmatics, which, in turn, is related to cognitive development and ToM.

The goal of this study is to examine when children start to show sensitivity to the three pragmatic factors in their use of morphosyntactic forms for person and object reference. Three issues will be examined in order to shed more light on the interaction between the morphosyntax and pragmatics in this development. These are (1) the development of associations and the influence of speed of acquisition of morphosyntactic forms, (2) the role of the input and (3) parallel or unequal sensitivity to a pragmatic factor in the use of determiners versus pronouns (§1.2).

The current chapter gives an overview of earlier research on the acquisition of the morphosyntax and pragmatics of reference. The general pattern of determiner and pronoun acquisition in Dutch, English and French is reviewed in §3.2. The
focus will be on evidence for the earliest age of productive use of these forms by children. Evidence for the role of the input in the acquisition of morphosyntactic forms will also be discussed. The acquisition of the cognitive concepts that are assumed to be necessary for the pragmatics of reference will be discussed in §3.3. In §3.4, earlier studies on the interaction between the morphosyntax and pragmatics of reference in acquisition will be examined. The role of the speed of morphosyntactic development and the role of the input have not been studied in detail in this area. The few studies that exist will be discussed. The discussion of all previous literature will lead to the formulation of research questions and hypotheses in §3.5. The research questions derive from the three more general issues that are investigated in this study (§1.2).

3.2 The acquisition of morphosyntactic forms for reference in Dutch, English and French

Once a morphosyntactic form is used productively, the investigation of children’s sensitivity to the pragmatic factors that condition the use of that form can start. In reviewing, interpreting and comparing results from previous research on the acquisition of morphosyntactic forms, it is crucial to know which criteria for acquisition or productive use have been applied. Unfortunately, these criteria have not always been clearly defined (see §5.2 for the acquisition criteria used in the current study). Determiner acquisition is generally represented as an increasing percentage of determiner use in obligatory morphosyntactic contexts in the adult language. Following Brown (1973), the determiner is acquired if it is used in more than 90% of the obligatory contexts. In describing the acquisition of pronominal forms, most researchers only mention the age at which a child or group of children uses a certain form, since pronoun use is rarely morphosyntactically obligatory. Therefore, only very broad indications can be given of the age of pronoun acquisition in Dutch, English or French. The acquisition of determiners will be discussed first (§3.2.1) followed by a review of the acquisition of pronominal forms and proper names (§3.2.2).

3.2.1 The acquisition of determiners

In languages that have determiners, there is much cross-linguistic evidence for the omission of determiners in the earliest stages of acquisition. Various explanations have been put forward to account for this observation. Some authors, working from a generative perspective, have proposed that the child’s grammar initially only includes lexical categories. Functional elements are not yet present at
the onset of language acquisition. Gradually, the functional elements, including determiners, are built up in a bottom-up process (e.g. Radford, 1990; Hulk, 2004). An alternative perspective, also stemming from generative linguistics, is the assumption that children have both lexical and functional categories available at the onset of acquisition. The functional categories are, however, omitted because of processing limitations (e.g. Baauw, De Roo & Avrutin, 2002; Avrutin & De Lange, 2004). Other authors argue that determiner omission is basically a phonological phenomenon. Children omit determiners because initially, they prefer a strong-weak metrical template in language production. Determiners are unstressed weak elements and therefore tend to be omitted at the beginning of noun phrases to conform the preferred strong-weak template (Gerken, 1994; Wijnen, Krikhaar & Den Os, 1994). Researchers working from a constructivist perspective have proposed that the determiner category is acquired gradually, item-by-item and on the basis of the input (Tomasello, 2003). Evidence for this position comes from studies suggesting that children at first do not seem to generalize the use of different determiner types over lexical nouns (Pine & Lieven, 1997; Kemp, Lieven & Tomasello, 2005). That is, in early language production children use fixed determiner-noun combinations without much variation in the determiner type used. However, generalization of determiner use over the broader category of nouns seems to start early, already in two-year-olds. Finally, some pragmatic explanations have been put forward to account for determiner omission (Baauw et al., 2002; Bohnacker, 2003; Roeper, 2006). These proposals will be discussed and investigated empirically in §7.4.1.

In the second year of life, children start to produce filler syllables before nouns in various languages. These filler syllables are phonetically realized as schwa and often analyzed as proto-determiners in Dutch and French (Wijnen et al., 1994; Veneziano & Sinclair, 2000; Kilani-Schoch & Dressler, 2001; Taelman, 2005). In English, pre-nominal filler syllables are phonetically very similar to the indefinite determiner. These forms are, therefore, hard to distinguish from each other. To my knowledge, research on determiner acquisition in English has not been able to separate proto-determiners in the form of fillers from ‘true’ determiners. The lack of phonetic information in the language data used also makes such a distinction hard to make (Peters, 2001).

In the following sections, earlier research on the acquisition of determiners in Dutch, English and French is discussed. If possible, it will be indicated whether fillers were counted as determiners or not in the studies on Dutch and French. In
§3.2.1.4, the speed of determiner development and age of acquisition in the three languages is compared. The possible role of the input in determiner acquisition is also discussed in §3.2.1.4.

3.2.1.1 Dutch

The use of determiners starts before or around the second birthday in Dutch. Bol and Kuiken (1988) report that 25%-50% of the children in their cross-sectional study (n=42) started to use determiners and fillers before nouns between 1;6 and 2;0. This percentage increased to 50%-75% for children between 2;0 and 2;6. Despite the early appearance of the determiner in language production, longitudinal studies show that it takes Dutch children quite some time to reach Brown’s 90-percent-level. Pannemann (2007) reports on two children who used around 10% of determiners in obligatory contexts at 2;0, around 30% at 2;5 and 80% at 3;0. Other longitudinal investigations confirm the stretched out period of determiner acquisition in Dutch. Van der Velde (1999) examined one child who realized 9% of the determiners and fillers at 1;10, 27% at 2;3 and 48% at 2;5. Finally, Wijnen et al. (1994) investigated two children who used determiners in 15%-20% of the obligatory contexts between 1;6-1;10 and in 40%-60% of the cases about a year later (2;7-2;10). In general, Dutch children seem to attain Brown’s 90-percent-level after 3;0. In research on Dutch children between 4;0 and 8;0, the four-year-olds (n=60) produce 98% of determiners in the obligatory contexts (Verbeek, van den Dungen & Baker, 2007). This observation is confirmed by data from experimental studies. Schaeffer (2000) found that in a group of 13 three-year-olds (mean age 3;6) only 78% of determiners were produced before nouns in object position. Moreover, van der Velde (2003) induced the production of determiner-noun combinations in isolated contexts and sentence contexts for a group of fourteen three-year-olds (mean age 3;4). The children produced determiners in isolated contexts 78% of the time. When in sentences, nouns were more often accompanied by a determiner (87%), but ungrammatical bare nouns did still occur.

