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# Comparative studies of variation in the use of grammatical gender in the Danish and Dutch DP in the speech of youngsters

## Free versus bound morphemes

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The paper reports on a cross-linguistic study on speech data produced by monolingual and bilingual Dutch and Danish teenagers. The prediction that both monolingual and bilingual Danish youngsters show less variation in grammatical gender due to more morphological input cues for gender in Danish than in Dutch is borne out. More precise results of this cross-linguistic study are that free morphemes may vary in teenagers' actual language use in Danish whereas bound morphemes may not. Further, the teenagers produce far more common than neuter nouns in both languages and the bilinguals overuse common gender of the definite determiner in Dutch and, though demonstrably less, the indefinite determiner in Danish.

**Keywords:** gender assignment and agreement, morphological cues, Danish and Dutch, variation, free vs. bound morphemes

### 1. Introduction

The focus of this study is variation in grammatical gender. We study both the indefinite and definite determiner in Danish and the definite determiner in Dutch. Gender involves the interaction of morphology, syntax, semantics, and phonology (Lohndal & Westergaard, 2016, p. 1) and this very complexity makes the category eminently eligible for an examination of the phenomenon of linguistic variation. In this paper, we focus on the comparison between monolingual and bilingual Danish teenagers, but as far as possible we will compare bilingual Danish youngsters to their Dutch agemates. We will compare the variation in grammatical gender in Danish and Dutch DPs to address our main question: to which extent is the variation detected in spontaneous speech of teenagers with respect to the Dutch/Danish gender distinction related to *an internal linguistic factor*, i.e. the visibility

of (morpho)syntactic cues. The results of this Danish-Dutch comparison are taken as hypothesis-generating rather than conclusive.

Danish and Dutch are obvious candidates to compare in order to address this question. On the one hand, the gender systems of the determiners in Danish and Dutch are very similar. Both languages have a two-way gender distinction – Common versus Neuter – with Common nouns outnumbering Neuter nouns in more or less the same ratio; and assignment of lexical gender is in both languages mainly arbitrary. On the other, Danish offers more input of morphological cues for grammatical gender than Dutch.

We will compare monolingual and bilingual informants. We do not, however, have access to data on the specific nature of age of onset of Danish and Dutch by the bilingual teenagers in this study. What we know is that they have acquired two languages from birth (2L1), or acquired the second language between age 1 and 3 (ESB child; Unsworth et al., 2014), or acquired Dutch or Danish as a second language between age 4 and 7 (child L2). In the generative literature, all child acquirers are hypothesized to be similar in that they have not yet reached ‘the critical age’ and hence are supposed to have full access to UG, unlike what is often assumed for adult L2 acquisition. In that sense, 2L1, ESB and child L2 acquisition are more similar to (monolingual) L1 acquisition than to adult L2 acquisition although there are also crucial differences among them. To complicate matters further, it could be justly questioned whether there are in fact any monolingual youngsters in the Netherlands or Denmark. Even so-called monolingual children and youngsters have frequent access to input, which neither stems from the national standard language nor necessarily the societally dominant one (Cornips, 2014). Both countries rank high on any scale of European proficiency of English as a second language and in both countries all youngsters in big cities grow up with peers having other home languages than the standard L1. In the present study, as in many other studies, the term bilingual is, however, in so far descriptive as it covers *socialization processes where more than one language is used*.

Another issue is the despairingly simple question of what should be counted as the *target* for the acquisition or use. The gender classifications of the Dutch and Danish young informants may very well cut across lines stipulated by standard Dutch and Danish norms as expressed in dictionaries, grammars, and foreign language teaching, either because of incipient change or because their respective grammars have deviant assignment rules. Some nouns which in standard usage are classified as Neuter may consistently be classified as Common in the production of the teenagers or vice versa, or as having no grammatical gender at all (bare nouns). Others may vary as to gender assignment. Our point of departure is that variation is ubiquitous but how can we forge a metalanguage for the target which does not presuppose a coherent invariable norm? In many acquisition studies variation in

grammatical gender is taken to be less or more target-like as to both gender assignment and agreement but this is arguably tantamount to adopting a naïve, codified standard language perspective. We take the stand that we report what our informants do without presupposing that they wanted to produce an invariable standard. Hence we are unable to use the traditional metalanguage and will have to find other solutions. When in the following we fall back on established conventions in these respects, there is always the possibility that the informant is right in that s/he actually intended precisely the gender form s/he produced.

The paper is organized as follows. In Section 2, we provide an overview of the gender systems of Dutch and Danish standard languages (sic!) and review the acquisition of gender in the DP in Danish and Dutch followed by our predictions with respect to our research question in Section 3. In Section 4, we detail the methods used to collect data. The results are presented with Dutch first and then Danish including adjective agreement in Sections 5 and 6. They are compared in Section 7. Section 8 contains the discussion and Section 9 the conclusion.

## 2. Grammatical gender in Danish and Dutch

### 2.1 Grammatical gender in general

Gender is a grammatical resource (or feature) used for various purposes in various languages or not used at all. In the literature, *gender assignment* is distinguished from *gender agreement* (Corbett, 1991). Gender assignment refers to an inherent property of the noun, for example *bil/auto* ‘car’ as ‘having’ Common gender and *hus/huis* ‘house’ as ‘having’ Neuter gender. On the other hand, gender agreement is reflected in elements dependent on the noun such as (in)definite determiners, attributive and predicative adjectives etc. In some languages gender assignment takes the form of distinguishing separate declension classes, in others gender is manifest only in agreement. Russian belongs to the first type of languages (Corbett, 1991) whereas both Danish and Dutch belong to the latter type. Seen from the acquirer’s point of view the first type offers several cues to gender, since this category penetrates the whole noun system. In the Danish and Dutch type, such cues, i.e. expression elements – separate morphemes – that may be used by the child to classify nouns according to gender, are restricted to agreement. Thus in agreement languages signals for gender are weaker: Since the noun itself does not reveal anything about which gender the noun ‘is’, the child has to grasp the mechanism of agreement itself in order to acquire the gender category. Bare nouns in Dutch and Danish serve to press our point that nouns do not ‘have’ gender. Neither in Dutch nor in Danish can you tell from the noun when used without any determiner which gender should be used in the DP.

