The Acquisition of Compositional Definiteness in Norwegian

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Abstract

This paper aims to explain why the prenominal definiteness marker found in modified structures is acquired much later than the suffixal definite article in Norwegian. The coexistence of the two definiteness markers is the result of the double definiteness phenomenon in Norwegian, which occurs in definite structures involving an attributive adjective. A lexical insertion approach to the double definiteness phenomenon is proposed, according to which the discrepancy in the order of acquisition is argued to be due to the way semantic features are lexicalized in Norwegian.

Introduction

The Scandinavian languages exhibit some interesting variation with regard to the marking of definite noun phrases. In simple unmodified structures, all the Scandinavian varieties make use of a simple suffixal article, as illustrated by the Norwegian example in (1). [2]

(1)　Hus　-**e**　　　　　　　　　　　　　　(Norwegian)
　　　house-the.NEU
　　　the house

In modified definites, however, there is a great deal of variation. This is illustrated by the examples in (2).

(2)　a.　**Det**　gaml-e　hus　-**e**　　　　　　(Norwegian)
　　　　　the.NEU　old　-WE house-the.NEU
　　　　　the old house

　　　b.　　　　gaml-a　hús　-**ið**　　　　　　(Icelandic)

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[2] Gender will be abbreviated as NEUter, MASculine and FEMinine. Plural will be marked PL, while singular will generally not be marked, but will be taken as default. In addition, adjectives in the weak form are marked by an invariant -*e*, glossed WEak.

     c.   **Det**   gaml-e   hus   (Danish)

As the above examples illustrate, the pan-Scandinavian variation follows an interesting pattern in these structures. In some varieties (2a), here represented by Norwegian, there is a pre-nominal (pre-adjectival) and a suffixal determiner, while in others either only the pre-nominal (Danish, 2c) or the suffixal determiner (Icelandic, 2b) is present. The Norwegian alternative, in which there are two determiners present, is frequently referred to as involving 'double definiteness' or 'double determination'. In recent years several studies have aimed to provide an account of the variation found among the Scandinavian languages, with a great deal of focus placed on integrating the double definiteness phenomenon into the analyses (see e.g. Taraldsen, 1990, Delsing, 1993, Kester, 1993, 1996, Santelmann, 1993, Svenonius, 1994, Vangsnes, 1999, Julien, 2002, 2005, Anderssen, 2005). The view has emerged that definiteness in these languages should be regarded as compositional rather than doubly marked.

This paper explores the acquisition of what will here be argued to be compositional definiteness in Norwegian. As we will see, there is a great deal of difference with regard to the acquisition of the two determiners; the suffixal determiner is acquired early while the prenominal determiner is acquired late, and as a result, children end up producing what looks like Icelandic structures. A few relevant examples are provided in (3).

(3)   a.   Der er   **Ø**   **lille**   **barn-e**.   (Ann.03, 1;10.2)
           there is   *little*.WE   *child-the*.NEU

    b.   **Ø**   **stor-e**   **mann-n**.   (Ole.03, 1;10.22)
                 big -WE   *mann-the*.MAS

    c.   **Ø**   **stor-e**   **troll-e**.   (Ina.06, 2;1.0)
                 big -WE *troll-the*.NEU

This paper aims to provide an analysis of Scandinavian definites that can explain the cross-linguistic variation among the Scandinavian languages and that can account for the preference for Icelandic structures in child Norwegian.

The paper is organized as follows: First a brief discussion of the localization of definiteness within a compositional approach to Scandinavian DPs is given, in which it is argued that it is the high position that expresses definiteness proper, while the low position spells out specificity. Next a lexical insertion approach to DP is proposed in which the Scandinavian languages lexicalize definiteness in different ways. Finally the acquisition data are considered in light of this proposal, and it is argued that due to a combination of the early acquisition of the definite suffix and the late acquisition of adjectives, Norwegian children start out

with a lexicalization of definiteness that is equivalent to the Icelandic one. In addition, the Icelandic lexicalization is the 'easiest', because it involves a one-to-one mapping of lexical items and semantic categories.

Double definiteness and the locus of definiteness

Through the years, a number of analyses have been proposed to account for the so-called double definiteness phenomenon, and various insights have been gained through these investigations. For example, Taraldsen (1990) argues that there must be two determiner projections in the Scandinavian languages, one above and one below the adjectival projections, because the two determiners in so-called double definiteness languages are not in complimentary distribution. This assumption can be extended to the other varieties as well from the point of view that even in varieties where the two determiners do not co-occur, it is the case that the suffixal article never occurs pre-adjectivally, while the free determiner never occurs postnominally. The assumption that there are (at least) two determiner type projections in the Scandinavian languages is now more or less uncontroversial and is incorporated into most analyses (e.g. Vangsnes, 1999, Julien, 2002, 2005, Anderssen, 2005). The prenominal determiner is taken to occur high in the structure, above the adjectival projection(s), while the suffixal article is taken to be low, below any adjectives.

On the assumption that there are two determiner projections in Scandinavian DPs, the question arises which one of them carries definiteness. Traditionally, there has been a tendency to assume that it is the suffixal article that contributes to the interpretation of definiteness (see e.g. Delsing, 1993, and Julien, 2002). One reason for this is that this marker is always present in definite noun phrases (as in 1), while the prenominal determiner only occurs in the modified structures (2a). This view was argued for in Delsing (1993) on the basis of the distinction in (4a) and (4b):

(4)   a.   Det   finnes ikke **den minste grunn** til å betvile dette.
            there exists not the least   reason to to doubt   this
            there isn't the slightest reason to doubt this

        b.   *Det   finnes ikke **den minste grunn -en** til å betvile dette.
             there exists not the least   reason-the to to doubt   this
            there isn't the slightest reason to doubt this

In both cases the bold noun phrases occur in existential constructions, which exhibit a strong definiteness effect in Norwegian, but it is only the sentence in which the definite suffix is present that what looks like a definite noun phrase is ungrammatical. Thus, Delsing argues, it must be the suffix that makes the noun phrase definite. However, the fact that the

English translation also includes the definite article and is acceptable suggests that this conclusion is too hasty.