There are some reports in the literature on the order of acquisition of different types of determiners in Dutch. These suggest that the indefinite determiner *een* is
acquired before the definite and demonstrative determiners and that the common
gender definite determiner de is acquired before the neuter gender definite
determiner het (Van Kampen & Wijnen, 2000; Blom, Polišenská & Weerman,
2008). Examples from Dutch child language in the literature suggest that both
definite, indefinite and demonstrative determiners are generally present in Dutch
children’s language production around 2;6 (see De Houwer & Gillis, 1998 for an
overview). The acquisition of the possessive determiner is set between 2;6 and
3;0 for the majority of the children (Bol & Kuiken, 1988).

In sum, the acquisition of determiners takes several years to complete in
Dutch. Although Dutch children start to use determiners or filler syllables before
nouns around age 2;0, Brown’s 90-percent-criterion is generally only reached
after three years-of-age. The input might play a role here. Determiner production
before nouns is not consistent in Dutch, since this language allows bare nouns as
indefinite plurals or mass nouns (§2.2.1).

3.2.1.2 English

According to parent reports from the MacArthur CDI for American English,
children start to consistently produce determiners in this language, at least
the and a, around their second birthday (Fenson, Dale, Reznick, Bates, Thal &
Pethnick, 1994). In his seminal study, Brown (1973) established the 90-percent-
level of determiner production for three children. The child Sarah attained this
level for article production at 3;1. The second girl, Eve, is generally held to be
an early talker. At 2;3 she already produced the articles in 80% the obligatory
contexts. The data of the third child in Brown’s study, Adam, are excluded from
this review, since his data are also part of the empirical part of this study (§4.2.2).
De Villiers and De Villiers (1973) found a similar acquisition rate in a cross-
sectional study. Their sample contained data from three children at 2;2, who
produced the articles a and the in on average 54% of the obligatory contexts. At
2;6, four other children produced articles in on average 68% of the obligatory
contexts. This percentage increased to a mean of 82% at 2;9 (n=2) and 94% at
3;0 (n=1). Recent data from Abu-Akel and Bailey (2000) confirm this picture
for a larger group of English-speaking children between 1;6 and 3;6 (n=17).
Determiner use in obligatory contexts increased in this group from 40% at 2;0
to 67% at 2;6, 84% at 3;0 and finally to 87% at 3;3. Moreover, Schaeffer (1999)
found that a group of ten English-speaking two-year-olds (range 2;1-2;10) omitted
articles before objects in only 5% of the cases. A group of sixteen three-year-olds
(range 3;0-3;10) performed even better: only 1% of the articles was omitted from obligatory morphosyntactic contexts.

Like in Dutch, there are few reports on the order of acquisition of different determiner types in English. The definite and indefinite determiner seem to be acquired shortly after or at the same time as the genitive –s (Brown, 1973; De Villiers & De Villiers, 1973). No information was found about the order of acquisition of other determiner types, such as the demonstrative or possessive determiner.

In sum, English children appear to attain Brown’s 90-percent-level before or around three years-of-age. This is earlier than what has been reported for Dutch children (§3.2.1.1). Whether this can be related to differences between these languages in the input frequency of bare nouns and nouns with determiners is not clear. The current study hopes to shed more light on this issue.

### 3.2.1.3 French

The use of (proto-) determiners seems to start well before two years-of-age and soon after the first two-word-combinations in French (Clark, 1985). Several case studies on French indicate that the 90-percent-production level for determiners is attained more rapidly than in Dutch and English (§3.2.1.1-§3.2.1.2). Van der Velde, Jakubowicz and Rigaut (2002) found that two out of the three French-speaking children in their study already produced 80% of determiners and fillers in obligatory morphosyntactic contexts by the age of 1;11. The third child was a little later, but still early compared to Dutch and English children: he attained the 80%-level at 2;1. Pannemann (2006) reports determiner and filler production rates of 50% in two children of 2;0. Kilani-Schoch and Dressler (2001) describe an increase in the use of determiners and fillers from 37% at 2;0 to 79% at 2;6 in the language of one child learning the Swiss variety of French. Finally, Hamann (2004) reports on three children reaching the 90-percent-level by the age of 2;6. The pattern of rapid determiner acquisition as reported in case studies, is confirmed by cross-sectional analyses of sixty children acquiring French (Bassano, Maillochon & Mottet, 2008). At 1;8, these children produced determiners or fillers in 38% of the obligatory contexts. This percentage increased to 78% at 2;6 and 96% at 3;3. Similarly, Paradis and Crago (2004) found a determiner production rate of 95% in the spontaneous speech of ten children with a mean age of 3;3.

Reports on the order of emergence of different determiner types suggest that the definite and indefinite article appear first. Possessive determiners are acquired later, as are partitive and demonstrative determiners. The latter form
is also used infrequently in child French (Van der Velde, 1999; Van den Berg, 2001; Bassano et al., 2008). Generally, masculine determiner forms are acquired before feminine forms and singular determiner forms before plural forms (Hulk, 2004; Bassano et al., 2008).

In sum, the acquisition of determiners appears to proceed faster in French than in Dutch and English. The first (proto-) determiners often appear before two years-of age and the 90-percent-level seems to be reached before 3;0. These findings correspond with the greater frequency and consistency of determiner production in the French adult system, compared to Dutch and English (§2.2.1).

