

On the L2 acquisition of the morphosyntax of German nominals¹

TERESA PARODI, BONNIE D. SCHWARTZ, AND HARALD CLAHSSEN

Abstract

Our understanding of how adults acquire grammar has to date been mainly based on investigations of clause structure and the morphosyntax of verbs. The development of nominals, however, has so far not been investigated at the same level of detail. Against this background, the purpose of the present study is to provide an in-depth description of the L2 acquisition of nominals in German and to assess the results in regard to two general research issues: (i) differences in the L1 and L2 development of inflectional morphology, and (ii) the role of transfer in L2 acquisition of grammar. We analyze data of untutored L2 German by speakers of Korean, Turkish, and Romance, concentrating on the realization vs. omission of D-elements, the marking of plurality, and the position of adjectives. While there are aspects of the data that evidence clear influence from the L1, we observe that, unlike in child L1 acquisition, nominal bound morphology poses a major acquisition problem for adult L2 acquirers independently of their L1. These results are reminiscent of what has been previously found for clause structure and the morphosyntax of verbs.

Introduction

During the last 20 years or so, research on nonnative language (L2) acquisition has yielded a number of basic facts and empirical results which seem to be generally accepted and shared even by researchers who have otherwise opposing theoretical views. One general finding on which there seems to be agreement among L2 researchers is that the acquisition of (morpho)syntax in adult L2 development is influenced by the acquirer's first language (L1) grammar. The theoretical interpretation of the role of transfer is, of course, controversial, and the conclusions have not been uniform, with some arguing for strong (White 1989) or even full

(Schwartz and Sprouse 1996) transfer of the L1 grammar, while others have argued for selective or partial transfer (Eubank 1993/94; Vainikka and Young-Scholten 1994). Clearly, however, the basic facts are established and the question of whether transfer effects exist in L2 grammatical development, an issue to which much ink has been devoted in the 1970s (e.g. Dulay and Burt 1974; Kellerman 1979), is no longer seriously debated.

Another descriptive generalization on which L2 acquisition researchers seem to have achieved agreement is that inflectional morphology in the verbal domain poses major acquisition problems for adult L2 acquirers (henceforth L2ers). Early interlanguages are reported to be impoverished with respect to the target-language (TL) verbal inflectional system or even to lack such inflectional morphology (for tense, subject–verb agreement, etc.) altogether, and even after TL verbal inflections start to appear, many L2ers do not use them systematically (for German L2 development, see, e.g., Klein 1986; Meisel 1991). In more advanced interlanguage, studies by Lardiere (2000) and by Prévost and White (2000) also found verbal inflectional paradigms to be non–target-like, there being more errors of omission, rather than commission. Moreover, when there are lexical means that (partially) express what inflectional morphology realizes, as in the case of temporal reference, L2ers at early stages often use lexical devices such as adverbials, calendric expressions, and temporal conjunctions (see Bardovi-Harlig 1994; Meisel 1986; von Stutterheim 1991); the same has been found for the expression of modality in early L2 development, where lexical devices appear earlier than inflectional morphology (see Dittmar and Terborg 1991). By contrast child L1 acquirers productively use inflectional affixes early on in acquisition as shown, for example, by the literature on the acquisition of verb inflection; see, for example, Marcus et al. (1992) for English and Clahsen et al. (2002) for Spanish. In the case of temporal reference, children seem to use verb inflection earlier and to a greater extent than lexical expressions such as adverbials (see, e.g., Behrens 1993: 162, 186; Meisel 1985).

Hence, the acquisition of verbal inflectional morphology is an area in which we find clear L1–L2 differences. The theoretical interpretation of these L1–L2 differences is controversial (see Meisel 1991 for some discussion, and for an alternative view, Schwartz 1991), but the basic observation that adult L2ers have specific difficulty acquiring and using such inflectional morphology seems to be generally accepted.

The two descriptive generalizations discussed above have to date been shown to hold for clause structure and the morphosyntax of verbs. The acquisition of nominal structure and of the morphosyntax of nouns and determiners has not received the same amount of attention in acquisition

studies (but see Koehn 1994 and Müller 1994 for bilingual first language acquisition and Bruhn de Garavito and White 2000 for L2 acquisition and Wegener 1994 for L2 acquisition). Further clarification is needed with respect to the question of whether previous findings from studies of clause structure and verb inflection can be generalized to the domain of nominals or whether there are acquisitional differences between these two structural domains.

To this end, this study investigates the acquisition of nominals in German by native speakers of Korean, Turkish, Italian, and Spanish — the latter two of which we group together as “Romance.” The subjects’ L1s represent typologically different languages, thereby enabling specific questions about L1 influence. Specifically, the three L1s and German exhibit interesting contrasts with respect to the morphosyntax of nominals, a necessary prerequisite for increasing our understanding of the role of L1 in (adult) L2 acquisition.