In the present paper, both determiners will be taken to contribute to the interpretation of definiteness, hence the reference to compositional definiteness in the title. However, it is the high determiner that will be argued to make the main contribution to the definite interpretation by adding uniqueness to the noun phrase, while the (low) suffixal article will be proposed to add specificity. Uniqueness is here taken to refer to a referent that is familiar and identifiable to the listener ([+hearer]), while specificity is used to refer to a referent that is familiar and identifiable to the speaker ([+speaker]), which means that the former element is the one that is taken to indicate discourse familiarity. It is this combination of uniqueness and specificity which together make up definiteness. The identification of the high determiner as the main contributor to definiteness comes from the observation that when two modified definite noun phrases (that may be co-referential) are coordinated, it is the prenominal determiners that determine whether reference is to one or two persons (Anders Holmberg p.c.). This is demonstrated in (5).

(5) **Den** unge professor-n   og (**den**) omsorgfulle far   -n
     the young professor -the and (the) caring   father-the
     the young professor and (the) caring father

When the second prenominal determiner (in brackets) is present, the noun phrase uniquely identifies two referents, while when it is absent, only one referent is picked out, equivalent to the situation found in the English translation of the example. This suggests that the prenominal article is the main contributor to the definite interpretation. However, unmodified definite noun phrases are also definite and pick out unique referents. So uniqueness is clearly represented in these nominals as well, which suggests that the suffixal article somehow expresses uniqueness in simple DPs.

The uniqueness feature associated with the high determiner is taken to be lexicalized not only by this determiner, but also by pronouns, which share the characteristic with definites that they presuppose that the relevant referent is familiar to the hearer (i.e. [+hearer]) and unique.[3] Consequently, the idea that pronouns are essentially nounless determiners, first expressed in Postal (1970) and elaborated on in various ways in Radford (1993) and Lyons (1999), will be adopted here. The basic observation is that there is a great deal of lexical overlap between pronouns and determiners. This is

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[3] It should be noted at this point that, while the familiarity and uniqueness requirement attributed to pronouns here generally applies, there are a number of contexts in which it does not.

also the case with the pre-nominal definite determiner; the neuter form of the determiner, *det*, doubles as the neuter third person pronoun and demonstrative, while the masculine and feminine form, *den*, doubles as the masculine and feminine third person inanimate pronoun and as the third person masculine and feminine demonstrative. This is illustrated in (6), where (6a) should be read as a question and (6b) as its answer:

(6) a.   Hvor fikk du tak i **den** fine bil-en?   (Norwegian)
          where got you hold in the.M/F nice car-the
          where did you get hold of the nice car

     b.   Jeg kjøpte **den**   (Norwegian)
          I bought it
          I bought it

In the dialect of Norwegian that the child language study investigates, a further example of lexical overlap between pronouns and determiners can be found with names and kinship terms. In the Tromsø dialect, these types of nouns are preceded by articles, and these articles take the same shape as personal pronouns. This is illustrated in (7).

(7) **Ho** (snille) Sunniva/ **han** (snille) Markus   (North Norwegian)
     she kind Sunniva/ he   kind Markus
     (kind) Sunniva/(kind) Markus

These types of articles have since Longobardi (1994) been referred to as expletive articles and are generally seen as devoid of any semantic content. In the present paper, they will be seen as spelling out a uniqueness feature just like other pre-nominal definite determiners, and will consequently be referred to as proprial rather than expletive articles (following Delsing, 1993).

Another argument for the assumption that pronouns are a type of determiner comes from the observation that pronouns can be used as determiners in a limited way in a number of languages (see e.g. Lyons, 1999). A relevant example is given in (8).

(8) **You** psychologists often criticize **us** linguists.

As the pre-nominal determiner is taken to make the main contribution to the interpretation of definites, it is clear that the contribution of the suffixal determiner must be somewhat less important, and it has already been mentioned that the relevant category will be proposed to be specificity. The distinction between specific and non-specific nominals is one that is usually associated with indefinites and is used to account for the distinction between (9a) and (9b) and the ambiguity in the interpretation of the nominal in (9c).

(9)   a.   I saw **a monkey** in the zoo today. **It** was really funny.

        b.   Pass me **a hammer**. #**It** is behind you.

        c.   I am looking for **a book**. **It** was on the table/#**it** is about art.

Generally speaking, a nominal is regarded as specific when the speaker has a specific referent in mind, while in the non-specific case, the speaker has no specific referent in mind and reference is to a type of object rather than to a token. This notion of specificity originates in Fodor and Sag (1982). The example in (9a) makes reference to a specific token, namely a specific monkey that the speaker saw in the zoo, while the one in (9b) does not; it refers to a type of object rather than a specific instantiation of that object. The intentional context in (9c) yields an ambiguous interpretation of the indefinite noun phrase, where reference is either to a specific book that the speaker has in mind, or to any object that fits the description *book*. Vangsnes (1999) suggests that being specific is equivalent to "having an ordinary discourse referent" (Vangsnes, 1999: 37). This means that specific noun phrases establish the existence of a referent, and as such can be referred back to by a pronoun. The examples in (9) illustrate this; the specific indefinite in (9a) can be referred back to by a pronoun, while the non-specific referent in (9b) cannot. The ambiguous example in (9c) can be referred back to by a pronoun only if *a book* is interpreted as specifically referring (for example, if it is the one that was on the table just now). On the interpretation *I am looking for any book*, however, it cannot, because no anaphoric referent has been established.

    Now let us briefly turn to the question of how the definite suffix can be said to express specificity. It is clear that if this is the case, it is only true in modified structures, as simple structures also involve uniqueness but no prenominal determiner. However, modified definites are precisely the contexts that can be used to try to tease apart the semantic contribution of the two determiners. Consider the example in (10).