3.2.1.4 Comparing determiner acquisition across the three languages

The previous sections suggest that determiner development proceeds fastest in French, followed by English and then Dutch. Several cross-linguistic studies have confirmed this pattern. Two French children studied by Pannemann (2007) both attained the 90-percent-level by 2;6. The two Dutch children in her study had not reached this level by 3;2. Van der Velde (2003) compared determiner production in fourteen Dutch and twelve French children with a mean age of 3;4. Again, the French children used more determiners than the Dutch in isolated contexts (95% versus 78%) and in sentence contexts (94% versus 87%). Chiercha, Guasti and Gualmini (2001) found earlier and faster determiner development in French than in English. The acquisition of determiners in English and Dutch has, to my knowledge, not yet been compared in cross-linguistic research. The results from the current study hope to clarify whether determiner development is indeed faster in English than in Dutch.

Researchers have attempted to provide an explanation for the different determiner acquisition rates across languages. Some have pointed to differences in prosody of determiner-noun combinations across languages (e.g. Lléo, 2001). Kupisch (2004) found that the determiner acquisition of German-French and German-Italian bilingual children proceeds fastest in French, followed by Italian and then German. This pattern, she found, is reflected in the frequency of determiners and bare nouns in the input. That is, determiners are most frequent in French, followed by Italian and German. In a follow-up study, Kupisch (2006a) examined the influence of the input in monolingual children acquiring these languages. Her data show that input frequency can be related to the speed of determiner acquisition to some extent, although it cannot fully explain omission and acquisition rate in French, Italian and German. The relation between input
frequency of determiners and differences in the speed of acquisition across languages will be further explored in the current study.

3.2.2 The acquisition of pronouns and proper names

In this section, the focus will be on pronouns that refer to third person entities (§1.1 and §2.2.2). For purposes of comparison, however, the acquisition of first and second person pronouns will also be briefly mentioned. There is no fixed criterion for pronoun acquisition as there is for determiner acquisition (i.e. the percentage of forms in obligatory morphosyntactic contexts, see §3.2.1). Therefore, only the age at which children generally use a certain form will be reported in this section. Moreover, there is not much known about the speed of acquisition of pronouns and the role of the input in terms of frequency. If possible, apparent influence of the input will be highlighted.

3.2.2.1 Dutch

The first pronominal forms in Dutch seem to be demonstrative pronouns (die/dit/dat/deze). Bol and Kuiken (1986) found that these forms are abundantly used from 1;2 onwards. Proper names are also amongst the earliest referential forms. Young Dutch children often use proper names instead of personal pronouns to refer to both others and themselves (Schaerlaekens & Gillis, 1987; De Houwer & Gillis, 1998).

Around 2;0, Dutch children start to use personal pronouns. The earliest personal pronouns are generally the singular subject forms for first, second and masculine third person (ik, jij/je and hij/ie). The feminine and neuter third person singular as well as plural forms of personal pronouns are used infrequently and seem to be acquired later. Dutch children frequently overgeneralize the third person masculine personal pronoun for the feminine form (Bol & Kuiken, 1986; Schaerlaekens & Gillis, 1987; Verhulst-Schlichting, 1987). The object forms of personal pronouns (e.g. hem/haar) appear later than the subject forms. The first and second person object forms are frequently used. The feminine third person object form is acquired later than the masculine object form. Bol and Kuiken did not find any instances of plural object forms in their data. Finally, reversals of subject and object forms of personal pronouns are infrequent in Dutch (De Houwer & Gillis, 1998). This is in contrast to findings often reported for English (see §3.2.2.2).

From 2;4 onwards, Dutch children start to use possessive pronouns. Again, the first and second person singular are used most frequently, whereas the feminine form and plural forms are rare. Other types of pronouns, such as
relatives and reflexives, appear only after 3;0 (Bol & Kuiken, 1986).

In sum, both pronouns and proper names are available for third person reference before two years-of-age in Dutch. There is considerable variation in the order of emergence of different types of pronouns. Demonstrative pronouns are acquired before 2;0, followed by the subject form of the masculine personal pronoun around 2;0. The feminine, plural and object forms of personal pronouns as well as possessive pronouns appear later. The role of the input in the acquisition of different pronominal forms has not been investigated for Dutch. However, the children’s early use of demonstrative pronouns may be related to its assumed frequent use in the adult language (§2.2.2). A relationship between the use of demonstrative pronouns and the deictic, here-and-now nature of early parent-child interaction is also possible (Ninio & Snow, 1996; Clark, 2003).

### 3.2.2.2 English

Demonstrative pronouns are amongst the first words used by English-speaking children (Brown, 1973; Wales, 1986). In reference to both self and others, children use proper names from a very early age in English (Chiat, 1986; Durkin, 1987; Blackwell, 2007). This pattern is similar to that described for children acquiring Dutch (§3.2.2.1).

Between the ages of 1;6 and 2;0, English children start to use the personal pronouns *I, you, it* and *my*. Initially, these forms might be produced in stereotyped, unanalyzed phrases. For instance, the pronoun *it* is often restricted to the post-verbal position, e.g. *put it there* (Brown, 1973; Chiat, 1986). The third person masculine and third person feminine pronoun as well as plural forms are generally acquired later than the first person singular and third person neuter pronoun. In studies that used clear criteria for acquisition, productive use of the masculine and feminine form is set around 2;6 (Girouard, Ricard & Decarie, 1997; Blackwell, 2007). As in Dutch, children acquiring English often use the masculine pronoun to refer to a female referent (Mills, 1986). On the basis of parental reports, most possessive and reflexive pronouns appear to be used only after 2;6 (Fenson et al., 1994).

Subject forms are generally acquired earlier than object forms of personal pronouns, e.g. *he* before *him*. English children are known to make case errors in pronoun production. That is, they use object pronouns erroneously in subject

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3 Girouard et al. (1997) define acquisition as at least two correct productions of the pronominal form in syntactically different contexts with at most one erroneous use. In Blackwell’s study, acquisition is defined as three or more canonical uses in a particular file combined with 75% correct production of the target form if it was apparently intended (Blackwell, 2007: 183).
position for both first and third person (Vainikka, 1993; Kirjavainen, Lieven, Theakston & Tomasello, 2006).