## 2.2 Grammatical gender in Dutch

Dutch classifies nouns into two grammatical genders: Common and Neuter. Grammatical gender is reflected in definite determiners, demonstrative determiners, attribute adjectives, first person plural possessives, some *wh*-phrases, and relative pronouns accompanying the noun or referring to it. In our study we focus on the singular *definite determiner* as a clear case: singular definite determiners vary morphologically according to the gender of the noun, as illustrated in Table 1 below. Common nouns take the singular definite determiner *de*, such as *de hond* ‘the dog’; Neuter nouns take the singular definite determiner *het*, such as *het konijn* ‘the rabbit’ in both simple and complex DPs. Simple DPs are defined as not containing any attributive adjective, whereas complex DPs do.

There is no gender distinction, i.e. gender is neutralized, in the singular *indefinite* determiner, which is *een* for both Neuter and Common nouns. Gender is also neutralized in the plural definite determiner, which is *de* for both genders in both simple and complex plural DPs. In Dutch, the article whether definite or indefinite, is always a preposed free morpheme.

The attributive adjective in the complex DP shows morphological agreement *-e*/null morpheme but only in the indefinite Neuter condition and thus cannot be considered a transparent cue for gender agreement.

Table 1. Morphology of determiner in Dutch

Gender noun	Indefinite		Definite		
	Singular		Singular		Plural
	Simple DP	Complex DP	Simple DP	Complex DP	Simple DP
Common	<i>een auto</i> ‘a car’	<i>een grote auto</i> ‘a large car’	<i>de auto</i> ‘the car’	<i>de rode auto</i> ‘the red car’	<i>de auto’s</i> ‘the cars’
Neuter	<i>een huis</i> ‘a house’	<i>een groot- huis</i> ‘a large house’	<i>het huis</i> ‘the house’	<i>het grote huis</i> ‘the big house’	<i>de huizen</i> ‘the houses’

When type frequencies of Common and Neuter nouns are counted, Common nouns outnumber Neuter ones by a ratio of about 2:1 (Blom, Polišenská, & Weerman, 2008, p. 302). The ratio is 3:1 when the count is based on token frequencies (Van Berkum, 1996). Lexical assignment of grammatical gender takes place almost arbitrarily.

## 2.3 Grammatical gender in Danish

Like Dutch, Danish does not use gender for declension classes but only for agreement (Hansen, 1967, p. 25f; Hansen & Heltoft, 2011, p. 452). And similar to Dutch, gender in Danish involves a two-way distinction of Common and Neuter with

Common gender vastly outnumbering Neuter.<sup>1</sup> But in Danish the gender contrast is marked morphologically on *both* the indefinite *and* the definite determiner in the singular. And in contrast to Dutch, simple singular definite DPs do this by means of a postnominal article, which is incorporated into the word as a *bound morpheme*. However, both indefinite simple and complex singular DPs include a preposed, gender specified determiner which is a free morpheme. Like in Dutch, the gender difference is neutralized in the plural. In Danish however, the simple plural DP has a postposed bound morpheme while the complex DP has a preposed free morpheme, as is the case in the singular. This means that gender is one of the few grammatical categories which is expressed by both a free form and a bound form, hence this paper's focus. The system is given in Table 2 below.

The adjective in the indefinite complex DP shows agreement according to the gender of the noun: Common and Neuter nouns combine with *null/-t* inflection, respectively, in contrast to the adjective inflection in the definite complex DP which is neutralized for both gender and number.

For comparison with the Dutch system in Table 1, the four cases with gender specification are highlighted in grey so that it is evident on first inspection that the two systems differ both in the *amount* of gender specification and *as to incorporation into the word of the definite determiner*, i.e. the free vs. the bound morphemes.

Table 2. Morphology of determiner in Danish

Gender of noun	Indefinite		Definite		
	Singular		Singular		Plural
	Simple DP	Complex DP	Simple DP	Complex DP	Simple DP
Common	<i>en bil</i> 'a car'	<i>en stor bil</i> 'a large car'	<i>bilen</i> 'the car'	<i>den røde bil</i> 'the red car'	<i>bilerne</i> 'the cars'
Neuter	<i>et hus</i> 'a house'	<i>et stort hus</i> 'a large house'	<i>huset</i> 'the house'	<i>det store hus</i> 'the big house'	<i>husene</i> 'the houses'

As in Dutch, lexical assignment of gender takes place almost arbitrarily.

Calibrating the minute cross-linguistic differences and many similarities between Dutch and Danish, the two languages seem to be maximally close to each other on the *Germanic gender cline* from arguably *gender central* Icelandic to completely *gender indifferent* Afrikaans in (3) (after Duke, 2009):

1. There seems to be consensus here: According to Christensen (2016, p. 2) 75% of the noun lemmas in the Danish dictionary of orthography (*Retskrivningsordbogen*) are assigned Common gender. Hansen 1967 gives various figures centering round 75% based on word counts in the Danish dictionary (ODS), and Hansen and Heltoft, 2011 just give the figure of 75%.

## (3) The Germanic GENDER CLINE:

Icelandic-Norwegian-German-Danish-Dutch-English-Afrikaans

Since, however, Danish has more and different morphological input cues for gender than Dutch, the prediction is that *both monolingual and bilingual youngsters in Danish will show less and more restricted variation in gender assignment and agreement from a codified standard language perspective than youngsters speaking Dutch.*

As mentioned above, crosslinguistically we will only compare the definite determiners in Danish and Dutch since Dutch neutralizes any gender distinction on the indefinite one. Internally in Danish, however, it makes sense to compare indefinite and definite determiners since we compare free morphemes and bound morphemes. In addition we compare simple and complex DPs. But first we compare the acquisition of gender in both communities.