The data we rely on come from untutored, adult L2ers of German and are oral production data, both longitudinal and cross-sectional. The linguistic focus of our study is on four closely related aspects of the morphosyntax of nominals: (i) the use of determiners and determiner-like elements within nominals; (ii) the use of lexical versus inflectional devices for marking plurality; (iii) plural concord within nominals; and (iv) the position of the adjective in relation to the noun (i.e. prenominal or post-nominal).

The paper is organized as follows: we will first briefly describe German, Korean, Turkish, and Romance with respect to these four aspects of the morphosyntax of nominals. Section 2 describes the L2 subjects in our study, and section 3 presents the results and compares them with the L1 acquisition of German nominals. In section 4 we discuss the implications of our findings. We end with a brief conclusion.

1. Expanded nominals in German, Korean, Turkish, and Romance

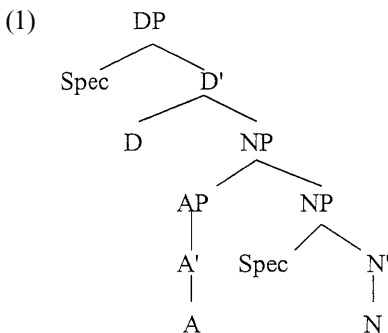
In addition to the head noun, a nominal can include determiners (like indefinite and definite articles), modifiers (like adjectives) and complements (e.g. “of the city” in “the destruction of the city”). As there were virtually no complements to nouns in the corpora, we will unfortunately not be able to consider this, although it would have been quite interesting because the order between head noun and complement varies in these four languages. To remain theory-neutral, we include both determiners and non-adjective modifiers under the term “D-element.” In what follows, this encompasses articles, demonstratives, possessive pronouns, numerals, and quantifiers.²

In the following, we discuss the similarities and differences among the four languages of interest here in relation to the existence of D-elements and whether their realization is in general obligatory. We will also discuss the ordering of elements inside the nominal, both its most neutral instantiations as well as possibilities for variation, with special attention given to adjective positions. We will ignore gender marking (which exists in German and Romance) and case marking (which exists in German, Korean, and Turkish), but we will look at number features.³ Specifically, we will focus on (i) whether the language has plural marking and if so (ii) whether it is obligatory or optional, and (iii) whether grammatical number concord is realized inside the nominal, that is, between the head noun and adjectives and/or one or more D-elements. The use of quantifiers and numerals as markers of plural and their interaction with morphological markers will also be taken into account.

1.1. *German*

Several analyses of the German DP have been offered, for example, Bhatt (1990); Haider (1988); Löbel (1990); Olsen (1989); Penner (1993); Penner and Schönenberger (1992); Tappe (1990). While certain differences distinguish these proposals, they all agree on the following points: (i) the DP is head-initial; (ii) the adjective is base-generated before the noun; (iii) concord is realized syntactically within the DP.

These properties can be represented in the structure (1). Note that the adjective phrase (AP) in (1) is posited as an adjunction to NP, an analysis which accounts for adjective iteration.⁴ As none of the L2ers in question has yet attained native-like control over the German DP, (1) is merely offered as an approximate target for readers to keep in mind as the L2 data are presented.



As for concord, we will assume that features under D reach the other elements of the nominal by percolation and (Spec-Head) agreement. German has both indefinite and definite articles (which indicate one of three gender classes), and except in certain cases (plural indefinite and generic uses and mass nouns), a determiner is obligatory. As stated earlier, we will ignore the gender and case distinctions of the noun, which are realized on the article/demonstrative/possessive pronoun as well as on quantifiers and adjectives.

The order in the expanded German nominal is fixed: article/demonstrative, possessive pronoun, numeral/quantifier, adjective, head noun (see [2]).

- (2) a. seine drei großen Bücher
his.pl three big.pl books
b. meine vielen interessanten Bücher
my.pl many.pl interesting.pl books

Plurality in German is marked on the head noun and on D-elements and adjectives. There are five different endings (*-ø*, *-e*, *-er*, *-[e]n* and *-s*) along with possible vowel changes (see examples in [3]).