(10)   a. Æ spiste ikke **[den minste bit]**$_i$ av kaka.   # **Den**$_i$ spiste han Derek.
         I ate   not   the least   bit of cake   it   ate   he Derek
        I didn't even eat a small slice of the cake. It was eaten by Derek.

        b. Æ spiste ikke **[den minste bit-n]**$_i$ av kaka. **Den**$_i$ spiste han Derek.
         I ate not   the least   bit-the of cake   it   ate   he Derek
        I didn't eat the smallest slice of the cake. It was eaten by Derek.

In the above examples, we can see that in (10a), where the suffix is omitted, no referent is established, while in (10b), where it is present, a referent is established. For arguments for the idea that the suffixal article spells out specificity, see Anderssen (2005) and Julien (2005).

Double definiteness as feature 'straddling'

So far we have seen that there is reason to believe that the prenominal determiner spells out uniqueness, while the definite suffix spells out specificity in modified structures. In simple, unmodified structures, however, the suffixal article expresses both specificity and uniqueness. Intuitively, this appears to be a situation which can be described as one in which the definite suffix seems to be prevented from spelling out uniqueness in modified structures. This intuition fits well with one of the predominant ways of accounting for the double definiteness phenomenon. In a number of accounts, the occurrence of the pre-nominal determiner is explained as a result of the adjective blocking the movement of the lower determiner past it (cf. e.g. Delsing, 1993; Vangsnes, 1999; Julien, 2002, 2005). In the present work this intuition will be expressed within a lexical insertion account rather than a movement account.

From the examples in the introduction and the above discussion of the distribution of definiteness, it would appear that modified definites in Norwegian could be given the following simplified representation:

(11)   **DP1** [uniqueness] > adjective > **DP2** [specificity] > NP

From this perspective, double definiteness could be seen as an adjacency problem. The phenomenon arises when the two determiners that we have suggested carry uniqueness, and specificity features are separated by the adjectival projection.

Since Pollock (1989), it has become increasingly clear that the division of clauses into VP, IP and CP is too coarse, and that these projections should be split up into smaller components. Similar approaches have been taken to DP structure. This development has resulted in a proliferation of functional structure, and various attempts have been made to characterize the ordering restrictions that appear to apply to these elements. One relevant example is Cinque's (1994; 1999) adverbial and adjectival hierarchies based on ordered semantic categories, which have been embellished on and expanded by various people. It has also been suggested that cross-linguistic variation can be attributed to whether certain projections are split up into more fine-grained structures or not. This has been suggested for IP (e.g. Thráinsson, 1996 and Bobaljik and Thráinsson, 1998). According to these works, a language like Icelandic, which has both agreement and tense marking, can be assumed to have a split IP (TP and AgrP), while languages like English or Norwegian, which only have tense morphology, can be assumed only to have IP.

Starke (2004/2005) proposes an alternative version of functional hierarchies that can also accommodate cross-linguistic variation of this

kind. According to Starke, the functional hierarchy is a universal ordered sequence of features. Rather than assuming that languages vary according to whether they split certain projections or not, he proposes that linguistic variation can be attributed to how many features, that is, how many (functional) heads, a lexical item "covers" when it is inserted into the functional sequence. On such assumptions, the difference between Icelandic and English is not that IP is split into two projections in one language but not in the other, but rather that Icelandic has two lexical elements spelling out one feature each where English has one word spanning two features. In the context of the double definiteness phenomenon, where a language has more than one determiner, this variation is found within one and the same language. Certain features in the nominal domain that are syncretised into one lexical item in unmodified structures have separate realizations in modified structures. On the assumption that the semantic features that we have postulated to be associated with the high and low determiner projections are correct and that the sequence proposed in (11) is along the right track, it appears that the two features are located on separate sides of the adjectival projection. When there is no adjective present, one lexical item (the definite suffix) can spell out both heads, but when an adjective intervenes between the two heads, the prenominal determiner must be included to spell out the uniqueness feature. This is illustrated in the simplified structures below:

(12)
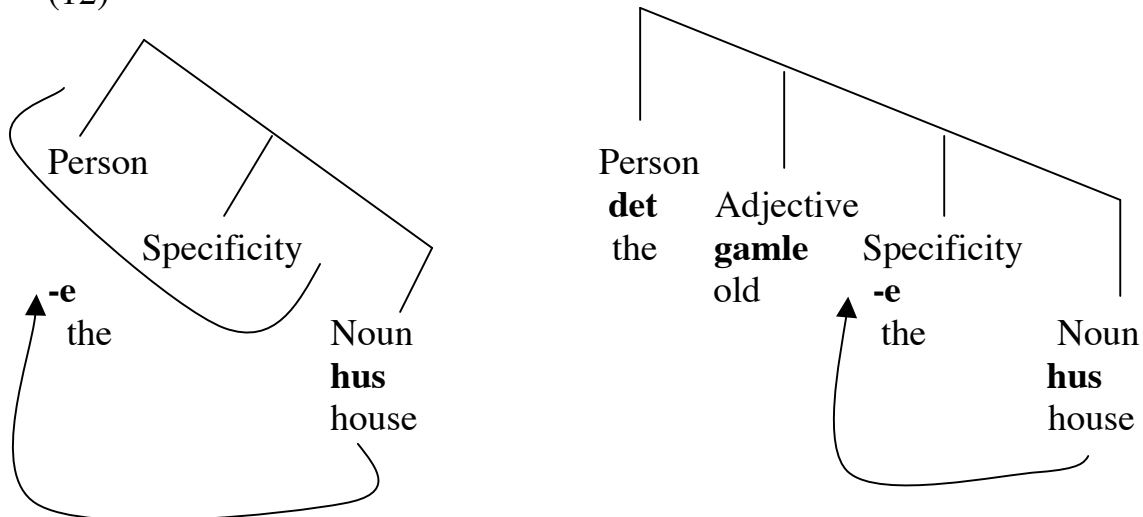
On the assumption that pronouns generally spell out both uniqueness and specificity, the lexicalization of uniqueness and specificity in Norwegian can be represented as in (13):