In sum, English-speaking children have proper names, demonstrative pronouns and the third person neuter form *it* available for third person reference around age 2;0. There is variation in the order of emergence of pronominal forms. The third person masculine personal pronoun is amongst the earlier pronominal forms, appearing shortly after 2;0. The feminine personal pronoun, plural personal pronouns and possessive pronouns are acquired around or after 2;6. The pattern of pronoun acquisition in English is highly similar to that described for Dutch (§3.2.2.1), except for the fact that the neuter third person pronoun is acquired earlier in English. In the input, the masculine third person pronoun *he*, neuter pronoun *it* and demonstrative pronoun *that* appear to be very frequent (Laakso & Smith, 2007). These are also amongst children’s earliest pronominal referential expressions.

### 3.2.2.3 French

The earliest pronominal forms in French are mostly first and second person forms. The personal pronoun *moi* and the possessives *mon* and *ton* are produced before the end of the second year. The first person subject clitic *je* comes in later and is initially often combined with *moi* into ‘*moi, je*’. Children acquiring French also use proper names to refer to themselves.

For third person reference, the demonstrative pronouns *ça* (strong form) and *ce* (clitic form) are used in different linguistic contexts from at least 2;0 onwards (Hamann, Rizzi & Frauenfelder, 1996). The third person singular masculine subject clitic *il* follows between 2;0 and 2;6. As was found for Dutch and English, the masculine personal pronouns are acquired earlier than the feminine forms and singular personal pronouns are generally acquired before plural ones (Clark, 1985; Hamann et al., 1996; Girouard et al., 1997; Van der Velde et al., 2002). French-speaking children also pass through a stage in which they overgeneralize masculine pronominal forms to female referents (Clark, 1985).

The acquisition of French subject clitics as compared to object clitics (§2.2.2) has received much attention in the literature. Most studies found that subject clitics precede object clitics in productive use. Object clitics are initially dropped from obligatory contexts and are therefore infrequent in French child language up to 2;6 (Hamann et al., 1996; Van der Velde et al., 2002; Hamann, 2004). Moreover, the acquisition of adult-like use of object clitics is stretched out over a
long period. A group of ten children with a mean age of 3;2 still omitted object clitics in 15% of the obligatory contexts (Paradis, Crago & Genesee, 2005-2006). In relation to the late acquisition of object clitics, it is interesting to note that reflexive pronouns, which are also clitic forms, appear early in child French, that is, around 2;3 (Van der Velde et al., 2002).

In sum, French children start to use pronominal forms before two years of age in French. In third person reference, demonstrative pronouns and the singular masculine personal pronoun as subject clitic are acquired around 2;0. Other forms follow later. There is an asymmetry between the acquisition of subject and object clitics. The latter are acquired later and frequently omitted even after age 3;0. The role of the input in the acquisition of pronouns in French is not clear.

### 3.2.2.4 Comparing pronoun acquisition across the three languages

In all three languages, children generally have acquired some pronominal forms for third person reference around the age of two. The earliest forms in all three languages are demonstrative pronouns and proper names. The third person masculine personal pronoun is acquired early in Dutch and French, whereas English children acquire the neuter personal pronoun *it* as one of the earliest third person forms. Between 2;0 and 2;6, children also start to use feminine and plural personal pronouns, as well as possessive pronouns. Subject forms of personal pronouns are generally acquired earlier than object forms. Reflexives are acquired earlier in French than in Dutch and English. The role of the input in the acquisition of pronouns is not clear. Data from child directed speech in English do, however, suggest that the most frequent pronominal forms in the input are also acquired early by children (Laakso & Smith, 2007). To my knowledge, such data do not exist for Dutch and French. The focus on the here-and-now in early parent-child interaction might account for the early acquisition of demonstrative pronouns as deictic referential devices.

### 3.2.3 Section summary

Children acquiring Dutch, English or French generally start to produce both determiners and pronouns around 2;0. It is, however, not clear whether they take account of the pragmatic factors in determiner and pronoun use equally or whether they develop sensitivity to these factors form-by-form. This will be explored in the current study (see also §3.5). On the basis of the earlier studies discussed, there appear to be no large differences in the speed of acquisition
of pronominal forms (§3.2.2.4). In contrast, determiner acquisition seems to proceed fastest in French, followed by English and then Dutch. Whether this difference influences children’s sensitivity to pragmatic factors in determiner use will be further investigated in this study (see also §3.5).

3.3 The development of social-cognitive skills necessary for reference

Reference is related to cognitive development, since it requires some basic cognitive skills (§1.2 and §2.3). Children must at least be able to establish what is new and what is given to them in a very basic sense, to subsequently apply this skill in language to distinguish between non-specific/specific reference and new/given in discourse. Children must also be aware that the listener’s perspective might be different from their own perspective, to be able to assess the familiarity of discourse-new referents to the listener. In this section, I will discuss the development of cognitive skills that are assumed to be necessary for taking account of the three pragmatic factors studied here. The acquisition of reference also builds on children’s social skills, more specifically their willingness to establish interpersonal communication. This will be discussed first.

Research has shown that normally developing children are social creatures from very early in development. For example, infants engage in social crying and smiling, have a preference for human faces and imitate human face expressions and body movements (e.g. Ninio & Snow, 1996; Meltzoff, 1999; Leinonen, Letts & Smith, 2000; Clark, 2003; Tomasello, 2003). Studies on pre-linguistic communication have shown that normally developing children also take part in so-called proto-conversations. Initially, the role of the adult is particularly important in these proto-conversations. That is, the adult reacts to the child’s vocalizations in a turn-taking pattern and attributes communicative intent to the child’s vocalizations. The adult also monitors what the child is attending to and comments on this linguistically. As such, the adult puts considerable effort into establishing joint attention, which is a necessary ingredient for interpersonal communication. Around the age of twelve months, children can attract the adults’ attention to satisfy their goals or to communicate their wishes. At this age, they have also learnt to actively try to direct the interlocutor’s attention non-verbally to visible objects. One of the ways in which twelve-months-old children attract and share attention for entities with others, is by means of pointing. Children use pointing as a referential device and as a non-verbal initiation of topics in communication (e.g. Bates, Camaioni & Volterra, 1975; Ninio & Snow,
A large part of the social basis for reference is thus in place before children start to use language.

