

Age and Input in Early Child Bilingualism: The Acquisition of Grammatical Gender in Dutch

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1. Introduction

Child second language (L2) acquisition has been studied in terms of the ultimate attainment which children reach and – to a lesser extent – the developmental stages they pass through on the way to that end state. With respect to ultimate attainment, it is generally assumed that L2 children will become nativelike, although there are recent data suggesting otherwise (Hyltenstam and Abrahamsson 2003; McDonald 2000). Child L2 development remains relatively under-researched (see e.g. Schwartz to appear). This paper investigates both ultimate attainment and development in child L2 acquisition: ultimate attainment is examined in terms of whether L2 children attain nativelike levels of knowledge, and development in terms of the developmental errors which children make.

An increasing number of studies on child L2 acquisition are adopting a comparative approach, whereby L2 children are compared with other learner groups. Comparisons have thus been made with typical monolingual first language (L1) children (e.g. Haznedar 2001; 2003), bilingual L1 (2L1) children (e.g. Kroffke and Rothweiler 2006), L2 adults (Blom, Polišenská and Weerman 2005; Gilkerson 2005; Unsworth 2005) and SLI children (Paradis and Crago 2000). Such cross-group comparisons are used to disentangle the role of different factors in child L2 ultimate attainment/development, including age of first exposure, the role of the L1, L2 proficiency, and type and amount of input.

This paper investigates the role of input and age of first exposure in English-speaking children acquiring grammatical gender in Dutch by comparing L2 children with 2L1 and monolingual L1 children. The following questions are addressed: (i) In their acquisition of gender, do L2/2L1 children pass through similar stages to monolingual L1 children? (ii) Do L2/2L1 children fossilise in a non-targetlike stage, as has been suggested in some studies? (iii) What is the role of age of first exposure and of the quantity/quality of input?

Section 2 provides a brief overview of grammatical gender in Dutch and previous acquisition studies. In section 3, predictions are formulated based on these previous studies and these are subsequently tested using a new L2/2L1 child population. The results of this investigation are compared with previous findings in section 4, where possible explanations for the new findings are also suggested.

2. Background

2.1 Grammatical gender in Dutch

Dutch has a two-way gender system. A distinction is made between non-neuter (also known as common or *uter*) and neuter gender. Gender is visible on definite determiners, relative and demonstrative determiners, and adjectival inflection with indefinite nouns. The focus here is on agreement between nouns and definite determiners. Non-neuter nouns are preceded by the non-neuter determiner *de* and neuter nouns by the neuter determiner *het*. It should be noted that non-neuter nouns are approximately twice as frequent as neuter nouns (Van Berkum 1996). *De* is also used for plural nouns of both genders. This means that *de* is much more frequent than *het* in the input to the language-learning child. The only regular morphological cue for neuter gender is the diminutive form. All diminutives, such as *hondje* ‘little dog’, are neuter, even when the nouns from which they are derived are non-neuter, as is *hond* ‘dog’.

The specific mechanisms underlying grammatical gender agreement need not concern us here (see e.g. Carstens 2000; Franceschina 2005). For present purposes, it is sufficient to assume (uncontroversially) that Dutch has a formal feature marking gender, whereas English, the L1 for the L2 children in this study, has no such formal gender feature.

2.2 Previous studies

Previous studies on the monolingual L1 acquisition of gender in Dutch have shown that it is a gradual process. Van der Velde (2003; 2004) observes that children overgeneralise *de* with neuter nouns until at least age 6 (when 79.2% of neuter nouns are correctly produced with *het*). They produce, for example, *de raam* 'the window' instead of the targetlike *het raam*. There is no overgeneralisation in the other direction, however: *het* is not produced with non-neuter nouns. De Houwer (1990) makes a similar observation for her bilingual Dutch/English subject, Kate (2;7-3;4). Almost two thirds (61.8% (34/55) of neuter nouns are produced with *de*, whereas just 1.4% (3/214) of non-neuter nouns are produced with *het*.