(13) **Norwegian: Det. Adj. Noun-dx**
Pronouns   [Uniqueness.....Specificity]
Determiners [Uniqueness] (realized as *den/det/de*)
-dx   [(Uniqueness).....Specificity] (realized as *-e/-a/-(e)n*)

If the observations made about Norwegian are along the right track, this means that the presence of an overt prenominal definite determiner in modified structures suggests that the language has a "big" definite suffix that straddles both uniqueness and specificity in the unmodified case, and two separate lexical items in the modified structures. On such assumptions, Danish is like Norwegian because there is a difference between modified and unmodified structures. The only difference between the two is that the lexicalization of specificity in modified structures has no phonological spell out in Danish. The lexicalization of Danish is provided in (14):

(14) **Danish: Det. Adj. Noun**
Pronouns   [Uniqueness.....Specificity]
Determiners [Uniqueness] (realized as *den/det/de*)
-dx1   [Uniqueness.....Specificity] (realized as *-et/-en*)
-dx2   [Specificity] (always phonologically zero)

Icelandic, however, really is different from Norwegian in the sense that modified and unmodified structures essentially look the same. In both cases, definiteness is marked by a suffixal article. This is taken as an indication that the spell-out of uniqueness and specificity is the same in both modified and unmodified structures, which again suggests that uniqueness always has a zero phonological spell-out in Icelandic. Consider the representation in (15):

 (15) **Icelandic: Adj. Noun-dx**
Pronouns   [Uniqueness.....Specificity]
Determiners [Uniqueness] (usually phonologically zero)
-dx   [Specificity]

When stated in these terms, Icelandic intuitively seems to be the "easiest" option because the lexicalization of uniqueness and specificity is the same in simple and modified structures. This might take us some way towards explaining the predominance of 'Icelandic' modified structures in child Norwegian.

The acquisition of compositional definiteness

The aim of this paper is to provide an explanation for the prolonged omission of the prenominal definite determiner in Norwegian child

language. This question clearly interacts with a more general issue in Scandinavian syntax, namely that of double definiteness, and the question of how modified definites should be analyzed. So far an analysis of adult Norwegian has been proposed, according to which there is assumed to be a universal functional sequence in which the definite suffix spells out specificity and the prenominal determiner spells out uniqueness in modified structures, while the suffixal article expresses both uniqueness and specificity in simple structures. In Icelandic, however, uniqueness and specificity are always spelled out by separate lexical items, and the pre-adjectival determiner has a zero spell out. It has also been suggested that the Icelandic lexicalization of these features might be the simplest one, as it has a consistent one-to-one mapping between semantic features and lexical items. In this section, the question of how such a (non-target) mapping could come about in Norwegian child language will be addressed. First, a brief overview of the acquisition of the definite suffix will be provided. Then the same will be done for the prenominal definite determiner. As a parallel has been drawn between prenominal definite determiners and pronouns, it is relevant to also consider the acquisition of pronouns in this context.

The data examined in this study come from two girls, Ina and Ann, and a boy, Ole, growing up in Tromsø, Norway. Recordings were made when the children were between the ages of 1;8.20 and 3;3.18 (approx. 47,000 utterances, Anderssen 2005). However, the study of the acquisition of simple definites is a case study and focuses on one of these children, Ina, whose corpus includes a total of just over 20, 000 utterances.

The acquisition of the definite suffix

The definite suffix is acquired early in Norwegian (Anderssen 2005) and Swedish (Plunkett and Strömqvist 1990; Santelmann 1998; Bohnacker 2004). Consider (16) below:

(16) Building a lego car: *Ina.01 (1;8.20)*

*INA: æ bygge.
            I build
*MOT: skal   du bygge?
            shall you build
            are you going to build something?

*MOT: bygge bil?
              build car

*INA: **datt bil-æ** [= def sing].   (TARGET: Der datt **bil-n**)
              fell car-the   (TARGET:there fell car-the.MAS)

The acquisition of the definite suffix is illustrated in more detail in Table 1, which displays the number and proportion of definite nouns and illegitimate, bare nouns in definite contexts.

Table 1. Nouns in definite contexts in Ina's files according to whether they include the definite suffix or not.

File	N-def (%)	*Bare	Tot	File	N-def (%)	*Bare	Tot
1	8 (66.7)	4	12	15	31 (93.9)	2	33
2	14 (46.7)	16	30	16	58 (78.4)	16	74
3	21 (46.7)	24	45	17	82 (96.5)	3	85
4	48 (60)	32	80	18	289 (94.4)	17	306
5	64 (82.1)	14	78	19	139 (95.2)	7	146
6	93 (84.5)	17	110	20	46 (97.9)	1	47
7	57 (86.4)	9	66	21	37 (92.5)	3	40
8	35 (92.1)	3	38	22	53 (85.5)	9	62
9	81 (95.3)	4	85	23	64 (97)	2	66
10	99 (95.2)	5	104	24	43 (95.6)	2	45
11	87 (87.9)	12	99	25	58 (98.3)	1	59
12	45 (76.3)	14	59	26	60 (93.8)	4	64
13	32 (78)	9	41	27	28 (100)	0	28
14	31 (86.1)	5	36	Tot	1703 (87.9)	235 (12.1)	1938

As we can see, as of the fifth file, when Ina is 2;0.5, the rate of article inclusion does not go below 80 per cent (with the exception of files 12 and 13, which are between 75 and 80). So it appears that the definite suffix is acquired very early, certainly if compared to the definiteness marker in languages like English and German. This suggests that there is something about the definite suffix that makes it extremely salient in the input. The question of what it is about this element that makes it so salient in the input will be left aside here (but see Anderssen, 2005, for a proposal). Rather, the question of which part of the functional sequence proposed in (11) and (12) this lexical element spells out and whether the interpretation assigned to this lexical item is equivalent to that in the target language will be considered.