- | | | | | |
|--------|----------------------------|------------|-------------|----------------------|
| (3) a. | <i>-ø</i> (\pm umlaut) | der Daumen | die Daumen | 'the thumb/thumbs' |
| | | der Apfel | die Äpfel | 'the apple/apples' |
| b. | <i>-e</i> (\pm umlaut) | der Hund | die Hunde | 'the dog/dogs' |
| | | die Kuh | die Kühe | 'the cow/cows' |
| c. | <i>-er</i> (\pm umlaut) | das Kind | die Kinder | 'the child/children' |
| | | das Huhn | die Hühner | 'the hen/hens' |
| d. | <i>-(e)n</i> | die Straße | die Straßen | 'the street/streets' |
| e. | <i>-s</i> | das Auto | die Autos | 'the car/cars' |

While there is plural concord between the head noun and the elements in the extended German nominal, it is not realized uniformly on all elements within the DP; for example, the plural marking on prenominal adjectives is *-e* or *-(e)n* irrespective of the plural allomorph that appears on the noun; see examples in (4):

- (4) a. interessant-e Bücher/Autos/Kühe
interesting.pl. books/cars/cows
b. jene drei interessant-en Bücher/Autos/Kühe
those three interesting.pl books/cars/cows

1.2. Korean

Unlike German and Romance, Korean does not have articles, either indefinite or definite. Definiteness can, but need not, be signaled by the de-

monstrative *i* ‘this’, *ku* ‘that’ or *cə* ‘that over there’ (Kim 1987: 985); thus the appearance of *i/ku/cə* is not obligatory.

- (5) chaek/ chaek/ (ku) chaek
 book (‘a book’)/ this book/ that book

All D-elements — including demonstratives, possessive pronouns (which consist of a pronoun plus the unique genitive marker *-uy* and which are optionally overt), numerals, quantifiers — as well as adjectives precede the head noun (see [6]).

- (6) a. ku -uy se -kwon -uy kun chaek
 3.sg-gen three-class -gen big book
 ‘his three big (volumes of) books’
 b. na -uy manhun caemiissnun chaek
 1.sg-gen many interesting book
 ‘my many interesting books’

Word order among these prenominal elements is free, with the only restriction that the head noun be last (see [7]).⁵

- (7) a. ku se -kwon -uy caemiissnun chaek
 that three-class -gen interesting book
 ‘those three interesting (volumes of) books’
 b. ku caemiissnun se-kwon-uy chaek
 c. se-kwon-uy ku caemiissnun chaek
 d. caemiissnun ku se-kwon-uy chaek
 e. se-kwon-uy caemiissnun ku chaek
 f. caemiissnun se-kwon-uy ku chaek

As for number concord, there is none in Korean. In a plural context, the unique plural marker *-tul* can be suffixed to the head noun. Again, this marker is not obligatory; the use of a quantifier or numeral in fact disfavors the appearance of the plural marker (Kim 1987: 894). Thus, the pluralization of the head noun does not trigger any kind of concord with the prenominal elements (see [8]).

- (8) a. ku caemiissnun chaek
 that interesting book
 ‘that interesting book’/‘those interesting books’
 b. na -uy manhun caemiissnun chaek-tul (cf. [6b])
 1.sg-gen many interesting book -pl
 ‘my many interesting books’
 c. ku se -kwon -uy caemiissnun chaek-tul (cf. [7a])
 that three-class -gen interesting book -pl
 ‘those three interesting (volumes of) books’

1.3. Turkish

In Turkish, the indefiniteness of a noun is signaled by *bir*, which is actually the numeral 'one'; Turkish has no definite article (Underhill 1976: 38), although the demonstratives *bu* 'this', *o/şu* 'that' are used in combination with a noun to signal specificity (Underhill 1976: 122). The use of *bir*, *bu*, *o*, and *şu* is optional (see [9]).

- (9) (bir) kitap / (bu) kitap / (o/şu) kitap
 a/one book / this book / that book

Similar to Korean, all D-elements as well as adjectives precede the head noun in Turkish (see [10]). D-elements include articles, demonstratives, possessive pronouns (consisting of what is generally referred to as the nominative form of the pronoun plus the person-agreeing genitive marker), numerals, and quantifiers.⁶

- (10) a. o -n -un üç kalın kitab- ı
 3.sg-linker-gen three thick book -3.sg
 'his/her three thick books'
 b. ben-im pekçok ilginç kitab- ım
 1.sg-gen many interesting book -1.sg
 'my many interesting books'

Concerning order, there is some freedom among these prenominal elements; the most neutral order appears to be: possessive pronoun (which is optionally overt [Underhill 1976: 92]), demonstrative, numeral/quantifier, adjective, indefinite article (Underhill 1976: 125; Kornfilt 1987: 637) (see [11]).

- (11) a. şu üç ilginç kitap
 that three interesting book
 'those three interesting books'
 b. şu ilginç üç kitap

As for number marking, the plural morpheme (*-lar*) is suffixed to the head noun when there is no other prenominal indication of plurality; in other words, the plural marker is (usually [B. Haznedar, p.c.]) absent with prenominal numerals and quantifiers and otherwise is obligatory in plural contexts (Kornfilt 1987: 633) (see [12]). As in Korean, there is no number concord inside the nominal in Turkish.