In a series of studies, Cornips and Hulk ((2005; Hulk and Cornips 2006a; 2006b) have investigated the acquisition of grammatical gender in ethnic community children in The Netherlands. There are two points to note about these children: first, the older members of the ethnic communities in which they are growing up often speak little Dutch and this is frequently non-targetlike. Second, although the age of first exposure for these children is in principle at birth, the quality/quantity of the Dutch input which they are exposed to in the early years is unclear. For this reason, Cornips and Hulk state that these children have characteristics of both 2L1 and L2 children.

Hulk and Cornips (2006a) report on 14 L2/2L1 children in three different age groups (young (n=8): 3;0-3;10; middle (n=3): 4;11-5;2; old (n=3): 9;3-10;5), plus age-matched controls. The children had a variety of L1s (Moroccan Arabic/Berber, Sranan, French, Akan/Ewe, Russian-Sranan, Turkish), and, as noted above, they were all born and raised in The Netherlands. The main findings were as follows. With non-neuter nouns, the oldest bilingual group consistently used the target determiner *de* at a similar rate to the monolinguals and they hardly ever used *het*. With neuter nouns, both monolinguals and bilinguals overgeneralised *de*. The oldest bilingual group did not use *het* at a similar rate to the monolinguals, however: whereas monolinguals consistently produced *het* with neuter nouns (90% (9/10)), the bilinguals only did this at a rate of 39% (16/41). There is a quantitative difference between the bilinguals and monolinguals in that the acquisition of *het* is delayed. Hulk and Cornips argue that there also appears to be a qualitative difference between the two groups, as the data suggest that the L2/2L1 children fossilise in the non-targetlike stage of overgeneralisation.

A similar pattern is observed in an experimental setting with older ethnic community children (10-12 years at time of testing) (Cornips, van der Hoek and Verwer 2006), and similar observations have been made for ethnic community children for adjectival inflection (Weerman 2002; Blom *et al.* 2005).

Hulk and Cornips (2006) argue that crosslinguistic influence is unlikely to explain their findings. They divide the L2/2L1 children into two groups depending on whether their L1 instantiates grammatical gender or not and they find no difference between the two groups in their Dutch. The authors speculate that deficient input may be the cause of the quantitative and qualitative differences between the monolinguals and bilinguals. Bilingual children are exposed to **quantitatively** less input than monolingual children, and this, Hulk and Cornips suggest, may lead to a delay in the acquisition of *het*. Furthermore, they argue that the input to which the bilinguals are exposed is **qualitatively** different from that to which monolinguals are exposed because it includes overgeneralisation of *de* by the older community members who acquired Dutch as an adult (Cornips 2002; Cornips and Hulk 2005; see also Brouwer, Cornips and Hulk 2006; Hulk and Cornips 2006b on monolingual children in a multilingual setting). They claim that this qualitative difference in the input may have led the L2/2L1 children to fossilise in a non-targetlike stage of overgeneralisation. Extending a proposal put forward by Sorace (2005), they suggest that differences in input have an effect for the acquisition of interface phenomena and that the gender feature expressed by definite determiner in Dutch is one such phenomenon (namely, at the interface between the lexicon and morpho-syntax).

3. A different L2/2L1 child population

This paper investigates the extent to which Hulk and Cornips' proposal can be extended to a different 2L1/child L2 population, namely English-speaking children acquiring Dutch as a(n) other/second language. For this population, the possibility of being exposed to qualitatively different input from community elders does not exist.

3.1. Subjects

The subjects in the present study were 58 L2/2L1 English/Dutch children. They all attend international schools in The Netherlands at the time of testing, and some have previously attended Dutch pre-/primary schools. The children were predominantly from middle class families who had moved to The Netherlands for professional purposes. Their age at time of testing ranged from 5;3 to 17;4 (mean 10;5; SD 3;8), their age at first exposure from birth to 7;3 (mean 4;10; SD 1;9) and their length of exposure from 0;11 to 15;2 (mean 5;6; SD 3;8).