### 3. Developmental factors in Dutch and Danish and the other Scandinavian languages

#### 3.1 Dutch

Previous research (Cornips & Hulk, 2008; Blom et al., 2008; Tsimpli & Hulk, 2013; Unsworth et al., 2014) shows that gender assignment in Dutch is an excellent example of *late acquisition*. In an experimental setting – picture elicitation tasks – monolingual Dutch children aged seven use the Common definite determiner *de* with nouns that are classified in standard Dutch grammars as Neuter (and thus should have had *het*) in 24% of the cases (Blom et al., 2008, p. 314; see also Cornips & Hulk, 2008):

**Table 3.** The use of the definite determiner *de* with standard Neuter nouns by first language speakers of Dutch between 3;2 and 7;10 years (taken from Blom, Polišenská, & Weerman, 2008, p. 314)

Monolingual age range	<i>N</i>	<i>de</i> with standard neuter nouns	
3;2–3;10	7	88%	37/42
4;0–4;11	17	56%	54/93
5;1–5;11	15	31%	27/87
6;2–6;11	11	29%	31/108
7;1–7;10	14	24%	29/122

Experimental data reveal that older monolingual (Cornips et al., 2006) and bilingual children continue to use *de* with Neuter nouns (49%) beyond the age of ten

(Cornips et al., 2006 but also Blom et al., 2008; Cornips, 2008; Cornips & Hulk, 2008; Hulk & Cornips, 2006; Unsworth, 2008).

At the end of the 1990s, a considerable amount of spontaneous speech from Moroccan, Turkish and Surinamese informants in their early twenties was collected in the Utrecht neighbourhood Lombok/Transvaal (approximately 8 hours). This group of friends used Dutch to communicate with each other. All youngsters, regardless of their other language, reveal a tendency to use the definite determiner *de* in cases where the neuter definite determiner *het* is required in standard Dutch, in most cases to construct social identities (cf. Cornips, 2008).

### 3.2 Danish and other Scandinavian languages

There is as yet not much information about the developmental stages of acquisition of grammatical gender in Danish (in contrast to Swedish and Norwegian). Danish differs from standard Swedish and Norwegian in that ‘double definiteness’ as for example *den stor-e bil-en* ‘the big car’ does not occur (see Table 2).<sup>2</sup> Further, standard Danish differs from most spoken Norwegian in that the former now has a two-way gender distinction whereas the latter has a three-way grammatical distinction, although some dialects of Norwegian also feature a two-way Common versus Neuter gender distinction (cf. Rodina & Westergaard, 2013; Sollid et al., 2014). Some traditional Danish dialects had three genders, some (n)one (Bennike & Kristensen, 1898–1912, p. 157ff) but there are in any case almost no traces of such previous systems in the present day Danish speech community.

The literature, as described below, shows that bound morphemes are acquired from the beginning and standardlike due to their trochaic structure, their frequency, and that they at least initially show declension class like behaviour.

Andersson (1992) distinguishes the following stages in the acquisition of grammatical gender in the definite DP in Swedish:

- i. The definite bound morpheme is always one of the first gender markers to appear;
- ii. The tendency for the definite bound morpheme to appear first is strongest for Neuter gender nouns;
- iii. The Common gender bound morpheme is the only gender marker present for all children at all data points;
- iv. All the children use more Common than Neuter gender markers.

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2. As demonstrated by Dahl (2003), the Scandinavian dialect continuum shows a lot of dialect variation with respect to the phenomenon of ‘double definiteness’.



Andersson argues that the definite bound morpheme and definiteness in Swedish play a central role as a key to the acquisition of the gender system and to the relative ease with which young second language learners acquire gender in Swedish. There are already at the earliest stages only a few ‘errors’ (author’s term). Further, Plunkett and Strømqvist (1992, p. 475) claim that acquisition of the gender category in Scandinavian is precocious compared to that of German (Mills, 1986) and that the available evidence based on longitudinal data of one child speaking Swedish (two way distinction: Common-Neuter), one child speaking Norwegian (three way distinction Masculine-Feminine-Neuter), and two children speaking Danish (two way distinction: Common-Neuter) indicates that gender constitutes an ‘almost error free domain in the acquisition of Scandinavian’. Again, the definite bound morpheme appears to be among the first inflectional morphemes acquired by Scandinavian children. Sleeman (2012) claims that monolingual acquisition studies show that the Swedish and Norwegian definite bound morphemes are acquired earlier than the English and German free morphemes and that Swedish children (just like Romanian children) acquire the definite bound morpheme before the indefinite free morpheme. This is confirmed in Rodina and Westergaard’s study (2013, p. 55f) in which two monolingual Norwegian and two bilingual English-Norwegian speaking children acquire the bound morphemes (the definite singular article and the (in)definite plural forms) without problems before the age of three. This holds for the various nominal forms as well as for the individual children.

Plunkett and Strømqvist (1992) report a few gender variations which involve the use of Common determiners for standard Neuter nouns. The four children in Rodina and Westergaard’s study (2013) use the masculine suffix with standard Neuter and Feminine nouns in only 2% of the cases. However, the same children reveal a considerable delay in the acquisition of the indefinite free morpheme. In particular, the Masculine is almost always used with conventionally Feminine nouns (63%) and even more with conventionally Neuter nouns (71%). The difference in the children’s performance between bound morphemes and gender agreement is statistically significant. Therefore, Rodina and Westergaard (2013, p. 61) argue that children in Norwegian acquire gender based on the declensional endings. They claim that the definite bound morpheme has a high frequency in the input and has a trochaic structure which is prosodically favoured by young children. There are no differences found between monolingual and bilingual children in the sense that they make similar mistakes. They further analyse the indefinite Masculine free morpheme *en* (which is overgeneralized) as expressing the joint category of definiteness and number with the specific features indefiniteness and singular, but as being unspecified for gender (yet) following the analysis by Cornips and Hulk (2008) (see Section 5 below). Lohndal and Westergaard (2016, p. 10), however,

analyse the bound morpheme not as an exponent of gender but as a declension marker. In Norwegian, there is no immediate and automatic link between the bound morpheme and the gender on the indefinite article.

Further, Bohnacker (2007) found that determiner omissions in child-directed speech in Swedish are more widespread than one would assume. This goes especially for 'bare' singular count nouns and omissions in doubly determined nominals. Bohnacker studied two children who reached target-like determiner production at age 2;0, which is early compared to most other Germanic languages. In Swedish, definite bound morphemes emerge at an earlier age and are produced at higher frequencies than indefinite free morphemes and at an earlier age and at much higher frequencies than definite free morphemes.