Children’s early referential points subsequently become combined with words and later with multi-word utterances (Clark, 2003; Rodrigo, Gonzalez, de Vega, Muneton-Ayala & Rodriguez, 2004; Iverson & Goldin-Meadow, 2005). When children start to use words, they enter into the world of linguistic reference. This enables them to also refer to entities outside the here-and-now. This is impossible if children rely purely on deictic means of communication, such as pointing. It has already been pointed out at several places in this thesis that the acquisition of linguistic reference encompasses more than just acquiring the relevant morphosyntactic forms. Children must also learn how to use these forms from a pragmatic point of view. They must assess whether the referent is (assumed to be) present in their own and in the hearer’s memory and also to what extent the referent is activated (cognitive status, §2.3). This requires at least two basic cognitive skills: (1) the ability to distinguish between new and given and (2) the ability to take account of the listener’s perspective.

It could be argued that a basic awareness of what is new or given is needed to make the distinction between new/given in discourse and also between non-specific/specific reference. These evaluations can be made from an egocentric perspective. In the case of givenness, the speaker must assess that the referent is known to her. For non-specific reference, she must be able to recognize that the referent is new and therefore not (yet) represented in her memory. Research outside the realm of language has shown that infants become aware of the new/given distinction between birth and two years-of-age. In dishabituation experiments, four- to six-months-old infants prefer novel stimuli to familiar stimuli. The preference for novelty is taken as an indication that a representation of the familiar stimulus is already present in memory and that pre-linguistic infants can visually distinguish what is new from what is given (cf. Fantz, 1964; Roder, Bushnell & Sasseville, 2000). The question is of course, whether children can apply this skill in distinguishing linguistically between non-specific and specific reference and between discourse-new and discourse-given. This will be addressed in the current study.

Appropriate reference also requires taking account of the listener’s perspective. The speaker must decide whether she assumes the hearer to be familiar with the referent or not. The source of this potential familiarity also plays a role in the choice for referential expressions. Is the referent known to the hearer on the
basis of general or shared knowledge? Or is the referent perceptually available to the hearer (§2.3)? As already stated earlier (§1.2 and §2.3), the development of appropriate perspective taking is a cognitive skill that is part of the acquisition of Theory of Mind. ToM can be seen as a broad term for a multi-faceted concept. ToM not only includes perspective taking as necessary for reference, but also other abilities, for example social understanding, false-belief understanding and belief-desire reasoning (see Wilde Astington & Baird, 2005 for an overview). The acquisition of these abilities develops at different rates. Complete understanding that others’ minds are separate from one’s own seems to take at least until age four. This is especially evident in so-called false-belief tasks, in which children must realize, and verbalize, that another person might hold and act on false beliefs (Ruffman & Perner, 2005).

There is evidence for early perspective taking skills in children. As has been pointed out above, children already actively engage with other people in the first year of life and also begin to understand the communicative intentions of others at this age (see Tomasello, 2003 for an overview). Just after their first birthday, children are able to take the perspective of other people to some extent. Tomasello and Haberl (2003) found that when an adult excitedly asked infants to hand her one of three objects which were all familiar to the infants, twelve- and eighteen-months-olds were more likely to hand an object that was new to the experimenter than one with which they had played together. At twelve to eighteen months, the children thus were already aware of what was new for the experimenter, even if this was not new for the children themselves. Around the same age, children are also able to distinguish between whether an adult does or does not see an object. In an experiment by Brooks and Meltzoff (2002), children follow an adult’s head turn more often if the adult has open eyes rather than closed eyes. Children might be able to build on these cognitive skills in acquiring the appropriate referential expressions for discourse-new referents that are mk or nmk and physically present or physically absent.

Finally, the acquisition of language enables children to talk about referents outside the here-and-now. Initially, adults heavily rely on the here-and-now in conversations with children (Ninio & Snow, 1996). They talk about objects in view and about what is currently happening. This ensures that the child knows what is being talked about and increases the likelihood of engagement of the child. However, discussions of the non-present are not completely absent in adult-child conversations. Ninio and Snow (1996: 122) report that in a group
of Hebrew-speaking children, the percentage of child utterances related to the non-present increases from 2% at twelve months to around 8% at age 2;6. The same increase can be found in the percentage of adult utterances addressed to the children. According to De Blauw and Baker (2008), the percentage of talk about the non-here-and-now continues to increase at least until 3;9 in children acquiring Dutch.

In sum, this section has shown that children have acquired many of the social-cognitive skills that are useful for appropriate person and object reference well before two years-of-age. The question is, however, if and how children use these social-cognitive skills in language and if these are sufficient for appropriate reference.

3.4 Interaction between morphosyntax and pragmatics in the acquisition of reference

Children’s sensitivity to the pragmatic factors of specificity, givenness in discourse and assumed familiarity of discourse-new referents has been studied in a wide range of languages. This section focuses on the results of these earlier studies and on possible gaps in the literature that the current study hopes to address. If possible, children’s sensitivity to the pragmatic factors studied will be compared for determiner and pronoun use. The role of the input has not yet been very widely studied in this field, but the few results that exist will also be discussed.