- (12) a. şu ilginç kitap
 that interesting book

- b. *şu ilginç kitap-lar* (cf. [11a], without ‘-lar’ [‘-pl’])
 that interesting book -pl
 ‘those interesting books’
- c. **şu üç ilginç kitap-lar* (cf. [11a], with ‘üç’ [‘three’])
 that three interesting book -pl

1.4. *Romance*

Given the overwhelming similarities between Italian and Spanish, we collapse them. Determiners — which can be either indefinite or definite (and which fall into two gender classes) — are obligatory (see [13]).

- (13) a. (Italian) *un/il/questo/quel libro*
 (Spanish) *un/el/este/ese libro*
 a/the/this/that book
- b. (Italian) *una/la/questa/quella donna*
 (Spanish) *una/la/esta/esa mujer*
 a/the/this/that woman
- c. (Italian) *dei/i/questi/quei libri*
 (Spanish) *unos/los/estos/esos libros*
 some/the.pl/these/those books
- d. (Italian) *delle/le/queste/quelle donne*
 (Spanish) *unas/las/estas/esas mujeres*
 some/the.pl/these/those women

Articles, demonstratives, numerals, and quantifiers (including the negative) precede the noun, as can possessive pronouns (see [14]).

- (14) a. (Italian) *i suoi tre libri*
 the.pl his/her+pl three books
 ‘his/her three books’
- b. (Spanish) *sus tres libros*
 his/her+pl three books
- c. (Italian) *i miei molti libri*
 the.pl my+pl many+pl books
 ‘my many books’
- d. (Spanish) *mis muchos libros*
 my+pl many+pl books

Adjectives generally occur after the noun. Some attributive adjectives may also occur prenominaly (compare [15a] and [15b]), sometimes caus-

ing a change in meaning (compare [15c] and [15d]). A subset of non-attributive adjectives only occurs prenominally (see [15e] and [15f]).

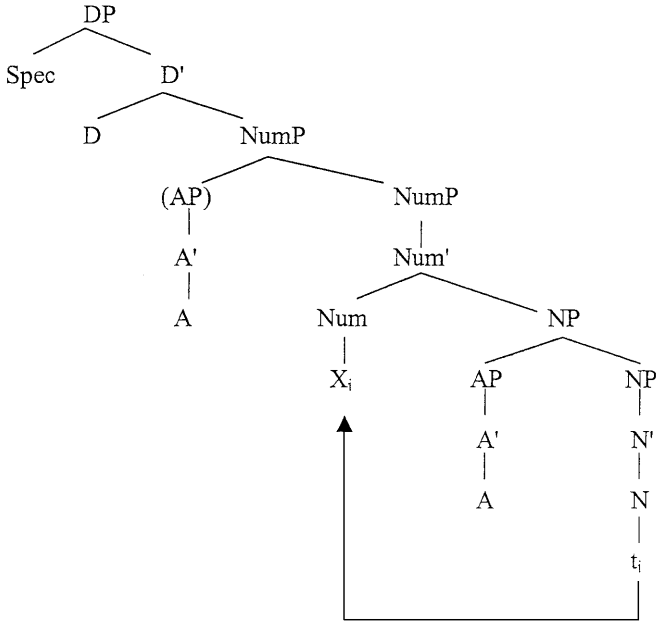
- (15) a. (Italian) quei tre libri interessanti
 (Spanish) esos tres libros interesantes
 those three books interesting+pl
 ‘those three interesting books’
- b. (Italian) quei tre interessanti libri (cf. [15a])
 (Spanish) esos tres interesantes libros (cf. [15a])
 those three interesting+pl books
 ‘those three interesting books’
- c. (Italian) un uomo povero
 (Spanish) un hombre pobre
 a man poor
 ‘a poor man’
- d. (Italian) un pover'uomo
 (Spanish) un pobre hombre
 a poor man
 ‘a pitiable man’
- e. (Italian) la mera necessità
 (Spanish) la mera necesidad
 the mere necessity
- f. (Italian) *la necessità mera
 (Spanish) *la necesidad mera

Number concord is realized between the head noun and D-elements (articles, demonstratives, possessive pronouns, quantifiers (including the negative)), and between the head noun and adjectives: that is, if the head noun is plural, then so are all these other elements (see [16]).

- (16) a. (Italian) quel libro interessante
 (Spanish) ese libro interesante
 that.sg book.sg interesting.sg
 ‘that interesting book’
- b. (Italian) quei libri interessanti
 (Spanish) esos libros interesantes
 those books interesting+pl
 ‘those interesting books’

Bernstein (1991, 1992, 1993) argues that the adjective is generated prenominally in Romance languages. The postnominal position of the adjective is derived from noun movement over the adjective, as schematized in (17) (Bernstein 1992: 108, [11a]):⁷

(17)



According to Bernstein (among others, e.g. Cinque 1994; Picallo 1991), the head noun moves (as depicted by the X in [17]) from N to the head of number phrase (NumP), where number features are checked.