Summarizing the acquisition evidence, it is clear that the bound morpheme has a different trajectory than the free morpheme. This evidence along with the evidence presented above on the grammatical system predicts that teenagers will produce less variation in the bound than in the free morpheme.

#### 4. Methodology of the Dutch and Danish studies

##### 4.1 Dutch methodology

We report results from a spontaneous speech corpus obtained from two age groups (10–12 years, 18–20 years), from two different cities (Amsterdam and Nijmegen), and from three linguistic/cultural backgrounds (Turkish, Moroccan Arabic/Berber and Dutch) (see (Meel et al., 2016)). In these so-called sociolinguistic interviews, two youngsters were recorded together at school; they do not necessarily know each other but belong to the same cell in the design of the Meel et al. study because of their language background.

##### 4.2 Danish methodology

The Danish data forms part of the larger LANCHART data base. The LANCHART study (Gregersen, 2009) is focused on language change in real time. In this paper, we focus on the Køge and the Amager data sets which both comprise Danish monolinguals and bilinguals and are comparable in that they feature youngsters at the same age at the time of recording.

The Køge study is original in its design: It was a longitudinal study of the same group of pupils, including Dano-Danes but primarily pupils with a Dano-Turkish background from the time they entered school and till they left it at the age of

15–16. The project is documented and discussed in detail in Jørgensen, 2008 (two volumes). In this paper, we hone in on the recordings with pupils in their final year at school. The project focussed on the group of Dano-Turkish pupils but their Dano-Danish class mates were also recorded (cf. below for details). The Køge study used a battery of data collection techniques comprising two types of group recordings as well as one type of single person sociolinguistic interviews. In both types, other languages than Danish may occur but that has been left out of consideration here (cf. Jørgensen, 2008).

The Amager data set (Amager is a part of Copenhagen and this particular neighbourhood features immigrants with very diverse linguistic backgrounds) was carried out as a contrast to the Dano-Danish data sets with 9th graders (15–16 year olds) recorded elsewhere in Copenhagen and the rest of Denmark (Gregersen, 2009), the so-called Generation 3 in the terminology of the LANCHART study. It follows the protocols of the larger study as to data collection methods (cf. below).

In what follows, we refer to a study carried out by Kappelgaard and Hjorth (2017) which was their joint master's thesis published 2017 and a later recoding of a subset of the data from their study, carried out by Marie Herget Christensen for us.

The recordings analysed feature a total of 52 informants distributed among the various speaker variables as documented in Table 4:

**Table 4.** The informants in the Kappelgaard-Hjorth study and their various background variables. T = Turkish, P = Pakistani, A = Arabic, T = Tamil, U-P = Urdu-Punjabi, U = Urdu, TM = Turkmen, P = Punjabi<sup>3</sup>

Informants	Sex	KØGE	Age	AMAGER (Copenhagen)	Age	Total	Total
Monolinguals	Boys	11	15–16	1	15	12	22
	Girls	9		1		10	
Bilinguals	Boys	4T	15–16	6A, 1T, 1U-P	14–16	12	30
	Girls	6T, 2P		5A, 3U, 1TM, 1P		18	
<b>Totals</b>		<b>32</b>		<b>20</b>		<b>52</b>	<b>52</b>

Apart from Turkmen and Turkish, there is grammatical gender in all the background languages.

The elicitation methods belong in the standard tool box for any sociolinguistic study. The material is specified in Table 5 below. As you can see, it is a sizeable material which was coded by Kappelgaard and Hjorth (2017) for grammatical gender, with a total of more than 200.000 running word forms and around 40 hours of recording.

3. We have no information as to Age of Onset (see § 1).

**Table 5.** The characteristics of the material analyzed (after Kappelgaard and Hjorth, 2017, p. 52, Table 3.1)

Data set	Interview type	Length (hours;minutes)	Number of words
KØGE	Single person 1997–1998	8;19	54.902
	Group_1997	6;45	52.839
	Group_1998	2;59	20.606
AMAGER	Single person 2009–2010	11;20	78.530

The first question was whether there was any difference between the group sessions and the single person interviews as to the use of grammatical gender. Since this turned out not to be the case, the two data types were merged into one (Kappelgaard & Hjorth, 2017, p. 76 and 82ff).

In Køge most of the children may be characterized as child L2 speakers since they learnt Danish only from the onset of grade school, i.e. at age 6. At the time of recording, the presence of Turkish speaking children in the schools in Køge was treated as a challenge but not as threatening to the majority of pupils let alone that of the population as such. This is probably both due to the reigning climate as to immigration in the 1990s in Denmark, and to the fact that the group of bilingual children was so large and homogeneous. In the Amager project (cf. now Madsen et al. 2016), in contrast, the bilingual children have a linguistically much more diverse background featuring L1s such as Arabic, Turkmen, Urdu and Punjabi. And the climate of opinion as to immigration has changed profoundly.

The second question to be answered before we – despite the differences noted – may be allowed to treat the group of Danish L2 speakers as one homogeneous group is whether the presence of grammatical gender in their L1s made any difference as to their use of Danish grammatical gender. This was answered in the negative by keeping the interview type constant and contrasting the Amager informants (diverse backgrounds involving mostly L1s which do have grammatical gender) with the Køge informants (homogeneous background with an L1 which does not feature grammatical gender). The results (Kappelgaard & Hjorth, 2017, p. 76 and 82ff) are striking: There is no difference whatsoever in the pattern of use of grammatical gender in the children's L2, i.e. Danish. Thus the bilinguals may in this respect be seen as one group and henceforth they will be treated as such.