Most studies have focused on children’s sensitivity to new/given and familiarity in narratives from picture sequences (e.g. Emslie & Stevenson, 1981; Power & Dal Martello, 1986 for English; Bamberg, 1987 for German; Clancy, 1992 for Japanese; Kail & Hickmann, 1992 for French; Aarssen, 1996 for Dutch; Kail & Sanchez y Lopez, 1997 for Spanish; Wong & Johnston, 2004 for Cantonese). The results from these studies generally indicate that young children have difficulties in taking the perspective of the listener in determiner use. Up until at least six years-of-age, they incorrectly use nouns with definite determiners for discourse-new referents that are not mutually known between speaker and hearer (§2.4.1). However, children have already stopped using pronouns in this context by the age of four. Sensitivity to familiarity to the hearer thus seems to develop differently in determiner and pronoun use. This will be investigated further in this study. There is also evidence from narrations for children’s sensitivity to the new/given distinction in reference. At four years-of-age children already prefer to use pronouns instead of nouns for discourse-given-shift and even more strongly for maintenance. Children thus seem to
be sensitive also to different degrees of givenness. How sensitivity to the new/given distinction develops will be explored in the current study.

The studies based on narrations have generally been conducted with children of four years and older, since younger children often experience difficulties in telling a story from pictures (Emslie & Stevenson, 1981; Wigglesworth, 1990). However, children acquiring Dutch, English and French are using determiners, pronouns and proper names already at two years-of-age (§3.2). Therefore, the investigation of the interaction between the morphosyntax and pragmatics of reference can and should also start around this age.

A few studies have examined sensitivity to new/given in discourse between the ages of two and three in children acquiring English (Bennett-Kastor, 1983; Peterson & Dodsworth, 1991; Peterson, 1993). Children’s narrations of personal experiences have been investigated in these studies, since this is seen as a more accessible task than picture based-narratives to such young children. These studies demonstrate that in a more natural situation two- to three-year-olds are already quite capable of appropriate reference. Peterson (1993) showed that about 80% of the discourse-new nouns and pronouns were referentially unproblematic in a group of two-year-olds (mean age 2;3). Interestingly, the two-year-olds did not perform worse on introducing referents to discourse than older children aged four to nine. Moreover, already 90% of the nouns and pronouns that were mentioned for the second time could be unambiguously linked to discourse-given referents in the language of the two-year-olds. Unfortunately, Peterson (1993) does not give information about the specific determiner forms that the children in her study used. It is therefore not clear to what extent the children were able to use different determiner types and pronouns appropriately in relation to the pragmatic factor of givenness. A study by Bennett-Kastor (1983) gives more insight into this issue. She had two- and three-year-old children (three children per group) tell personal narratives or retell stories. The results showed that the two- and three-year-olds used mostly indefinite nouns for discourse-new referents. Definite nouns and pronouns were also used, but to a lesser extent than indefinites. For given referents, the opposite pattern was found: the children preferred definite nouns and pronouns and hardly used indefinite nouns. In narrations of personal experiences two- and three-year-old children acquiring English are thus able to use both different determiner types and pronouns appropriately according to the new/given distinction in discourse.

The findings of studies based on narrations are very valuable, but they do not give enough insight into the acquisition of reference for three reasons. First, these
studies do not only investigate the children’s sensitivity to pragmatic factors in reference, but also children’s increasing ability to narrate a story. Wigglesworth (1990) found that several factors, such as story length and complexity, picture boundaries, number of protagonists and the degree of animacy of the protagonists, influence the choice of referential forms by children as well as by adults. Children’s sensitivity to pragmatic factors in reference might therefore be underestimated, because they are influenced by the intrinsic properties of the cognitively complex task of narrating a story as a monologue. In contrast, a conversation is an interactive process, in which the participants build up the representation of referents together, thereby sharing some of the processing load. Moreover, the cognitive status of referents can be negotiated between the interlocutors (Garrod & Pickering, 2004; Smith, Pat Noda, Andrews & Jucker, 2005). It is thus plausible that in interaction, children already show sophisticated referential skills at an earlier age. This assumption is empirically supported by results from Roelofs (1998). She demonstrated that Dutch children between age four and eight showed improved skills in taking the listener’s perspective in a conversation compared to an elicited narration. A second limitation is that the studies with two- and three-year-olds (e.g. Bennett-Kastor, 1983; Peterson, 1993) have only focused on the new/given distinction. It has been shown in §2.4.1 that the pragmatic factors of specificity and familiarity also influence the choice of referential expressions and it is important to study how sensitivity to these factors develops. Finally, these earlier studies do not make sufficiently clear how the morphosyntax and pragmatics of reference are connected to each other in development. That is, does earlier acquisition of a particular morphosyntactic form also lead to earlier appropriate pragmatic use of that form? Just a few studies have focussed on the joint acquisition of the morphosyntax and pragmatics of reference. In the following discussion, I will report on studies that investigated children’s sensitivity to the referent’s specificity, givenness in discourse and familiarity to the listener (§2.3) when children were in the process of acquiring the referential expressions of their native language.

Results from experiments suggest that children’s sensitivity to the non-specific/specific distinction in determiner use develops early. English-speaking children are able to apply this distinction in comprehension as well as in production already at three years-of-age (Maratsos, 1976; Schaeffer & Matthewson, 2005). Karmiloff-Smith (1979) found that three-year-old French children interpreted nouns with an indefinite determiner as referring to non-specific entities and
nouns with a definite determiner as referring to specific entities, but they did not make this distinction as clearly in language production. However, as Schaeffer and Matthewson (2005) argue, these results might have been influenced by the experimental setting. Abu-Akel and Bailey (2000) claim that the non-specific/specific distinction is already made at age two in the spontaneous speech of children acquiring English. Their subjects used more indefinite than definite determiners in non-specific reference. A similar result is reported by Brown (1973). Interestingly, his data indicate that this sensitivity goes together with language development and not strictly with age. The child that acquires language fastest of the three, Eve, uses indefinite determiners for non-specific reference already at 2;3, whereas the slowest developing child, Sarah, only does so by 3;8.

Sensitivity to the non-specific/specific distinction might thus be related to the speed of acquisition of the referential device that expresses specificity in the target language. Evidence for this suggestion comes from Russian, a language without articles. In adult Russian, specificity is encoded by means of word order. Avrutin and Brun (2001) have shown that children acquiring Russian make a difference between non-specific/specific reference already between 1;7 and 2;3. On the basis of the earlier finding discussed here, it can be expected that sensitivity to the non-specific/specific distinction develops between the ages of two and three in Dutch, English and French and that children start to apply this distinction as soon as the relevant referential expressions (i.e. indefinite determiners) have become available in language production.