3.2 Research questions

There were two research questions: First, do English-speaking L2/2L1 children also overgeneralise *de*, i.e. is their acquisition of *het* delayed? And second, if this is the case, do they fossilise in this stage? When compared to the children in Hulk & Cornips' study, the children in the present study will also have received quantitatively less input than monolingual, simply because they are bilinguals, but the quality of this input should not differ in the same way as it does for the ethnic community children. It is highly unlikely that the English-speaking children have been systematically exposed to the 'ethnic Dutch' (Cornips 2002) to which the children in the previous studies have been. This leads to the prediction that while the children in the present study may be delayed in their acquisition of *het*, that is, while they will overgeneralise *de* to neuter nouns, they are not expected to fossilise in this stage of overgeneralisation.

3.3. Method

Semi-spontaneous data were collected using a picture description task (which was designed for other purposes - see Unsworth 2005). The use of semi-spontaneous data means that there are a different number of tokens per child. The average number of tokens per child is 18.4 for non-neuter nouns and 11.6 for neuter nouns. Each child saw one of two different sets of pictures; the data which were obtained are thus relatively consistent in terms of types of nouns produced.

3.4 Results

As stated in section 2, the focus of the present study is gender agreement, that is, whether the definite determiner agrees with the gender of noun. First, it is determined whether there is any evidence of overgeneralisation and then the results are examined for the effect of the following factors: age of first exposure, length of exposure, intensity of exposure and proficiency. An initial analysis, including all children together, is presented in Table 1.

Table 1. Distribution of *de* and *het* across non-neuter and neuter nouns (target in bold): All subjects

Gender of noun	Determiner	All subjects
Non-neuter	<i>de</i>	90.8% 971/1069
	<i>het</i>	9.2% 98/1069
Neuter	<i>de</i>	74.6% 503/674
	<i>het</i>	25.4% 171/674

Most non-neuter nouns are correctly produced with *de*, whereas only a quarter of neuter nouns are produced with *het*. The non-neuter determiner is thus overgeneralised to neuter nouns, and at first glance at least, it appears that overgeneralisation in the other direction, that is, of *het* to non-neuter nouns does not really occur.

Let us first consider whether there is an effect of age of first exposure. Children were divided into two groups: a child L2 group, consisting of children whose age of first exposure was between four and seven years ($n=44$) and a child L2/2L1 group, consisting of children whose age of first exposure was between birth and 4 years ($n=13$).¹ This latter group were dubbed child L2/2L1, rather than just 2L1, because although it includes three children who were exposed to Dutch at birth, only one of these children grew up in the one-parent/one-language environment which is typical of the 2L1 children studied in the literature. Furthermore, it is not clear whether children who are exposed to their L2 after birth but before age 4 pattern more like 2L1 children or L2 children (see e.g. Meisel to appear; Rothweiler 2006, for relevant discussion). The results for these two groups are presented in Table 2.

Table 2. Distribution of *de* and *het* with non-neuter and neuter nouns (target in bold): Subjects grouped according to age at first exposure

Gender of noun	Determiner	Child L2	Child L2/2L1
Non-neuter	<i>de</i>	89.5% 746/834	95.8% 207/216
	<i>het</i>	10.5% 88/834	4.2% 9/216
Neuter	<i>de</i>	75.7% 402/532	74.3% 101/136
	<i>het</i>	25.3% 136/532	25.7% 35/136

There are no significant differences between the two groups for non-neuter nouns (Mann Whitney: $df = 2$, $Z = -.246$, $p = .806$) or for neuter nouns (Mann Whitney: $df = 2$, $Z = -.890$, $p = .374$).

To determine whether there is an effect of length of exposure, the children were divided into three (arbitrarily defined) groups, depending on how long they had been resident in The Netherlands: short exposure (0;7 – 3;9; $n=27$), medium exposure (4;4 – 8;5; $n=18$) and long exposure (9;1 – 15;2; $n=13$). The results are given in Table 3.

¹ The lower bound in this definition of child L2 acquisition is set at age four because at this age, we can assume most (purely) grammatical principles (and, for example, the phonology) of the first language to be in place (e.g. Goodluck 1986; Guasti 2002). The upper bound is set at age seven because this is the age which has been put forward as the start of a decline in the ability to reach nativelike levels of L2 proficiency (DeKeyser 2000; Johnson and Newport 1989; 1991). (See Unsworth 2005a: 5-7 for relevant discussion.)