## 5. The Danish results

Kappelgaard and Hjorth (2017) coded all occurrences of indefinite determiners (preposed free form) in the singular in one category and the occurrences of definite determiners in simple singular DPs (bound morpheme) as another. The material analysed reveals frequent use of both indefinite ( $n = 1,795$ ) and definite ( $n = 1,776$ ) determiners. As Table 6 shows, the youngsters produce 3,571 tokens of Common and Neuter indefinite and definite determiners in the two data sets of Køge and Amager/Copenhagen. The high numbers for this particular variable allow us to draw relatively firm conclusions about gender variation in the speech of monolingual and bilingual Danish teenagers. Monolinguals and bilinguals produce the various determiners, viz. free versus bound morphemes in roughly the same ratio:

**Table 6.** Mono- and bilingual youngster's production of indefinite and definite determiners (after Kappelgaard & Hjorth, 2017, Figures 4.12 and 4.13, p. 80f;  $N$  of speakers = 52)<sup>4</sup>

	<i>N</i>	Indefinite		Definite		Total
		Simple & complex DP		Simple DP		
		Free form		Bound form		
Monolinguals	22	699	55%	576	45%	1275
Bilinguals	30	1096	48%	1200	52% <sup>4</sup>	2296
<b>Total</b>	<b>52</b>	<b>1795</b>		<b>1776</b>		<b>3571</b>

This table does not show the numbers for the definite determiner which is a free morpheme (preposed) in the complex DP and it does not differentiate the indefinite determiner as to simple vs. complex DPs. In what follows we look more closely at the variation inside the two categories as to gender. We look first at the monolinguals and then at the bilinguals.

4. A possible explanation for the many definite DPs in the bilingual group may be that the bilinguals participated in group conversations with class mates to a larger extent than the monolinguals.

### 5.1 The monolingual youngsters speaking Danish

The monolinguals produce 943 Common nouns (=74%) versus 332 Neuter nouns (=26%), i.e. in a ratio of 3:1 which is completely as expected according to the literature (see footnote 2). Since we focus on the internal variation between the free vs. the bound morpheme, the question now is to what extent these two categories vary as to gender. The monolinguals show what we may safely see as categorical use of the standard. Of the 699 indefinites, 496 were standard Common nouns with a standard Common determiner and only 1 Common noun had a Neuter determiner. Of the 202 indefinite Neuter determiners, 6 were Common used with standard Neuter nouns while 196 were Neuter combined with Neuter. This fits our hypothesis well; almost no variation but what there is, goes towards Common for Neuter.

The definite determiner ( $n = 576$ ) which is bound, viz. used as a suffix, manifests categorical use: 446 Common nouns all take a common determiner and 130 Neuter nouns all take the neuter suffix.

**Table 7.** Danish Monolinguals' output for morphology of the determiner as free and bound morphemes in spontaneous speech (after Kappelgaard & Hjorth, 2017, Figure 4.12, p. 80). Grey cells = standard use

Monolinguals	Indefinite singular		Definite singular	
	Simple & complex DP		Simple DP	
	Free form		Bound form	
Gender of the noun:	Common <i>en</i>	Neuter <i>et</i>	Common <i>-en</i>	Neuter <i>-et</i>
Production:				
Common	99.8% 496/497	3% 6/202	100% 446/446	0% 0/130
Neuter	0.2% 1/497	97% 196/202	0% 0/446	100% 130/130
Total	497 699	202	446 576	130

The problem with this comparison is that we have on the one hand both simple and complex DPs with the initial free form *en/et* and on the other hand only the simple DP with the bound morpheme. Kappelgaard and Hjorth (2017) also coded the definite free form *den/det*, which is obligatory in the complex DP and the only gender carrying element in the complex definite DP. What matters here is that it is possible to tease out the simple and the complex DP as to the definite condition. The figures for the definite complex DP are as follows:

**Table 7a.** Danish Monolinguals' output for morphology of the determiner in the definite complex DP in spontaneous speech (after Kappelgaard and Hjorth (2017), Figure 4.12, p. 80). Grey cells = standard use

Monolinguals	Definite singular Complex DP	
	Free form	
Gender of the noun:	Common <i>den</i>	Neuter <i>det</i>
Production:		
Common	96% 195/202	3% 5/146
Neuter	4% 7/202	97% 141/146
<b>Total</b>	<b>202</b>	<b>146</b>

Table 7a shows that there is some but slight variation. Regarding the free morpheme, the use of Common for Neuter is 3% in the indefinite and definite context (see Table 7 above) but in the definite context Neuter is used for Common in 4% of the cases. Please bear in mind that the only gender marking in the complex definite DP is carried by the DET, the adjectives are neutralized (cf. Table 2 above). The analysis shows that in the case of the definite complex DP there is hardly any variation, precisely as with the simple DP.

The order from standardlike to more variable use per context is: bound morpheme [definite, simple DP] > free morpheme [indefinite, complex & simple DP] > free form [definite, complex DP].

## 5.2 The bilingual youngsters speaking Danish

Similar to the monolinguals, the bilinguals produce more Common than Neuter determiners although they produce more, namely in a ratio of 1: 4 for Neuter nouns (464 = 20%) and Common nouns (1832 = 80%). The exact figures are 821 Common and 275 Neuter indefinite singular determiners, and 1011 Common and 189 Neuter definite determiners. However, the results for the bilingual youngsters differ from the monolingual age mates as revealed by the contrast between Tables 7 and 8. Common shows almost no variation at all (99%) in the indefinite context but this is not the case with Neuter nouns since in 16% of the cases Common *en* is used with Neuter nouns (whereas the other direction is hardly attested at all (1%)). This asymmetrical use is significant ( $p < .0001$ ).

**Table 8.** Danish Bilinguals' output for morphology of the determiner as free and bound morphemes in spontaneous speech (after Braüner Kappelgaard & Hjorth, 2017, Figure 4.13, p. 81)

Bilinguals	Indefinite singular		Definite singular	
	Simple & complex DP		Simple DP	
	Free form		Bound form	
Gender of the noun:	Common <i>en</i>	Neuter <i>et</i>	Common <i>-en</i>	Neuter <i>-et</i>
Production:				
Common	99% 812/821	16% 45/275	100% 1010/1011	1% 2/189
Neuter	1% 9/821	84% 230/275	0% 1/1011	99% 187/189
Total	821	275	1011	189
		1096		1200

\*  $X^2$  (indefinite singular: Common versus Neuter) = 102.508,  $p < .0001$ .

In sum, there is abundant overuse of Common free morpheme *en* with Neuter indefinite nouns (16%) but not vice versa; with the bound morpheme, standard use is categorical.