The choice for a particular referential expression is also influenced by whether the referent has already been mentioned in the discourse (new/given distinction, §2.3). Nouns with an indefinite determiner are inappropriate for given referents and adults prefer pronouns, which indicate easy accessibility, to proper names and nouns (§2.4.1). As has been described in §2.3, children are able to distinguish new from given outside the realm of language well before two years-of-age. Studies on preferred argument structure in several languages (e.g. English, Italian, Japanese, Korean) have shown that two-year-old children’s selection of linguistic elements is governed by the new/given distinction, although they do not necessarily display an adult pattern of form-function combinations. At this age, children tend to drop subjects and objects when they are given but use full (nominal or pronominal) forms for new referents (Baker & Greenfield, 1988; Clancy, 1997; Campbell, Brooks & Tomasello, 2000; Serratrice, Sorace & Paoli, 2004; O’Neill, 2005; Serratrice, 2005; Guerriero, Oshima-Takane & Kuriyama, 2006). These findings indicate
that young children distinguish between new and given in expressing referents overtly or not. However, as children’s utterances get longer, they include both new and given information (Baker & Greenfield, 1988; Clark, 2003). The question is whether children then apply the new/given distinction to different types of overt forms. There is some evidence that English-speaking children do so. Bennett-Kastor (1983) found that two- and three-year-old children acquiring English distinguish between new/given in discourse in determiner use. Campbell, Brooks and Tomasello (2000) found that two groups of children, mean ages 2;6 and 3;6, used more (zero) pronouns and fewer nouns in answering questions that contained a reference to the target entity. If the referent was not mentioned in the preceding question, the children used more nouns. Children around age 2;0 do not yet show this sensitivity (Wittek & Tomasello, 2005; Guerriero et al., 2006; Matthews, Lieven, Theakston & Tomasello, 2006). The new/given distinction in the use of pronouns versus nouns thus appears to develop between two- and three years-of-age. Initially, children underestimate the accessibility of referents to the hearer and often use referential expressions for given referents that signal lower cognitive status (Gundel, Ntelitheos & Kowalsky, 2007). The current study hopes to clarify the course of this development by tracking children’s sensitivity to the new/given distinction in longitudinal data from the same children. Sensitivity to givenness in the use of different forms, that is, nouns with different types of determiners and pronouns, will also be investigated.

The assumed familiarity of the referent to the hearer plays a role in the choice of referential expressions for discourse-new entities. Familiarity can be based on shared or world knowledge (\(\text{mk/nmk\text{-}distinction}\)), which affects determiner choice, or on physical presence/absence of the referent (\(\text{exp/end}\)), which affects the possibility of using pronouns as opposed to nouns or proper names (§2.3 and §2.4.1). There are only few studies that have investigated whether the choice of referential expressions by young children reflects the appropriate perspective of the listener. The reason for this is probably that studies on narratives in various languages have found that six- to eight-year-old children still have trouble in taking account of the listener’s perspective in determiner use: they use too many definite determiners in \(\text{nmk\text{-}reference}\) (e.g. Kail & Hickmann, 1992). Younger children are therefore generally expected to also make this error. This expectation is strengthened by the fact that the development of a full Theory of Mind, which is related to perspective taking, continues easily past age four (Perner & Leekam, 1986; Ruffman & Perner, 2005).
Some very early sensitivity to the listener’s needs in language use has, however, also been reported. O’Neill investigated two-year-old children’s use of gestures and language as a function of listener’s knowledge in an experimental setting. She devised a game in which children had to ask their parent for help in obtaining a toy placed on a high shelf. The children used more informative means of communication (both verbally and deictically), if the parent was out of the room when the toy was moved to the high shelf than when the parent had seen the movement. Thus, children appear to tailor their request to whether there was mutual knowledge about the toy’s location or not. Whether or not young children can apply this sensitivity to determiner use will be investigated in this study. Results on Dutch from Roelofs (1998: 149) suggest that some development in this area takes place before the age of four. She found evidence for some sensitivity to $mk/\overline{mk}$ in conversations at this age, although the children still made many errors.

The physical presence of a discourse-new referent gives the speaker the possibility of using a pronoun in reference, at least if there is joint attention between speaker and hearer for this referent. If the referent is absent, a nominal form or proper name must be used to give the listener enough information to identify the referent. Children’s sensitivity to this aspect of the listener’s perspective seems to be developing until at least four to six years-of-age, just as $mk/n\overline{mk}$. For instance, Matthews et al. (2006) found that the choice of pronouns versus nouns in a group of English two-year-olds (mean age 2;6) was not affected by whether or not the hearer could see the referent. These children used many (zero-) pronouns, which are inappropriate in that context. In contrast, the three- and four-year-olds in the study did distinguish between the two situations. They used pronouns or zero forms appropriately if the listener had visual access to the referent. More informative forms, for example full nouns, were used when the listener could not see the referent, although the use of inappropriate forms did also occur at these ages. In line with these findings, Künnyay and Özyürek (2006) found that Turkish children of four and six years have difficulties in the appropriate use of a demonstrative pronoun that indicates the absence of the listener’s visual attention for the referent. Children in both age groups also use this form if the listener is attending to the referent. In sum, young children are sensitive to the interlocutor’s familiarity with the referent to some extent, but they seem to have difficulties in applying this sensitivity in both determiner and pronoun use. Whether the pragmatic factor of listener’s perspective really develops in parallel in the use of these morphosyntactic forms has not yet been investigated. This issue will be addressed in this study.
The role of the input in the acquisition of reference has not been very widely studied. The interaction between morphosyntax and pragmatics with respect to reference has been investigated in many languages (various Indo-European languages, but also Turkish, Korean, Japanese etc.). However, very few studies have directly compared children’s reference in a cross-linguistic design. Hickmann (2003) found some language-specific influences on the application of morphosyntactic forms to pragmatic functions for children acquiring English, French, German and Chinese. Unfortunately, the youngest children in Hickmann’s study were already four years-of-age and had almost fully acquired the adult structures. Evidence for language-specific influence in younger children was found by Guerriero et al. (2006). They investigated the use of zero forms, pronouns and full nouns for new and given referents in two children acquiring English and two children acquiring Japanese between 1;5 and 3;0. They found close similarity between the children’s pattern of linguistic reference and that of their mothers. Already at 2;0-2;6, the English children used many overt pronouns for given referents, whereas the Japanese children preferred zero forms. Guerriero et al. (2006) also found evidence for the influence of consistency of form-function patterns in the input (§1.2.2). The input of the English mothers was more consistent in the distribution of forms over new versus given referents than the input of the Japanese mothers. Strikingly, this inconsistency was reproduced in the language of the Japanese children. Küntay and Özyürek (2006) suggest that the frequency of pragmatic functions might also play a role in acquisition. They found that the demonstrative pronoun, which indicates absence of the listener’s visual attention for the referent (see above), was less frequently used in the input than two other demonstratives, which only mark spatial dimensions. They conclude that children receive inadequate opportunities to figure out the subtleties for using the demonstrative, which calls for perspective taking skills. The influence of language-specific patterns, cue frequency and cue consistency on the acquisition of reference will be further investigated in the current study.