The prenominal determiner

In Norwegian child language, there are several ways in which modified definites could be produced, considering that determiners tend to be omitted in child language. We could imagine that they would involve none of the two determiners, or we could imagine that they would include one determiner only, either the pre-nominal determiner ('Danish') or the suffixal article ('Icelandic'). Finally, they could be target-like and include both the obligatory determiners. All of these options are attested in child language data, but only the last three alternatives in Ina's language.[4]

(17) Ta **den   andre   bit** av.   (Ina.18, age 2;8.12)
       take the.M/F other.WE bit off

(18) Ho har **gul   -e   jakke-n**   på.   (Ina.16, age 2;7.8)
       she has yellow-WE jacket-the.MAS on

(19) **Det   gal   -e   strikk   -e**.   (Ina.11, age 2;4.1)
       the.NEU wrong-WE elastic-band-the.NEU

As mentioned already, the majority of modified definites are of the kind illustrated in (18). This predominance of 'Icelandic' structures is demonstrated by the fact that of the 52 contexts for double definiteness in Ina's files totally, 30 (57.7%) are of the Icelandic type, four (7.7%) are of

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[4] The two children not included in the present study, Ann and Ole, produce a considerable number of bare modified structures. One such example is given in (i) below:

(i)   Æ leke **stor-e   bil** skal kjøre.   (Ole.08, age 2;2.12)
        I play big -WE car shall drive
        I'm playing that the big car is going to drive.

the Danish type and 18 (34.6%) are target-consistent.[5] When these data are considered longitudinally, the general impression is that the prenominal determiner is omitted for a very long time, and it is not possible to discern any development. This could be the result of the low number of occurrences. Consequently, it might be useful to group the files together in stages to consider whether this alters this impression. However, this does not result in any clear indications of any major developmental change either. In fact, even if we add the modified definites produced by the two other children included in the Tromsø corpus and divide the files into stages, this picture remains. This is shown in Table 2, in which the use of the prenominal determiner is represented in two columns, one that gives the proportion of target structures and one that gives the proportion of structures including the prenominal determiner (including non-target, 'Danish' ones).

Table 2. The rate of inclusion (in percentages) of the definite suffix in Ina's files as compared to the prenominal definite determiners in obligatory contexts in Ina's files and in the files of the three children Ann, Ina and Ole (AIO) together.

Stage : Recording	Definite Suffix	Target Mod. Def. (Ina)	Mod. Def. w/ prenom. det. (Ina)	Target Mod. Def. (AIO)	Mod. Def. w/ prenom. det. (AIO)
I (1-5)	63.6	-	-	5.9	5.9
II (6-10)	90.6	40	50	22.6	25.8
III (11-15)	84.3	66.7	66.7	47.1	58.8
IV (16-20)	93.3	35.7	39.3	46.8	51.1
V (21-27)	94.2	18.2	36.4	40	46.7

Thus, it appears that the claim that the prenominal determiner lags behind in acquisition is well founded, and it seems clear that the suffixal article is acquired a lot earlier. However, recall that we proposed in the background section that pronouns lexicalize uniqueness and specificity. Bearing this in mind, and considering that the other elements that lexicalize uniqueness appear so late, it is relevant to look into the acquisition of pronouns as well, because if pronouns can be shown to be acquired much earlier than the

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[5] Even if all the three children are considered, the result is the same with regard to the distribution of structures: 45.7% (64) are of the Icelandic type, 5% (7) are of the Danish type, 13.6% (19) are bare, while 35.7% (50) are target-like. If we compare Ina to the other two children, the only difference is that Ina does not produce bare modified structures, but she produces a few more Danish type structures than the other two.

prenominal definite determiner, this will have to be taken account of when we consider the lexicalization of definite noun phrases as well.

The acquisition of pronouns

Finding a way of "measuring" the acquisition of pronouns is not an easy task, especially when it is going to be compared to the acquisition of the definite article, for which it is possible to give the child's level of competence a number in terms of a percentage of inclusion in obligatory (or appropriate) contexts. One problem involved in describing the acquisition of pronouns is that providing a target percentage of inclusion is not easy. There are a number of ways in which we could imagine postulating a target; for example, we could take the proportion of the totality of noun phrases expressed by pronouns by an adult speaker in a specific file and use this as the target for the child in the same file. This means that the target rate of pronouns would vary from one file to the next. This would be appropriate from the point of view that the proportion of noun phrases that should be expressed by pronouns is probably no more constant than the proportion of noun phrases expressed by e.g. indefinite noun phrases. However, it is not necessarily the case that the proportion of pronouns should be the same in both interlocutors in a conversation. Another way of determining acquisition would be to say that only when the child can be shown to have made use of all combinations of number and person, can s/he be said to have acquired pronouns. However, this way of measuring acquisition makes it impossible to compare the acquisition of pronouns to that of the definite suffix because there is no way of determining degrees of inclusion in obligatory contexts. It would also give a misleading result, because at the relevant stage, only 16.6 per cent of Ina's noun phrases are expressed by personal pronouns, while the average for the two adults that are most frequently present during the recording sessions is 40 per cent.[6] A few examples of the early use of pronouns are given in (20)-(21) below:

(20) *Æ* bygge.   (Ina.01, age 1;8.20)
      I   build

(21) a. *Æ* (s)pise.   b. Der   hoppa *æ*.   c. **Du** kan få gakkgakk.
       I   eat.   *there jumped I*   *you can get quack-quack*
                                                You can have the duck.

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[6] This average is determined based on the proportion of pronouns in the speech of the investigator and Ina's mother in nine of the 27 files distributed between the beginning, middle and end of the recording period.

> d. Se **han**.   e. Ka **ho** har der # ned.i?
> *look him*   *what she has there down-in*
> Look at him.   What does she have down there?
>
> f. Der \<ake\> [?] **dem** bare.
> *there sledge   they only*
> There they are only sledging   (Ina.02, age 1;10.4)

The following strategy was adopted in order to compare the acquisition of pronouns to the acquisition of the definite suffix: From proportions of noun phrases that were expressed by pronouns in the speech of Ina's mother and the investigator in nine files, the average of the last three was used to determine a target proportion, which was found to be 45 per cent.[7] The proportion of noun phrases expressed by pronouns in Ina's files is given in Table 3.