Table 8a shows the teasing out of the simple and the complex DP as to the definite condition.

**Table 8a.** Danish Bilinguals' output for morphology of the determiner in the definite complex DP in spontaneous speech (after Braüner Kappelgaard & Hjorth, 2017, Figure 4.13, p. 81). Grey cells = standard use

Bilinguals	Definite singular Complex DP	
	Free form	
	Common <i>den</i>	Neuter <i>det.</i>
Production:		
Common	91% 365/402	11% 31/293
Neuter	9% 37/402	89% 262/293
Total:	402	293



This pattern is where the variation resides but as for the monolinguals, the variation is bidirectional (and at a higher level) with almost the same figures for Neuter for Common (9%) as with Common for Neuter (11%).

Taken together, the order from standardlike to more variable use per context is the same as for the monolinguals: bound morpheme [definite, simple DP] > free morpheme [indefinite, complex & simple DP] > free form [definite, complex DP].

### 5.3 Variation in gender assignment and/or agreement

The pattern of variation of the bilingual youngsters in Table 8 for the simple and complex indefinite DP merged may be brought about by varying gender assignment, that is, the noun is assigned as Neuter instead of Common or vice versa. However, it may also be brought about by varying gender agreement, that is: (i) a ‘wrong’ assignment of the gender of the noun (lexical gender) may be combined with ‘correct’ gender agreement; (ii) ‘correct’ gender assignment may be combined with ‘wrong’ gender agreement; and (iii) the knowledge of lexical assignment might be there but the spell-out of the adjectival agreement is not there (yet?).

Only the indefinite DP has this potential for elucidating agreement and assignment since the adjective is neutralized in the Complex definite DP. Thus, in order to get more insight into whether the variation is due to gender assignment and/or gender agreement, we present how the Danish mono- and bilingual youngsters inflect the adjective (Common  $\emptyset$  and Neuter *-et*) combined with a Common or Neuter indefinite determiner for a standardly Common and Neuter noun in Table 9 below.<sup>5</sup> This table reads as follows. The first column presents the conditions Neuter and Common according to standard Danish. The second column presents the specific  $DET_{N/C}$ - $ADJ_{N/C}$ - $N_{N/C}$  configuration that was uttered in spontaneous speech. The third and fourth column headed by TOTAL present how often a unique combination of  $DET_{N/C}$ - $ADJ_{N/C}$ - $N_{N/C}$  configuration was produced by the monolingual and bilingual youngsters. The final column presents the 9 unique patterns that were found in the teenagers’ speech. Table 9 makes it possible to compare directly the two genders, the two groups and gender assignment vs. gender agreement:

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5. We are immensely grateful to Marie Herget Christensen who specially coded the results for the Complex DPs on the basis of the material in Kappelgaard & Hjorth, 2017 but in ways which were not included in the original study.

**Table 9.** Patterns in Danish for the various combinations of indefinite  $DET_{C/N}$  -  $ADJ_{C/N}$  - noun<sub>C/N</sub> (standard in grey); N of informants = 28 from Køge (18 mono- and 10 bilingual), 21 from Amager (2 mono- and 19 bilingual), in total 49

Response	$DET_{N/C}$ - $ADJ_{N/C}$ - $N_{N/C}$	Total		Pattern
		Monolingual N = 20	Bilingual N = 29	
Neuter noun	$DET_N$ - $ADJ_N$ - $N_N$	✓ 41	✓ 73	1
	$\emptyset$ - $ADJ_N$ - $N_N$	✓ 2	✓ 11	2
	$DET_N$ - $ADJ_C$ - $N_N$	✓ 4	✓ 16	3
	$DET_C$ - $ADJ_C$ - $N_N$	*	✓ 4	4
	$\emptyset$ - $ADJ_C$ - $N_N$	*	✓ 8	5
Common noun	$DET_C$ - $ADJ_C$ - $N_C$	✓ 123	✓ 209	6
	$\emptyset$ - $ADJ_C$ - $N_C$	✓ 7	✓ 31	7
	$DET_C$ - $ADJ_N$ - $N_C$	✓ 2	✓ 7	8
	$\emptyset$ - $ADJ_N$ - $N_C$	✓ 4	✓ 1	9

Let us first consider the Standard Danish pattern 1:  $DET_N$ - $ADJ_N$ - $N_N$ . Both monolingual and bilingual productions show standardlike adjective and determiner agreement in the Neuter condition. This also holds for pattern 2:  $ADJ_N$ - $N_N$ . Second, pattern 3:  $DET_N$ - $ADJ_C$ - $N_N$  is produced both by monolingual and bilingual youngsters. In this pattern, the determiner agreement is standard but adjective agreement is not. Finally, patterns 4:  $DET_C$ - $ADJ_C$ - $N_N$  and 5:  $ADJ_C$ - $N_N$  are only produced by the bilinguals revealing non-standard gender assignment, hence a Neuter Noun is combined with a Common ADJ and a Common DET or no DET. The noun is classified as Neuter according to standard grammar but the bilinguals apparently classified it as Common.

Let us now examine the Common context. Patterns 6:  $DET_C$ - $ADJ_C$ - $N_C$  and 7:  $ADJ_C$ - $N_C$  unsurprisingly reveal that both the monolinguals and the bilinguals produce standard adjective and determiner agreement. Pattern 8:  $DET_C$ - $ADJ_N$ - $N_C$  in which a Neuter ADJ is produced with a Common Noun and Common DET is produced by the monolinguals and bilinguals alike and so is pattern 9:  $ADJ_N$ - $N_C$  without a DET. Patterns 8 and 9 are cases of 'wrong' ADJ agreement. Finally, three patterns are not produced at all: First, the absent pattern  $DET_N$ - $ADJ_N$ - $N_C$  in which the noun is Common but with a Neuter ADJ and Neuter DET. It is likely that the bilinguals classified this noun as Common instead of Neuter. Second, the pattern  $DET_C$ - $ADJ_N$ - $N_N$ , third the pattern  $DET_N$ - $ADJ_C$ - $N_C$ . The latter two absent cases seem to indicate that non-standardlike agreement with the indefinite DET is out of the question.