1.5. Preliminary summary

A summary of the differences and similarities among the four languages with regard to their nominal systems is shown in Table 1.

For speakers of Italian and Spanish, while the specific lexical items instantiating the indefinite and definite articles will need to be learned, the

Table 1. Korean, Turkish, Romance, and German nominals

	Korean	Turkish	Romance	German
Obligatory article/demonstrative?	-	-	+	+
Overt plural marker on the noun?	+	+	+	+
(i) ever obligatory?	-	+	+	+
(ii) ever obligatorily absent?	-	+	-	-
Number concord?	-	-	+	+
Prenominal adjectives?	+	+	+	+
Postnominal adjectives?	-	-	+	-

TL (German) and the L1 are similar with regard to the obligatoriness of filling D.⁸ Moreover, German and both Romance languages instantiate concord inside the nominal, and are therefore more similar to each other than is either Korean or Turkish to German. Note, however, that the way concord is morphologically spelled out differs in German and Romance and that the multifunctionality of German formatives, which mark case, gender, and number, differs from the systems of Romance. Nevertheless, speakers of Romance might have an advantage over the other learner groups in acquiring plural concord in the German nominal. Finally, while adjective placement is parallel in German, Korean, and Turkish, post-nominal adjectives (as found in Romance) are ungrammatical in German.

On the basis of previous research on L2 clause structure and the morphosyntax of verbs (see “Introduction”) and based on the properties in the nominal domain of the languages under study, we can make the following acquisition predictions for the L2 morphosyntax of German nominals:

(18) Predictions

- a. Omission rates of D-elements in L2 German should be higher among L1 Korean and Turkish speakers than in L1 Romance speakers, particularly at early stages.
- b. Similar to L2 findings on the early realization of adverbials to mark temporality at the sentential level, the early realization of L2 plurality in the nominal domain should be via numerals and quantifiers.
- c. Even though number concord in the learners’ L1s is different from concord in German, Romance speakers may initially have an advantage over L1 Korean and Turkish speakers acquiring plural concord in the German nominal.
- d. Only L1 Romance (but not L1 Korean and L1 Turkish) speakers are expected to produce (incorrectly placed) post-nominal adjectives in their L2 German.

2. Subjects

We have investigated data from three groups of adult acquirers of German: (i) longitudinal data from Romance speakers; (ii) cross-sectional data from Korean speakers; (iii) longitudinal and cross-sectional data from Turkish speakers. None of the subjects had received any kind of intensive language instruction in the TL. The data come from recordings of speech production in informal interviews. Some background information can be found in Table 2.

Table 2. *Background information on the L2 learners*

	Type of data	Source	Age at first recording	Time after immigration to Germany
<i>L1: Korean</i>				
Gabho	cross-sectional	LEXLERN ^a	38	13 years
Changsu			60	6 years
Yangsu			38	13 years
Dosik			34	1.5 years
Ensook.			41	4 years
Chipyong			29	9 months
Samran			35	3 years
Jungsuk			39	18 years
<i>L1: Turkish</i>				
Kadir	cross-sectional	v. Stutterheim ^b	47	9 years
Ayse I	longitudinal	ESF ^c	17	16 months
Ayse II				22 months
Ayse III				28 months
Ilhami I	longitudinal	ESF ^c	16	10 months
Ilhami II				18 months
Ilhami III				29 months
<i>L1: Romance</i>				
Ana I	longitudinal	ZISA ^d	22	5 months
Ana III				24 months
Bongiovanni I			18	1.5–4 months
Bongiovanni III				20 months
Bruno I			16	1.5–3 months
Bruno II				6–16 months
Bruno III				25 months
Lina I			33	2–4 months
Lina II				10.5 months
Lina III				17 months

a. Clahsen et al. (1990); Vainikka and Young-Scholten (1994)

b. von Stutterheim (1986)

c. Klein and Perdue (1992)

d. Clahsen and Meisel (1985)

The longitudinal data of the Romance speakers come from the ZISA Project (Clahsen and Meisel 1985; Clahsen et al. 1983). Of the four speakers studied here, only Ana had tuition in German for a short time. She and Bruno had more contact with Germans than the other two. Recordings of spontaneous speech were taken at regular intervals over a period of approximately two years, starting at about 1.5 to five months after their arrival in Germany. They were tape-recorded interacting with

a native speaker of German. The recordings were transcribed in normal orthography but phonetic transcription was used when necessary. We have divided the period of observation into three cycles. The first cycle represents an early stage of L2 acquisition, that is, 1.5 to five months after first coming to Germany; for each subject we have examined several recordings during this period. We compare these with their data from the end of the period of observation, that is, 1.5 to two years later. For two learners, Bruno and Lina, we have additionally investigated data from an intermediate point in time; see Table 2 for further details.