Table 3. Distribution of *de* and *het* with non-neuter and neuter nouns (target in bold): Subjects grouped according to length of exposure

Gender of noun	Determiner	Short	Medium	Long
Non-neuter	<i>de</i>	95.3 % 389/408	89.6% 379/423	84.5% 191/226
	<i>het</i>	4.7% 19/408	10.4% 44/423	15.5% 35/226
Neuter	<i>de</i>	90.2% 220/244	74.6% 211/283	49.0% 72/147
	<i>het</i>	9.8% 24/244	25.4% 72/283	51.0% 75/147

For non-neuter nouns, there were no significant differences between groups (Kruskal-Wallis: $df = 2$, $\chi^2 = 1.408$, $p = .495$). For neuter nouns, there was a significant difference between the short and long groups (Games-Howell post-hoc: mean difference = -41.1% , $p = .007$), and an almost significant difference between medium and long groups (Games-Howell post-hoc: mean difference = -29.5% , $p = .064$). The following pattern of development is observed: the production of targetlike *het* with neuter nouns increases significantly with length of exposure, but the long exposure group is still only at chance level.

Next, to determine whether there is an effect of type of exposure, children were divided into three different groups: a limited exposure group containing children whose only contact with Dutch is at school and possibly in basic interactions in shops, etc. ($n=10$), a moderate exposure group made up of children who have some Dutch-speaking friends and/or contact with Dutch neighbours ($n=31$), and an extensive exposure group with children who have attended a Dutch-speaking school and/or live with one or more native-speakers who speak Dutch to them ($n=17$). The results are presented in Table 4.

Table 4. Distribution of *de* and *het* with non-neuter and neuter nouns (target in bold): Subjects grouped according to type of exposure

Gender of noun	Determiner	Limited	Moderate	Extensive
Non-neuter	<i>de</i>	94.8% 145/153	86.9% 493/567	95.3% 321/337
	<i>het</i>	5.2% 8/153	13.1% 74/567	4.7% 16/337
Neuter	<i>de</i>	89.2% 91/102	76.9% 247/321	65.7% 165/251
	<i>het</i>	10.8% 11/102	23.1% 74/321	34.3% 86/251

For non-neuter nouns, there are no significant differences between the three groups (ANOVA: $df = 2$, $F = .578$, $p = .565$): all three groups consistently use *de*. For neuter nouns, there is a significant difference between the limited and extensive exposure groups (Games-Howell post-hoc: mean difference = 23.7% , $p = .039$). The use of *het* with neuter nouns increases significantly with (extensive) exposure, but the extensive exposure group nevertheless remains below chance level.

Finally, children were divided into three proficiency groups to determine whether there was an effect of proficiency. This division was based on a proficiency measure developed in Unsworth (2005), which, crucially, did not incorporate gender. There were three groups: low ($n=23$), mid ($n=15$) and high ($n=20$). The results based on proficiency are given in Table 5.

Table 5. Distribution of *de* and *het* with non-neuter and neuter nouns (target in bold): Subjects grouped according to proficiency

Gender of noun	Determiner	Low	Mid	High
Non-neuter	<i>de</i>	97.9% 332/339	86.0% 302/351	88.9% 337/379
	<i>het</i>	2.1% 7/339	14.0% 49/351	11.1% 43/379
Neuter	<i>de</i>	94.7% 198/209	76.5% 163/213	56.3% 142/252
	<i>het</i>	5.3% 11/209	23.5% 50/213	43.7% 110/252

For non-neuter nouns, there was a significant difference between the three groups when they were analysed together (Kruskal-Wallis: $df = 2$, $\chi^2 = 6.190$, $p = .045$), but no significant differences were found between different pairs of groups (Mann-Whitney: all combinations = $p > .01$ (incorporating Bonferroni adjustment)). For neuter nouns, a significant difference was observed between the low and high proficiency groups (Games-Howell post-hoc: -35.6% , $p = .001$), and an almost significant difference between the low and mid groups (Games-Howell post-hoc: -16.7% , $p = .053$). The use of *het* with neuter nouns increases significantly with increasing proficiency, but the high proficiency group remain around chance level.