To conclude, the present section shows that there are many studies that have focused on the acquisition of reference both in narratives, spontaneous speech and in experiments. Moreover, children’s sensitivity to different pragmatic factors has been investigated as well as their use of determiners and pronouns for different pragmatic functions. There are, however, also questions that remain to be answered. These will be addressed in the next section, where the focus of the current study is presented.
3.5 Research questions

The research on the acquisition of referential expressions has shown that children acquiring Dutch, English and French start to use determiners, pronouns and proper names around two years-of-age (§3.2). At this age, children have also acquired the general socio-cognitive skills that are useful for distinguishing non-specific and specific reference and new from given in discourse (§3.3). There is evidence that children are sensitive to these distinctions in linguistic reference already by age three. Sensitivity to the familiarity of the referent to the hearer appears to develop later, around or past age four (§3.4). There is some evidence for the influence of the input on children’s use of language-specific form-function patterns and on the speed of form-function acquisition, but the research in this area is limited. Although we can sketch a general pattern of the acquisition of reference, many questions have remained unanswered. The current research aims to shed more light on the early interaction between morphosyntax and pragmatics in the acquisition of reference. This study will therefore explore young children’s sensitivity to the three pragmatic factors of (1) referent specificity (2) givenness in discourse and (3) familiarity to the listener (§2.3), leading to the first, general Research Question A.

A. Do children acquiring Dutch, English or French distinguish between non-specific/specific reference, new/given in discourse and familiarity of discourse-new referents to the listener in their use of nouns with different types of determiners and in their use of pronouns as opposed to nouns or proper names?

Previous studies mostly used an experimental or cross-sectional design. The current study will use longitudinal data from children acquiring Dutch, English or French (§4.2). This makes it possible to investigate the development of sensitivity to these pragmatic factors in the same group of children. An important issue is, whether the children are able to relate pragmatic factors for which the cognitive basis is assumed to be already present (i.e. specificity and givenness, §3.3) to referential expressions once the morphosyntactic forms are productively used. The results discussed in §3.4 indicate that this is the case with respect to specificity (Brown, 1973). However, sensitivity to givenness in reference appears to develop between ages two and three (e.g. Wittek & Tomasello, 2005). The socio-cognitive skills that are necessary to appropriately take account of the perspective of the listener are still developing in two-year-old children. The question then rises
whether acquisition of the relevant morphosyntactic forms might even trigger children’s sensitivity to pragmatic factors in reference. There is some evidence for this position from the study of ToM-development in deaf children. De Villiers (2005) argues for a strong causal role of language in the development of ToM, since deaf children with delayed language acquisition are also delayed in their ToM-development. The current study will investigate whether sensitivity to pragmatic factors develops in close association to the acquisition of morphosyntactic forms. To this end, possible differences between the languages in speed of determiner development will be used (§3.2.1.4), leading to Research Question B:

B. Do differences in the speed of acquisition of determiners influence the sensitivity to pragmatic factors in determiner use by children acquiring Dutch, English or French?

There would be evidence for the close association of morphosyntax and pragmatics in development, if children with different ages, but equal levels of determiner production, show similar sensitivity to the pragmatic factors. This result would be most consistent with a non-modular model of language acquisition, since these models allow for interaction between different linguistic areas in development (§1.2.4).

The influence of the input on the interaction between morphosyntax and pragmatics in the acquisition of reference has only been investigated marginally in previous studies. This study will investigate whether children are influenced by language-specific form-function patterns in the input (§2.4.2). Another important issue is to what extent the frequency and consistency of form-function combinations in the input play a role in acquisition. To explore the role of the input, Research Question C is formulated. Influence of the input on the acquisition of reference would be consistent with the constructivist or usage-based theory of language acquisition (Tomasello, 2003, §1.2.2).

C. What is the influence of the input on the acquisition of form-function combinations in terms of language-specific patterns and speed of acquisition in children acquiring Dutch, English or French?

Finally, the results of earlier research are rather scattered with respect to the different morphosyntactic forms that have been investigated. Some authors have
focused on zero forms versus full forms, others on nouns versus pronouns and again others on different types of determiners. It is not clear whether children’s sensitivity to a particular pragmatic factor develops in parallel in their use of different morphosyntactic forms or in a more piecemeal, form-by-form fashion, whereby children will show sensitivity to a pragmatic factor in their use of one type of form, but not in the other (§1.2.3). This issue is addressed in Research Question D. Piecemeal development would again be most consistent with a constructivist perspective on language acquisition, especially if the form-by-form acquisition can be related to the frequency and consistency of form-function combinations in the input (§1.2.2).

D. *Do children show the same levels of sensitivity to a pragmatic factor in determiner use as compared to pronoun use?*

The methodology used to investigate these research questions is presented in the next chapter: selection of subjects, data selection and criteria for coding.