The cross-sectional data from the Koreans are spontaneous speech recordings collected in the LEXLERN Project (Clahsen et al. 1990). As is clear from Vainikka and Young-Scholten's (1994) analysis of word order and subject-verb agreement, these eight subjects are at different levels of attainment in the TL. Dosik, Ensook, and Samran attended a language course (twice a week for three months). Jungsuk and Gabho used a self-teaching book, and the three others received no tuition. Only Jungsuk, who worked as a nurse, had regular contact with the German-speaking community. The contact with Germans was very limited in the case of Dosik, Yangsu, and Samran, and even more so for Changsu, Gabho, Ensook, and Chipyeong. The data we rely on for these speakers come from free conversations, and the recordings have been transcribed in a similar fashion to the ZISA data.

The cross-sectional data from the Turkish speaker Kadir have been collected by Christiane von Stutterheim (1986). Kadir did not receive formal tuition in German and had very reduced contact with the German community. As is clear from von Stutterheim's study of temporal reference, Kadir had not acquired much of the grammar of German when the recording took place. To express temporal reference, Kadir uses only adverbs and no target-like verb inflections (von Stutterheim 1986: 162ff., 322). The longitudinal data from the two other Turkish speakers, Ayse and Ilhami, come from the ESF Project (see Klein and Perdue 1992). They both took part in a vocational training program for immigrants, which included a three-month language course. Ayse's contact with Germans was quite limited during her participation in the project. The same applies to Ilhami, who lived and worked with other Turks. Nevertheless in comparison to Kadir, Ayse and Ilhami were relatively more advanced in their acquisition of German when the first recordings took place. Temporal reference, for example, is marked by inflected verb forms rather than by adverbials only (Klein and Perdue 1992: 174). Three recordings over a period of approximately one year were taken from them; we will refer to these as cycles, I, II, III (see Table 2 for the time intervals). The transcription conventions are similar to those described above.

3. Results

The presentation of results is divided into two parts. First we examine the predictions in (18) separately for each L1 group (Korean, then Turkish, then Romance). In the second part, we will compare the three language groups. The order in which the results are presented will be parallel in both parts: presence vs. absence of D-elements, formal marking of plurality, number concord, placement of adjectives within nominals. The methods of analysis are the same in both parts and for the different language groups; they will be explained in the next section using the data from the Koreans as an example.

3.1. Analyzing the language groups separately

3.1.1. The Korean speakers.

D-omissions. We have analyzed all obligatory contexts for D-elements, that is, those in which a D-element is required in German. The D-omission rate in Table 3 was calculated as shown in (19), and two example utterances are given in (20).

$$(19) \frac{\text{missing D-elements}}{\text{D-element present} + \text{D-element absent in obligatory contexts}}$$

Table 3. *The Korean subjects*

	D-omission rate	Plural marking by Q or numeral	Other D-elements in plural contexts	Omitted N-plural marker	Double marking of plurality
Gabho	87/131 (.66)	14/14 (1.)	0	9/14 (.64)	— ^a
Changsu	100/120 (.83)	16/19 (.84)	3	9/19 (.47)	2/4 (.50)
Yangsu	73/129 (.57)	22/26 (.85)	4	12/26 (.46)	2/5 (.40)
Dosik	56/121 (.46)	17/26 (.65)	9	10/26 (.39)	2/2 (1.)
Ensook	37/88 (.42)	9/13 (.69)	4	5/13 (.39)	1/3 (.33)
Chipyong	77/130 (.59)	22/26 (.85)	4	4/26 (.15)	2/6 (.33)
Samran	102/265 (.39)	8/9 (.89)	1	1/9 (.11)	2/8 (.25)
Jungsuk	23/60 (.38)	15/20 (.75)	5	3/20 (.15)	5/5 (1.)

a. “—” means there were no relevant contexts. “0” means that there were obligatory contexts, but that the required forms were not produced.

- (20) a. (Yangsü)
 *is gute firma
 is good company
Correct form:
 es ist eine gute Firma
 it is a good company
- b. (Ensook)
 das kind hat drei schneemann gemacht
 the child has three snowman made

Table 3 shows that the rate of D-omissions among the Korean speakers is very high, ranging from 83% (Changsü) to 38% (Jungsük).

Plural marking. We examined two aspects of the marking of plurality, the use of lexical (as opposed to morphological) markers and the realization of plural concord within the nominal.