The results thus far indicate that there is an effect for each of the variables investigated: as proficiency and length of exposure increases, and type of exposure becomes more intense, the use of *het* with neuter nouns increases. The percentage of neuter nouns with *het* correlates moderately with proficiency ($r = .574$, $p = .000$) and length of exposure ($r = .444$, $p = .000$) and weakly with type of exposure ($r = .293$, $p = .026$), but it does not correlate with age of first exposure ($r = -.116$, $p = .388$). A multiple regression analysis indicates that proficiency is the best predictor of percentage of neuter nouns with *het* (standardised coefficient beta = $.394$), closely followed by length of exposure (beta = $.301$); it should be noted, however, that the model only accounts for 36.5% of variance in the data ($r = .604$, $r^2 = .365$).

On the whole, the results indicate that children generally **fail** to produce *het* with neuter nouns. The question is whether this is the result of widespread failure or whether these group results hide some targetlike children. To address this question, an individual analysis was conducted. Children were categorised according to the response patterns they produced in different determiner/noun combinations. The results of this analysis are presented in Table 6. In this table, a tick indicates that 20% or more of the nouns of a given category were produced with the respective determiner. For example, a tick in the *de* column under non-neuter indicates that at least 20% of the non-neuter nouns produced by the child were preceded by the determiner *de* (as opposed to *het*). The cut-off point of 20% was used to be certain that any noise in the data were excluded. One child was excluded from the individual analysis because she failed to produce any neuter nouns.

Table 6. Distribution of *de* and *het* with non-neuter and neuter nouns (target = shaded): Individual response patterns

Pattern	Non-neuter		Neuter	
	<i>de</i>	<i>het</i>	<i>de</i>	<i>het</i>
❶ (n=38)	✓		✓	
❷ (n=12)	✓		✓	✓
❸ (n=2)	✓	✓	✓	✓
❹ (n=3)	✓	✓		✓
❺ (n=1)		✓		✓
❻ (n=1)	✓			✓
❼ (n=0)		✓	✓	
❽ (n=0)		✓	✓	✓
❾ (n=0)	✓	✓	✓	

Six different patterns are attested in the data. In pattern ❶, both non-neuter and neuter nouns are produced with *de*. *Het* is not produced (or, to be completely accurate, it is not produced at a rate higher than 20%). This is the most frequently occurring pattern, accounting for 66.7% (38/57) of the children. In pattern ❷, *de* is used with non-neuter nouns and both *de* and *het* are used with neuter nouns. This is the second most frequent pattern. In pattern ❸, *de* and *het* are used with both types of nouns, whereas in pattern ❹, neuter nouns occur exclusively with *het*, but *het* is also used with non-neuter nouns, along with *de*. In pattern ❺, *het* is used with both neuter and non-neuter nouns; there is no *de* (or, to completely accurate, *de* is not produced at a rate higher than 20%). Finally, there is the targetlike pattern ❻: *de* and only *de* is used with non-neuter nouns and *het* and only *het* is used with neuter nouns. there is one child who has this response pattern. Patterns ❼ through ❾, all logically possible, yet rather unexpected given the input, are not attested in the data.

To summarise, most children overgeneralise *de* and they sometimes or never produce *het*. There are a few children who appear to overgeneralise *het*, and there is only one completely targetlike child.

4. Discussion

Let us return to the research questions posed in section 3.2. The first asked whether English-speaking L2 children would also overgeneralise *de*, that is, whether their acquisition of *het* would be delayed. The answer to this question is an unequivocal yes. This result is consistent with previous findings for monolingual and bilingual L1 and L2 children. However, we cannot rule out the possibility that English could be the source of the overgeneralisation: the English definite determiner *the* is phonologically more similar to the non-neuter determiner *de* than to the neuter determiner *het*. English-speaking L2ers of Dutch may thus, at least in the initial stages of development, use *de* rather than *het* as a result of L1 transfer.