In conclusion: The difference between the two groups may only be found in the reclassification evident in patterns 4 and 5 which taken together represent the bilingual group's reclassification of Neuter nouns as Common in contrast to the standard.

## 6. The Dutch results

We compare the variation in grammatical gender in Danish and Dutch DPs to address the question to which extent the variation detected in Danish spontaneous speech is similar to variation in Dutch due to the very similar gender systems. Note that the definite determiner is the only agreeing element that we can compare between both languages since gender is neutralized in the indefinite determiner in Dutch.

Thanks to the courtesy of Roeland van Hout, we are able to show the exact figures from the Meel et al. (2016) study which reveal that bilingual youngsters between 10–12 and 18–20 years old overgeneralize *de* with Neuter nouns in spontaneous speech. These youngsters were categorized into three groups: monolingual Dutch, Moroccan Arabic/Berber/Dutch and Turkish/Dutch (Meel et al., 2016). The youngsters between 10 and 12 years old with a Turkish and Moroccan background overgeneralize *de* with Neuter nouns in 50% of the cases while the youngsters between 18 and 20 years overuse *de* in one-third of the cases. The monolinguals are almost standardlike:

**Table 10.** The production of the definite determiner ‘het’ with Neuter nouns by Dutch-Turkish, Dutch-Moroccan bilinguals and monolinguals in Amsterdam and Nijmegen (targetlike in grey) (thanks to Roeland van Hout for the figures, see Meel et al., 2016)

Neuter	Monolingual		Turkish-Dutch		Moroccan-Dutch	
	10–12 <i>N</i> = 5	18–20 <i>N</i> = 6	10–12 <i>N</i> = 6	18–20 <i>N</i> = 7	10–12 <i>N</i> = 6	18–20 <i>N</i> = 7
Response	<i>het</i>	<i>de</i>	<i>het</i>	<i>de</i>	<i>het</i>	<i>de</i>
10–12 yrs <i>N</i> = 17	51 91%	5 9%	31 48%	34 52%	86 50%	86 50%
18–20 yrs <i>N</i> = 20	74 94%	5 6%	78 65%	42 35%	87 67%	42 33%

## 7. Comparison between Danish and Dutch results

The results are discussed according to the following comparisons: (i) Free morpheme versus bound morpheme, (ii) Danish and Dutch within groups, (iii) Danish and Dutch between groups, (iv) Neuter versus Common, (v) Mono- versus bidirectional overuse and (vi) Simple versus complex DP.

## Free morpheme versus bound morpheme

There is a striking difference in Danish between the possible variation in the free morphemes and the categorically standard bound morphemes for both groups. As the hypothesis would have it, the bound morpheme is used standardlike by all youngsters.

### Danish and Dutch: Within groups

The bilingual youngsters overall show more variation in Danish than their monolingual peers but, importantly, the variation found has the same direction: Either Common for Neuter or bidirectional variation for both groups. Thus, bilinguals do not differ from monolinguals qualitatively but only quantitatively. For the Dutch group, since both monolinguals and bilinguals overuse Common in the Neuter definite context, the same generalization applies.

### Danish and Dutch: Between groups

The Dutch monolinguals but especially the bilinguals show an abundant overuse of common *de* with Neuter nouns in *the definite context*. We cannot compare Dutch and Danish in the very same context since gender is neutralized in the indefinite context in Dutch (see Table 1) and since in Danish Common for Neuter only takes place by the bilinguals in indefinite contexts and only for the free morphemes (compare Tables 7 through 9 for Danish and Table 10 for Dutch). However, it is safe to say that the bilinguals in Dutch overuse *de* with Neuter nouns (about 50% between 10–12, and still about 33% between 18–20, Table 10) to a much larger extent than bilinguals do in Danish (16%, Table 8). Second, the Danish monolinguals differ from the Dutch monolinguals in that they produce the Neuter bound morphemes in the definite context standardlike and, hence, show no overuse of Common as Dutch monolinguals do.

### Neuter versus Common

The Danish bilinguals and all Dutch youngsters produce more Common than Neuter nouns and Common is used for Neuter. The Danish youngsters especially overuse Common for Neuter in the indefinite context, free form (16%, Table 8). The other direction is not attested in the Dutch group and only slightly attested in the Danish groups (9% in the definite context, free form, Table 8a).

## Mono- versus bidirectional overuse

Monodirectional overuse takes place by all youngsters in Dutch and bidirectional overuse is absent. In Danish, monodirectional overuse can be found in the indefinite singular (simple and complex DP, free form) and bidirectional overuse in the definite complex DP (free form).

### Danish complex DPs

The monolinguals show a slight and the bilinguals a more bidirectional overuse (Table 7a and Table 8a, respectively) in the definite singular where the determiner is a free morpheme. In this condition, gender agreement is neutralized for Neuter and Common. Further, the variation in adjective inflection Common  $\emptyset$  and Neuter *-et* in the Neuter condition shows that variation has to do with gender assignment rather than agreement. The monolinguals are standardlike.

Our prediction that *both monolingual and bilingual youngsters in Danish will show less and more restricted variation in gender assignment and agreement from a codified standard language perspective than youngsters speaking Dutch* since Danish has more and different morphological input cues for gender than Dutch, is borne out. The question now arises as to how the types of variation within Dutch and Danish and cross-linguistically might be accounted for? The kinds of explanation which may be brought into play are developmental and structural factors.<sup>6</sup>

## 8. Discussion

### 8.1 Developmental factors

Cornips and Hulk (2008) explain the notorious late process of acquisition of grammatical gender in Dutch as follows. In the first stage, children have no gender specification in their grammar. Thus, the children have a problem in discovering grammatical gender as a category rather than a problem identifying which noun is classified as Common and which as Neuter (lexical assignment). Consequently, Common nouns are not in opposition to Neuter nouns (Cornips & Hulk, 2008; Tsimpli & Hulk, 2013). The informants only use the feature specification [definite] for which they choose *de* as the 'default' value; hence the use of *de* is not a gender agreeing element (yet) but a definiteness marker. Rodina and Westergaard (2013,

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6. We shall address sociolinguistic factors in another paper (in preparation).

p. 60) follow this analysis to account for the fact that Norwegian children do not acquire gender until the age of 6–7: the overuse of masculine *en* is analysed as expressing definiteness and number, but as being unspecified for gender (yet). In a later stage, the speakers in Dutch become aware of gender as an abstract grammatical specification; that is, they become aware that *de* and *het* are related to grammatical gender, but they do not know the ‘right’ distribution of the lexicon as to gender specification (yet).