The column “Plural marking by Q(uantifier) or numeral” in Table 3 shows the frequency of plural marking by lexical means, that is, quantifiers (e.g. *viele* ‘many’) and numerals. The column “other D-elements in plural contexts” shows how many other plural-marked D-elements occurred in plural contexts. We included all nominals with plural meaning in which some sort of quantifier/numeral or D-element was present in addition to a noun. For quantifiers and numerals we included only those nominals with plural meaning which contained a quantifier or numeral plus a noun, for example, *zwei Pferd-e* ‘two horse-s’. As for the D-element, it could be an article (e.g. *die* ‘the.pl’), a demonstrative (e.g. *diese* ‘these’) or a possessive pronoun (e.g. *meine* ‘my.pl’). In the column “omitted N-plural marker,” we counted how frequently obligatory plural marking on the noun was omitted in D+N combinations, that is, how often subjects produced nominals such as **zwei Pferd* without any inflectional marking (as opposed to the TL *zwei Pferde*). (It should be noted that we have ignored plural allomorphy for this analysis, i.e. whether the correct plural allomorph for any given noun was produced. Instead, we included all cases in which some plural affix was produced on the noun irrespective of whether it was morphologically correct or incorrect.) We excluded nouns that have the same form in the singular and plural, e.g. *Lehrer* ‘teacher(s)’, and pluralia tantum nouns such as *Leute* ‘people’, *Eltern* ‘parents’.

Table 3 shows that the Korean L2ers encode plurality mainly by quantifiers and numerals. Gabho, who uses this type of marking exclusively (14/14), constitutes one end of the scale; the other end is represented by Dosik, who uses quantifiers and numerals in 65% of all plural contexts (17/26).

Plural concord. In German, the number feature spreads over the entire DP. There are cases in which plural morphology shows up on every element (D, A, N see [21a]), on only one (on the D-element [21b] or on N [21b']), or on none (see [21c]).

- (21) a. die alt-en Männ-er
the.pl old-pl man -pl
b. viel-e Kilometer-ø
many-pl kilometer-ø
b'. zwei Frau -en
two woman-pl
c. zwei Kilometer-ø
two kilometer-ø

To identify clear cases of plural concord in the data represents an extremely difficult task, since when dealing with affixes on the German noun we have to exclude many cases which might not be an unequivocal plural marking. We are then left with a very modest number of clear plural markings and these might yield a distorted picture.

We first extracted all nominals with plural meanings in which some sort of D-element or adjective was present in addition to a noun. Taking together the data of all three language groups, 11% of these were cases such as (21b), (21b') and (21c), which do not reveal anything about the acquisition of number concord (due to a lack of overt markings on both elements of the DP) and thus were excluded. The remaining cases are "double markings," that is, they have an overt plural marking on at least two different elements of the nominal, as in (22); pluralia tantum nouns (e.g. *Eltern* 'parents') were not included here:

- (22) a. klein -e Topf-en
little-pl pan -pl
Correct form: kleine Töpfe
b. die Kind -er
the.pl child-pl

In Table 3, raw numbers and percentages are given in the fourth and last columns, respectively, for omissions of plural marking on the noun in obligatory contexts and for double marking of plurality. Table 3 shows that for the Korean speakers, overt plural marking on the noun is omitted with a mean of 35% (53/153 cases, with a range of 64% to 11%) and that the mean rate of double marking is 48% (16/33 cases, with a range of 25% to 100%).

Adjective placement. If the L1 grammar influences L2 acquisition of German nominal structure, we expect the Korean subjects to produce

only prenominal adjectives in their L2 German, since Korean and German are parallel in this respect. Our expectation is fulfilled with only one exception: 101 out of 102 adjectives do appear prenominally, as in (23a). The one exception is an utterance by Gabho (23b).

(23) (Gabho)

- a. das arme Fisch
the poor fish
Correct form: der arme Fisch
- b. *Sprache hochdeutsche
language high German
Correct form: Hochdeutsch

3.1.2. *The Turkish speakers.*

D-omissions. As regards the three Turkish speakers, it is clear from both von Stutterheim's (1986: 162) and Klein and Perdue's (1992: 172ff.) findings that Ayse and Ilhami are more advanced than Kadir. This difference is reflected in the D-omission rates. The frequency of D-omissions in Kadir's data (58%) is higher than for Ayse and Ilhami, whose rates range between 9% and 27%. Ayse's longitudinal data demonstrate a clear developmental pattern with declining D-omission rates over time, while Ilhami's omission rate stays constant at about 15% throughout the period of observation.

Plural marking. The longitudinal data from Ayse and Ilhami reveal that lexical plural marking rates are very high in the earlier recordings. In the first cycle, the proportion of quantifiers and numerals as compared to other D-elements is 77% for Ayse and 70% for Ilhami; plural morphology is lacking on the noun in, respectively, 38% and 30% of the cases. The proportion of quantifiers and numerals to other D-elements decreases over time in both subjects. From von Stutterheim's (1986) study, we know that the L2 German of the third Turkish subject, Kadir, represents an elementary variety. This is consistent with the high proportion of quantifiers and numerals to other D-elements in Kadir's data (= 86%).