Unlike previous studies, there is also evidence for (what appears to be) overgeneralisation of the neuter determiner *het*. Six children produce more than 20% of non-neuter nouns with *het* (at a rate of between 22.7% and 91.7%). A similar pattern is observed in older Moroccan/Turkish L2/2L1 children (Cornips *et al.* 2006). These authors observed that, for the group as a whole, 23.6% of non-neuter nouns were produced with *het*. (No individual data are given in this paper.) This contrasts with the L2 French/Dutch children in a study by Hulk (2006), who did not overgeneralise *het*. This latter finding should be interpreted with caution in the present context, however, because only three of the 17 children produced *het* with neuter nouns at all. This is important because closer examination of the individual data in Table 6 reveals that it is only the children who produce *het* with (>20%) neuter nouns who overgeneralise *het* to non-neuter nouns. Thus, if there were more children who produced *het* (full stop) in Hulk's (2006) study, there may well have been more who overgeneralised this to non-neuter nouns.

The use of *het* with non-neuter nouns appears to differentiate L2/2L1 children from monolinguals. It is not clear, however, whether this is 'real' overgeneralisation in the sense that it indicates that these

children have recategorised nouns which they presumably once had as non-neuter to neuter.² Longitudinal data would be needed to determine whether this were the case. Another possibility is that once children use *het*, they do so indiscriminately. Although this may be so for the two children who produce both *het* and *de* with both types of nouns (i.e. pattern ③), the fact that there are 12 children who use *het* (as well as *de*) with neuter nouns only (i.e. pattern ②) suggests that this is not the case for all children.

Examining the proficiency level for the individuals in each response pattern group may provide some indication of the developmental route which these children take. The assumption here is that children with a low level of Dutch proficiency are at an earlier development stage than those who have a mid-level proficiency, and these children, in turn, are at an earlier developmental stage than the high proficiency children (see Unsworth 2005 Chapter 4 for more on the use of independent proficiency measures to determine developmental sequences from cross-sectional data). Most of the children (55.3% (21/38)) with pattern ①, that is, who produced only *de* with both non-neuter and neuter nouns, have a low proficiency level. The remainder are more or less equally divided between the mid and high proficiency levels (23.7% (9/38) and 21.1% (8/38), respectively). This suggests that this pattern characterises the early stages of development. The observation that several mid and high proficiency children also exhibit this response pattern, however, also suggests that some children may fossilise at this stage, a point to which I return below. Most of the children (66.7% (8/12)) with pattern ②, that is, who produce *de* with non-neuter nouns and both *de* and *het* with neuter nouns, have a high proficiency level. Of the remaining four children, two are low proficiency and two are mid proficiency. The two children who have pattern ③, that is, who produce both determiners with both types of noun, both belong to the mid proficiency group. Two of the three children with pattern ④, that is, who produce *de* and *het* with non-neuter nouns but only *het* with neuter nouns, have a high proficiency level, and the other child is in the mid proficiency group. The child with pattern ⑤, that is, the child who only produces *het* with both neuter and non-neuter nouns, also belongs to the high proficiency group. The relatively low number of subjects with patterns ③ through ⑤ makes it unfortunately rather difficult to draw any firm conclusions about any developmental sequence. It is nevertheless clear that the use of *het* with non-neuter nouns is a characteristic of the mid and high proficiency children. There are no low proficiency children with patterns ③ through ⑤, whereas there are (two) low proficiency children with response pattern ②. If this finding is meaningful in any sense, it could indicate that English-speaking L2/2L1 children's initial use of *het* is restricted to neuter nouns, and it may only be after using *het* with neuter nouns that children overgeneralise this to non-neuter nouns. Again, longitudinal data would be needed to confirm whether this speculation is more than just that.