Table 3. The percentage of nominals expressed by pronouns in Ina's files.

File	NPs	PRO (%)	PERS PRO (%)	File	NPs	PRO (%)	PERS PRO (%)	File	NPs	PRO (%)	PERS PRO (%)
1	157	25 (15.9)	1 (0.6)	10	602	330 (54.8)	200 (33.2)	19	1228	757 (61.6)	512 (41.7)
2	205	66 (32.2)	15 (7.3)	11	648	262 (40.4)	154 (23.8)	20	449	253 (56.3)	171 (38.1)
3	245	76 (31)	19 (7.8)	12	609	343 (56.3)	184 (30.2)	21	543	352 (64.8)	206 (37.9)
4	422	145 (34.4)	97 (23)	13	526	271 (51.5)	153 (29.1)	22	848	572 (67.5)	366 (43.2)
5	529	228 (43.1)	159 (30.1)	14	333	181 (54.4)	122 (36.6)	23	788	467 (59.3)	276 (35)
6	733	193 (26.3)	106 (14.5)	15	328	202 (61.6)	138 (42.1)	24	665	422 (63.5)	287 (43.2)
7	355	101 (28.5)	59 (16.6)	16	748	411 (54.9)	338 (45.2)	25	944	646 (68.4)	394 (41.7)
8	149	48 (32.2)	23 (15.4)	17	959	557 (58.1)	344 (35.9)	26	670	482 (71.9)	305 (45.5)
9	691	238 (34.4)	168 (24.3)	18	1641	887 (54.1)	816 (49.7)	27	649	474 (73)	321 (49.5)

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[7] This number does not include the inanimate third person neuter form *det* (it) and the inanimate third person masculine/feminine form *den*, because these forms are homophonous with the demonstrative, and in many cases it is difficult to determine which one it is. However, this is how the numbers were estimated for Ina in Table 3 as well to ensure that the comparison is valid.

Now we are ready to compare the acquisition of pronouns (and uniqueness/definiteness) to that of the definite suffix. In Figure 1, the inclusion of the definite suffix in obligatory contexts is compared to the proportion of noun phrases that are expressed by a personal pronoun (in relation to a hypothetical target of 45%).

Figure 1: The acquisition of pronouns and the definite suffix compared with trendlines
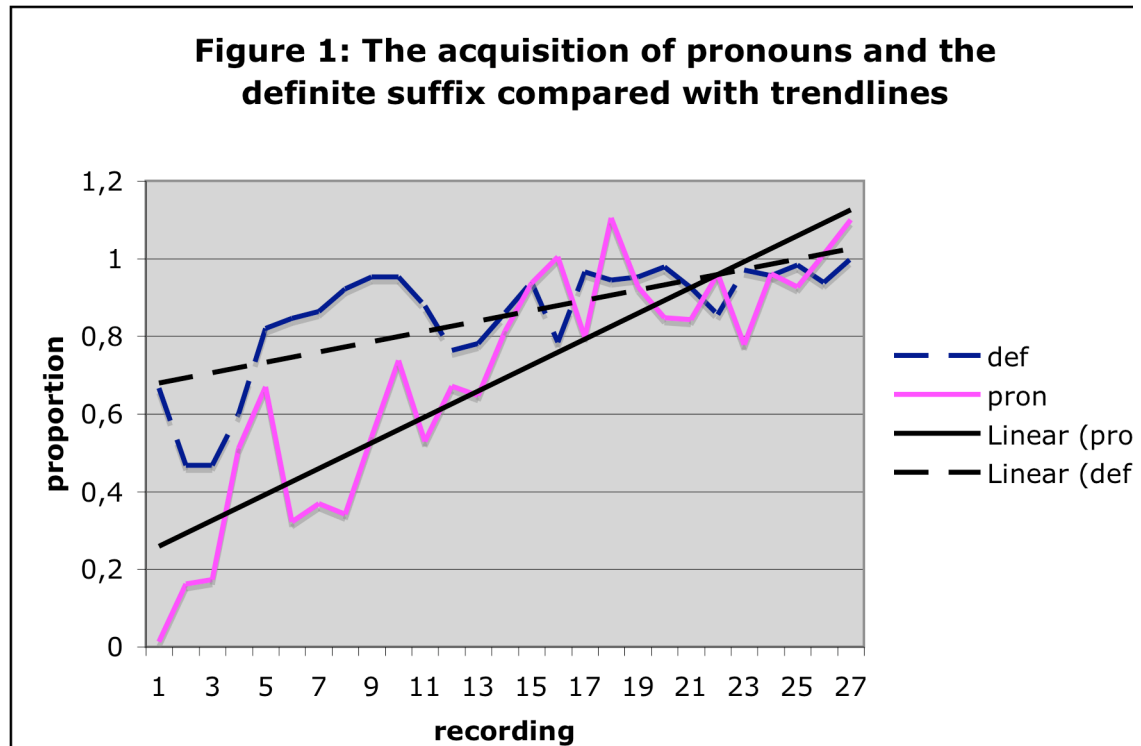
In order to make a statistical comparison between the two, the two series have been given a linear trend line representation so that a regression analysis could be carried out. The regression analysis allows us to compare the acquisition of the definite suffix and pronouns with regard to both the intercept (proportion of inclusion at the first data point) and the slope (the rate of development). As should be apparent from a visual comparison of the two trend lines, the two lexical elements are significantly different with regard to both. From this we can draw two conclusions. First, we can see that there must be a stage in Ina's linguistic development at which she makes use of the definite suffix but does not have pronouns in her linguistic repertoire, and second, this means that it is possible to postulate a stage at which there are no manifestations of person (and consequently uniqueness) in Ina's grammar.