In addition, Tsimpli and Hulk (2013) argue that the long period of the acquisition of Dutch gender can also be understood from the perspective of evaluating default for the language versus default for the learner. They analyse the extensive delay in the mastery of gender distinctions in Dutch as a learnability problem in activating grammatical gender as a classificatory feature of Dutch nouns. Although the definite determiner *de* (associated with Common gender in the adult language) is the learner default during the developmental stages in which the learner has not yet identified gender as a nominal feature, Neuter is the linguistic default. The evidence from the D-N paradigm prevents the learner from identifying gender as a noun-classifier and leads the child to identify *de* as the default D form. According to them, the delayed emergence of a grammatical gender feature for Dutch nouns is not exclusively caused by the paucity of input cues but instead by the loss of grammatical gender in adnominal morphology and the primarily semantically based pronominal gender distinctions (cf. Cornips & Hulk, 2008).

In contrast to Dutch, this analysis is not very likely for Danish. The Danish monolingual and bilingual youngsters are standardlike regarding the use of the Common and Neuter determiner as a bound morpheme. The bilinguals show both a unidirectional overuse in the indefinite context (free morpheme) and bidirectional overuse in the definite complex DP context (free morpheme) but only in a tiny minority of the cases and the monolinguals have even less. It might be the case that the bound morphemes help children from the beginning of the acquisition process to assume that Danish has nouns that have to be differentiated in two classes and that this awareness of two noun classes is more entrenched in Danish than in Dutch. In addition, in Danish, syntactic cues for gender are more present than in Dutch. Dutch lacks a gender distinction in indefinite DPs and it has no gendered bound morphemes. These properties of the Dutch gender system seem to complicate the child’s acquisition process compared to Danish.

In addition, Dutch youngsters even between 12 and 20 years old and to some extent irrespective of linguistic background (Table 10) have trouble with *gender assignment* although there is a clear difference between monolinguals and bilinguals. In contrast, the Danish teenagers experience some problems in adjective agreement and some more problems in *gender assignment* of the DET (but still at a much lower level of variation).

In sum, the difference between the language groups in speed of acquisition of grammatical gender gives insight into the various properties of the input the child is exposed to from birth onwards and thus into which morphological input cues are helpful for children to establish that the language in question has a grammatical gender category.

## 8.2 Structural perspective

The standardlike production of the bound morpheme may be accounted for by one specific analysis of this postnominal article. According to Sleeman (2012 and references cited there), there are various ways to analyse the bound morpheme. The postnominal position is either the result of the noun left-adjointing to DET generated in different positions in the functional layer or it may be a suffix on the noun expressing gender as described in traditional grammars, or the postnominal article is considered a declension class marker which does not express gender agreement (Lohndal & Westergaard, 2016, p. 3 and references cited). As a suffix and as a declension marker, it is lodged within the word boundaries and its structure differs considerably from the prenominal free morpheme which expresses gender agreement. The analysis of the postnominal article as a bound morpheme may explain why the suffix is so early and frequent in the acquisition process and standardlike from the start and why the Danish youngsters use it standardlike.

## 9. Conclusion

Our prediction that both monolingual and bilingual Danish youngsters will have less and more restricted variation in grammatical gender due to more (and different) morphological input cues for gender in Danish than in Dutch is borne out. Our second prediction holds as well i.e. that the youngsters in Danish will use the bound morpheme categorically and the free form variably.

The Danish spontaneous speech data show that the *monolingual youngsters* between 14 and 16 years old show virtually no variation at all in Danish (Table 7) which confirms the developmental pattern already noticed in previous research. They reveal a slight overuse (of 3%) of the indefinite Common *en* as a free morpheme with Neuter nouns, while their use of the bound morpheme in the definite condition is standardlike.

The results for the *bilingual youngsters* between 14 and 16 years old differ from their monolingual age mates (Table 7) although their use of the bound morpheme in the definite condition is also standardlike (i.e. similar to the monolinguals). They

only reveal a much larger overuse of 16% of indefinite Common preposed *en* as a free morpheme with Neuter nouns. Thus, the bilinguals do not differ qualitatively but only quantitatively from their monolingual agramates.

The same holds for the monolingual and bilingual youngsters in Dutch. No qualitative differences have been found in spontaneous data but only quantitative ones i.e. overuse of common *de* with Neuter nouns.

If we compare the acquisition of gender of the DP in Danish with Dutch, we have to conclude that Danish shows much less variation than Dutch, that is to say, gender is used more standardlike than in Dutch. The fact that the Danish teenagers show more standardlike gender in their language use than Dutch teenagers is very likely due to the different position of Danish and Dutch on the gender cline: In Danish the grammatical category of gender is more structurally entrenched than in Dutch. This is so because (i) Danish distinguishes morphologically between Neuter and Common in the indefinite determiner context unlike Dutch. (Note that indefinite determiners are among the first grammatical morphemes to be acquired (Cornips & Hulk, 2006)), (ii) Danish distinguishes morphologically between Neuter and Common in the adjective inflection in the singular, indefinite context and (iii) Danish has a gender contrast which is morphologically visible as a bound morpheme that is acquired and used standardlike. In contrast to Danish where the variation attested can be analysed as variation in gender contrasts, the overuse of *de* with Neuter nouns in Dutch expresses definiteness only; that is, young children have no gender specification in their grammar. Thus, the children have a problem in discovering grammatical gender as a grammatical category rather than a problem identifying which noun is Common or Neuter gender.

The result of this cross-linguistic study between Dutch and Danish reported above is that there are linguistic constraints on which forms may vary. Free morphemes may vary in teenagers' actual language use in Danish, bound morphemes may not. Free morphemes may vary in Dutch and to a much larger extent than in Danish. This means that linguistic structure determines where the possibilities for variation exist.

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