Let us now return to the overgeneralisation of *de*. It is clear from the data that, like monolingual L1 children and other child bilinguals, English-speaking L2/2L1 children overgeneralise the non-neuter determiner *de* to neuter nouns. The second research question asked whether the children would fossilise in this stage. My answer to this question is a tentative 'possibly'. There are children who are (more or less) targetlike. Three subjects produce *het* with more than 70% of neuter nouns and they make a clear distinction between neuter and non-neuter nouns in their use of *het* and *de*. This suggests that the acquisition of syntactic gender (when this is not present in the L1) is not impossible (see White, Valenzuela, Kozłowska-MacGregor and Leung 2004 for similar findings with L2 adults; see also Sabourin, Stowe and de Haan 2006; but cf. Franceschina 2005). These three subjects have all had a lengthy and (relatively) intense exposure, suggesting the importance of input for the acquisition of this particular property of Dutch. These data suggest that lengthy/intense exposure leads to more targetlike responses. The group with the longest exposure (n=13) produces *het* with 51.0% (75/147) of neuter nouns. Eight of the 13 subjects in this group produce *het* with more than 20% of neuter nouns (ranging from 46.7% (7/8) to 100% (15/15)). Five of these eight subjects have had extensive exposure to Dutch

² This point rests on the crucial assumption – made throughout this paper and in previous studies on the same topic – that when learners produce *de* and *het* with a given noun, this is a reliable indicator of the grammatical gender which they assign to that noun. It is of course logically possible that learners may assign a different gender to a noun than in the target grammar. It is, however, unclear how one should ascertain whether this is the case. To the best of my knowledge, the only way of determining which gender learners assign to a particular noun is to have them produce the determiner for that noun. This is, after all, how native speakers know the gender of a noun: a neuter noun is a neuter noun because it occurs with *het*. In short, disentangling gender assignment from gender agreement in Dutch appears to be impossible.

and the remaining three have had moderate exposure. The only subject with the targetlike pattern ⑥ is the subject with the longest exposure in the extensive exposure group. Nevertheless, most of the L2/2L1 children overgeneralise *de* even after a relatively lengthy and moderately intense exposure. Furthermore, not all the children with the longest and most intense exposure are targetlike.

There are two possible explanations for this observation. The first is that it is too late for these children to reach the relevant threshold in order to acquire this particular property of Dutch. Several researchers have suggested that learners have to reach the relevant threshold in the input within a certain, age-related timeframe in order for acquisition to be successful (see Blom *et al.* 2005; Hulk 2006 on the acquisition of Dutch gender; see also Sorace 2005 on thresholds in the input to bilinguals). If we assume that the relevant timeframe in this case is the timeframe within which monolinguals acquire *het*, that is, by about age six, then all children who were first exposed to Dutch when older than six should be non-targetlike, quite simply because they will not have only had any input in the relevant timeframe.³ In the present study, there were five children whose age of first exposure was seven. Only one (C1C) uses *het*, producing it with five out of ten neuter nouns. However, all five of these children have had a short and limited/moderate exposure to Dutch. Given the observation made above that the only (more or less) targetlike children have all had a lengthy and relatively intense exposure to Dutch, it is unlikely that these five children, who have had considerably less exposure, would be targetlike anyway, even if there were no threshold at around age 6. In other words, although these data are consistent with the claim that the L2/2L1 children's failure to progress beyond the *de*-generalisation stage is because they are beyond the relevant threshold, they are not particularly convincing because there is a confounding factor which could account for them. Convincing data in favour of this claim would include L2 children/adults who were exposed to Dutch at age seven or later who, despite lengthy and intensive exposure to Dutch, were still non-targetlike. Data from such learners are available and these will be analysed to test this prediction in future research.