The lexicalization of uniqueness and specificity in child language

Now we are at a stage where we are able to consider how uniqueness and specificity gradually become lexicalized in Ina's grammar. So far we have seen that the definite suffix is acquired very early, and that there appears to be a stage at which Ina has started using the suffix, but not prenominal definite determiners or pronouns. Recall that the latter two share the characteristic that they are taken to spell out uniqueness in the target language. We have also seen that the prenominal definite determiner is acquired late. In addition, if we compare this information to that in Table 2, we see that Ina does not combine adjectives and nouns in definite DPs until the sixth file. This means that Ina does not combine adjectives and nouns at all at the time when pronouns start appearing in her language.

Next let us consider how this course of development could result in an Icelandic type grammar where uniqueness and specificity are always lexicalized separately. Recall that in Icelandic, there is a (visible) suffixal article only in both simple and modified structures, and it has been proposed here that the suffixal article in Icelandic always only spells out specificity and that uniqueness is represented by a lexical item with no phonological realization. Consequently, if Norwegian children start off with a lexicalization of definite noun phrases that is equivalent to that of Icelandic, they must have the lexicalization in (15), repeated here as (22):

(22) **Icelandic: Adj. Noun-dx**
     Pronouns   [Uniqueness.....Specificity]
     Determiners[Uniqueness] (usually phonologically zero)
     -dx   [Specificity]

The question is what would make children end up with this kind of setting, and how they would go from this non-target-like setting to the correct one (for Norwegian).

If we imagine that the definite suffix is detected in the input at an early stage due to its input salience, the next thing that will happen is that it is assigned an interpretation. On the assumptions made here, being assigned an interpretation means being associated with a projection in the functional sequence. In the case of the suffix, there are two possible lexicalizations of this element in the input; it either spells out specificity and uniqueness or specificity only, but the latter case is postulated for modified structures and not simple DPs with no adjective. Clearly, there is a sense in which the Icelandic setting could be said to be the 'simplest' one as it involves a system where each semantic category is spelled out by a separate lexical item. This is one possible reason why the suffix only lexicalizes specificity. Another possible explanation is that uniqueness is

'unavailable' at the point in development when the suffix is assigned an interpretation, due to some kind of cognitive immaturity, as often argued in experimental studies (see e.g. Matthewson, Bryant and Roeper 2001). Recall that we have assumed that the prenominal definite determiner and pronouns are seen as essentially the same kind of lexical item with the exception that one must be followed by a noun. On these assumptions, Ina's first (definite) nominal lexicon will be as follows:

(23) **Nominal Lexicon 1**
      -dx   [Specificity]

The next type of lexical item that appears is pronouns, and these are assumed to lexicalize uniqueness (and specificity). With the introduction of pronouns and uniqueness into the grammar, it becomes necessary to lexicalize uniqueness in definite noun phrases as well. At this point, there are two possible options, either the definite suffix can start spelling out both specificity and uniqueness, or another lexical item with a zero spell-out can spell out uniqueness. As the introduction of pronouns (and uniqueness) into the grammar happens at a time when Ina has not yet started combining adjectives and nouns, and as the grammar consequently does not need to take into account the fact that modified structures are different from unmodified structures in the target language, the main cue for the child will be the fact that the input signals that uniqueness has a zero spell-out. As a result, the child ends up with a lexicalization that is equivalent to that of adult Icelandic. The initial introduction of pronouns is represented in (24), while the subsequent addition of uniqueness to definite noun phrases is described in (25):

(24) **Nominal Lexicon 2**
      -dx   [Specificity]
      pronoun   [Uniqueness....Specificity]

(25) **Nominal Lexicon 3**
      -dx   [Specificity]
      pronoun   [Uniqueness....Specificity]
      determiner   [Uniqueness] (phonologically zero)

As the child first starts combining adjectives and nouns and becomes aware of the prenominal definite determiner in the input, she will need to modify her grammar again to open up for the possibility of having an overt manifestation of uniqueness in modified structures. The first example that includes a prenominal determiner is found in the ninth file. One of these is given in (26):

(26) **Ho** fin -e   dukka.[8]   (Ina.09, age 2;2.12)
      she nice-WE dolly(.the.FEM)
      The nice dolly

This means that the nominal lexicon of Ina is as represented in (27):

(27) **Nominal Lexicon 4**
      -dx   [Specificity]
      pronoun   [Uniqueness....Specificity]
      Ø/ho/han/den/det/de   [Uniqueness]

Only when the zero spell-out of uniqueness is completely wiped out of the grammar will it be necessary for the child to "expand" the definite suffix to also spell out uniqueness, because as long as the phonologically zero expression of uniqueness exists in the grammar of modified definites, this can also be used in simple structures. Consequently, the zero determiner, once it has been introduced into the grammar, becomes a fairly persistent feature. It is the existence of this determiner that facilitates the extended period of omission that is found with the prenominal determiner in modified structures.

A Note on Frequency

We have seen that there is a great difference between the acquisition of definiteness markers in Norwegian. The suffixal determiner is acquired very early, while the prenominal definite determiner is acquired much later and occurs at a much slower pace. One fairly obvious explanation for this developmental pattern is that the suffixal article is more salient in the input than the prenominal determiner, and, as mentioned, this is precisely what is argued in Anderssen (2005). Another explanation that naturally presents itself is that the difference in acquisition is related to input frequency, and there is no doubt that there is a great deal of difference between the frequency with which the suffixal and the prenominal articles are used. If we consider Table 1, which gives an overview of Ina's simple definite noun phrases, we see that the corpus includes a total of 1,938 unmodified

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[8] This example involves the proprial article rather than the regular prenominal determiner. Recall that in the Tromsø dialect, names and kinship terms must be preceded by an article in the form of the masculine or the feminine third person pronoun (cf. (7)). The proprial article can also be used with nouns that can be attributed animacy. There are two examples of target-like modified structures in the ninth file and both of these include the proprial article. It is interesting that this is the first example of an overt expression of uniqueness in modified definites, because it has been argued here that pronouns and determiners essentially are the same. In addition, proprial articles are acquired at a pace that is very similar to that of pronouns (Anderssen 2005).