The second possible explanation for the observation that most children overgeneralise *de* even after relatively lengthy and moderately intense exposure is that, quite simply, they need more exposure. The definite determiner is probably the language-learning child's most salient clue to the gender of a given noun. As noted in section 2.1, however, the neuter definite determiner is significantly less frequent in the input than the non-neuter definite determiner: non-neuter nouns are twice as frequent as neuter nouns and the determiner *de* is also used for all plural nouns (both non-neuter and neuter). The neuter determiner *het* is also comparatively less salient, often occurring in the reduced form /ət/. The relative low frequency (and saliency) of the neuter determiner is of course a constant factor across monolingual and bilingual child populations. However, as noted by Hulk and Cornips (2006), bilingual children are exposed to less language input than monolingual children, by virtue of their bilingualism. If monolingual L1 children need around six years of input to acquire grammatical gender in Dutch, and if input is the crucial factor in the acquisition of this particular property of Dutch, then the input to bilingual children will have to be significantly more. If, for the sake of argument, we assume that the bilingual children are exposed to Dutch for around half the time, and to English for the other half, then this will mean that they would need **at least 12 years of exposure** to Dutch in order to be on a par with monolingual children.⁴ It turns out that the only targetlike child in the present study is one of the few subjects who has had approximately this number of years of input, namely 11 years, including one year at a Dutch nursery school. Of the four children with 12 or more years' exposure, three produce *de* only (pattern ①) and the other produces *de* with non-neuter nouns and both *de* and *het* with neuter nouns (pattern ②). These four children have only had limited or moderate exposure to Dutch, however. Taken together, these findings suggest that although lengthy exposure to Dutch may be necessary for targetlike acquisition of grammatical gender, it is not sufficient; (perhaps unsurprisingly) extensive exposure is also required. The reason why most of the children in the present study fail to produce the neuter definite determiner *het* may thus be insufficient exposure, where insufficient refers to both the length and the intensity of exposure. If this explanation is along the right lines, then with enough

³ It is possible that L2 children who were first exposed to Dutch at, say, age four or five, may also not have had enough exposure within the relevant timeframe. In order to test whether this is the case, it is necessary to know what constitutes enough input. This is not made explicit in the aforementioned studies.

⁴ For many of the children in the present study, this calculation is too generous: given that they attend (predominantly) English-speaking international schools and (mostly) live with English speakers, more than half of the input to which these children are exposed is likely to be in English.

(extensive) exposure, it is predicted that the acquisition of neuter gender should be possible, that is, there should be no fossilisation (which would be consistent with Hulk & Cornips 2006a), and we should therefore find more children with the targetlike pattern ⑥. On such an account, input is crucial for the targetlike acquisition of grammatical gender in Dutch: where no morphological cues are available, as is the case for neuter nouns in Dutch (with the exception of the diminutive, that is), the gender of each noun must be acquired individually. In order for children to do this, they must however be **sensitive** to the input. They have to know – at an (abstract) level – that, unlike in English, gender is a feature which serves to differentiate nouns in Dutch, and that this feature is the basis for certain agreement relations. Sensitivity to a feature which is not present in the learner's L1 feature inventory would have to stem from some internal mechanism driving the acquisition process, that is, from Universal Grammar.

5. Conclusion

Data were collected from English-speaking L2/2L1 children acquiring Dutch to determine whether they could successfully acquire grammatical gender agreement between the noun and definite determiner. 2L1/child L2 development in this domain was found to share both similarities and differences with monolingual L1 development. The results indicated that, as in previous studies on monolingual and bilingual children, the children in the present study overgeneralised the non-neuter determiner *de* to neuter nouns. In contrast to monolingual children, however, a number of the L2/2L1 children were also observed to overgeneralise the neuter determiner *het* to non-neuter nouns. This result suggests that this pattern, which was also found in ethnic community bilinguals in The Netherlands (where the L1/other language was Turkish or Moroccan Arabic), may serve as a marker of bilingualism in Dutch. Whether persistent overgeneralisation of *de* with neuter nouns, that is, fossilisation in this stage, should also serve as a marker of bilingualism remains unclear. The English-speaking children in the present study were not exposed to the 'ethnic Dutch' characteristic in the input of ethnic community bilingual children from previous studies, and hence this cannot be a factor in their behaviour. Consequently, if these children do fossilise in this stage, that is, if their ultimate attainment remains non-nativelike after lengthy and intense exposure, some other factor must be involved. As yet, however, it is uncertain whether these children **have** fossilised in this stage of *de*-overgeneralisation. It was suggested that the high number of non-targetlike children in the present study may in fact result from insufficient input. Future research will determine whether this is the case.

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