definite noun phrases. In comparison, recall that all of Ina's files contained only 52 contexts for the prenominal determiner. Even if this may not exactly correspond to the input frequency of these elements, this is a strong indication that the suffixal article is much more frequent in the input than the prenominal determiner. In fact, as both modified definites and demonstrative noun phrases include a definite suffix, the difference in the frequency of the two definiteness markers is probably even larger than the above numbers suggest.[9]

Thus, it would appear that the low frequency of the prenominal determiner might explain its late acquisition. However, one thing that complicates the situation slightly is that the prenominal determiner is homophonous with the demonstrative pronouns and the third person pronouns that are used with inanimate referents. In addition, it is homophonous with the demonstrative determiner, and its neuter form is homonymous with the expletive subject. Some relevant examples are provided in (28):[10]

(28) a. Jeg liker **den**   /**det**.
          I   like   it/that.M/F/ it/that.NEU
          I like it/that one

      b. Jeg liker **den**   bil-en   / **det**   hus   -et.
          I   like   that.M/F car-the.M/F/ that.NEU house-the.NEU
          I like that car/that house

      c. **Det** regner
          It   rains
          It is raining

Whether the forms *den (M/F)* and *det (NEU)* are interpreted as demonstrative or not is dependent on whether they receive stress or not.

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[9] However, note that according to Anderssen (2007), demonstrative determiners are not very frequent in the input. In the first two of Ina's files, there are only six occurrences totally in the speech of the three adults present. This means (i) that demonstrative determiners cannot aid the acquisition of the prenominal determiner, but also (ii) the existence of double definiteness in demonstrative noun phrases does not provide a higher frequency of the suffixal article in the input.

[10] When it comes to demonstrative pronouns, the overlap applies to the masculine/feminine, neuter and plural forms, but for the personal pronouns, the plural forms are different. The plural third person form is *dem* in both nominative and non-nominative form, while the demonstrative and prenominal definite form is *de*. However, I have noticed that younger people are increasingly using *de* also as a regular third person plural form.

The demonstrative is always stressed. The demonstrative determiner is usually, but not always, stressed.

Bearing these facts in mind, it is clear that children acquiring Norwegian must have been exposed to the relevant forms (*den/det/de*) that are used prenominally in modified definites relatively frequently, even though the combination of a prenominal definite determiner with an adjective is infrequent. From this point of view, it is a bit surprising that they are not acquired earlier. In fact, if we consider the child Ina, it is clear that in her first file, when there are eight examples of nouns including the suffixal article, there are 24 examples of *den* and *det* used as a demonstrative or a regular pronoun. So, these pronominal and demonstrative forms are acquired early as well. Considering this, it is surprising that the prenominal definite determiner, which is homophonous with these pronouns as well as the demonstrative determiner, should be omitted so consistently for such a long period. It is only if frequency only matters to acquisition when a given form is found in exactly the same construction that frequency can be used to explain the delay in the acquisition of the prenominal definite determiner.

Conclusion

Norwegian is a language that exhibits double definiteness in modified definite noun phrases. In simple structures, there appears to be only one definite determiner, a suffixal article, while in modified structures, a prenominal (and pre-adjectival) determiner as well as the suffixal article is used. The suffixal article is acquired very early, especially as compared to other Germanic languages in which the definite article occurs relatively late. The prenominal definite determiner, however, is attested much later in development and is frequently omitted for a prolonged period of time. In an attempt to provide an account of this developmental path, a lexical insertion approach has been proposed for the Scandinavian languages which assumes two determiner positions that make separate contributions to the interpretation of a noun phrase as definite. One of these is situated above and the other one below the adjectival projection(s). The pre-adjectival position adds uniqueness, which is equivalent to definiteness proper, while the post-adjectival position carries specificity. In simple structures, when no adjective intervenes, the suffixal article can spell out both of these positions, but when an adjective intervenes, this is no longer possible, and the prenominal determiner is added to spell out uniqueness. This is assumed for all the Scandinavian varieties except Icelandic, where the absence of a prenominal determiner in modified structures is taken as an indication that in this variety, uniqueness and specificity are always

lexicalized by separate lexical items. If this is the case, the former of these must be realized by a phonologically zero element.

It has been argued that the prenominal determiner lags behind in acquisition due to a combination of several facts. First, the child becomes aware of the suffixal article in the input very early due to its high saliency (Anderssen, 2005). When this happens, it is assigned an interpretation, namely specificity. One possible reason why this early suffixal article does not lexicalize uniqueness as well may be that a one-to-one mapping from lexical item to semantic category/functional head is the simplest, and hence, default assumption. Another possibility is that uniqueness is unavailable due to cognitive immaturity. Possibly, it is a combination of the two that causes this.

When uniqueness becomes available, this is first manifested by the child starting to use pronouns. Once uniqueness is manifested in pronouns, we would expect it to start being lexicalised in definites as well. Again, a one-category-one-lexical-item strategy would suggest that uniqueness should be lexicalised by a phonologically zero element. However, the main reason why uniqueness is taken to be phonologically zero is that at the point when this development takes place, the child has not yet started producing modified definites, and hence there is nothing in the child's grammar that tells her that there are two different ways of lexicalizing uniqueness. As a result the child ends up with a grammar that is the same as that of Icelandic, where, as we have seen, simple and modified definites are lexicalised the same way. This grammar is maintained when the child starts combining adjectives and definite nouns. When the prenominal determiner starts to appear, the phonologically zero article can co-exist with it and is still frequently used in unmodified structures, thus causing the omission of the overt prenominal determiner to persist. In fact, the zero determiner can be used in simple definites until the prenominal determiner is included at a target-like rate in modified structures. Only at such a stage is it necessary to expand the lexicalization of the suffixal article to include uniqueness.

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