Plural concord. Table 4 shows that the Turkish speakers (except Ayse II with 33%) exhibit high double-marking rates of 83% to 100%. The small number of unambiguous cases (= 24 altogether) may have inflated their actual performance, however. Note also from the fourth column of Table 4 the relatively high omission rates of plural markings, particularly at early stages of development, 38% and 30% for Ayse and Ilhami at the beginning of the observation compared with 13% for Ayse II and 0 (out

Table 4. *Turkish speakers*

	D-omission rate	Plural marking by Q or numeral	Other D- elements in plural contexts	Omitted N-plural marker	Double- marking of plurality
Kadir	58/100 (.58)	24/28 (.86)	4	6/28 (.21)	4/4 (1.) ^a
Ayse I	29/107 (.27)	10/13 (.77)	3	5/13 (.38)	5/6 (.83) ^b
Ayse II	12/54 (.22)	3/8 (.38)	5	1/8 (.13)	2/6 (.33)
Ayse III	3/32 (.09)	0/1	1	0/1	1/1 (1.)
Ilhami I	18/116 (.16)	7/10 (.70)	3	3/10 (.30)	1/1 (1.)
Ilhami II	12/79 (.15)	1/11 (.09)	10	0/11	4/4 (1.)
Ilhami III	18/132 (.14)	2/6 (.33)	4	0/6	2/2 (1.)

a. Kadir produces two types and four tokens.

b. Ayse produces four types and six tokens.

of 11) for Ilhami II and 0 (out of 6) for Ilhami III. Kadir's omission rate of plural inflection on the noun is, at 21%, lower than Ayse's and Ilhami's at their early stages.

Adjective placement. A total of 103 adnominal adjectives occur in the data of the Turkish speakers, and all of them appear prenominally, as expected if the L1 influences the acquisition of the L2.

3.1.3. *The Romance speakers.*

D-omissions. The earliest period of L2 acquisition is best represented in the data of the Romance subjects, as the recordings started very soon after their arrival in Germany. Nevertheless, during this initial period of 1.5 to five months, the D-omission rates of the Romance speakers are already quite low (between 15% and 37%) compared to the other L2ers.

Plural marking. The data from the Romance subjects also show a high incidence of lexical plural marking at early stages of L2 development. Table 5 shows high proportions of quantifiers and numerals to other D-elements in the early period of acquisition, ranging from 71% to 100%. These figures decrease over time, but even after the two-year period of observation, there is still a high proportion of quantifiers and numerals (ranging from 67% to 78%) relative to other D-elements in plural contexts.⁹

Plural concord. The Italian speakers were omitted from the analysis of plural concord for the following reason: since Italian speakers tend to produce a schwa in words ending with a consonant (presumably a carry-

Table 5. *The Romance speakers*

	D-omission rate	Plural marking by Q or numeral	Other D- elements in plural contexts	Omitted N-plural marker	Double marking of plurality
Ana I	41/110 (.37)	17/24 (.71)	7	6/24 (.25)	1/1 (1.)
Ana III	2/67 (.03)	4/6 (.67)	2	2/6 (.33)	— ^a
Bongiov. I	17/56 (.30)	12/12 (1.)	0		
Bongiov. III	11/73 (.15)	13/19 (.68)	6		
Lina I	22/111 (.20)	30/33 (.91)	3		
Lina II	3/58 (.05)	7/10 (.70)	3		
Lina III	5/40 (.13)	14/18 (.78)	4		
Bruno I	19/123 (.15)	21/28 (.75)	7		
Bruno II	15/251 (.06)	46/70 (.66)	24		
Bruno III	1/38 (.03)	0/4 (0)	4		

a. “—” means there were no relevant contexts. “0” means that there were obligatory contexts, but that the required forms were not produced.

over from CV phonology), and a schwa form is also one of the plural allomorphs in German (e.g. *Pferd-e* ‘horses’), it is hard to determine whether a noun-final schwa produced by an Italian speaker is a true plural affix or rather a purely phonological phenomenon.

For the Spanish speaker Ana there was only one unambiguous context that required a double marking, and in this case she produced the correct doubly marked form. The fourth column shows that Ana omits plural affixes relatively often, in 25% to 33% of the obligatory contexts.

Adjective placement. From an L1 transfer perspective, one would expect the Romance speakers to produce both pre- and postnominal adjectives and indeed both orders are attested in the data from all the Romance subjects. Table 6 gives the raw numbers and percentages of nontarget postnominal adjective order in the Romance subjects’ data. Consider the examples in (24) for illustration:

- (24) a. (Bongiovanni I)
 eine Schlüssel normal
 a key normal (N-Adj)
Correct form: ein normaler Schlüssel
 ‘a normal key’
- b. (Bongiovanni III)
 schöne Wetter
 nice weather (Adj-N)
Correct form: schönes Wetter

Table 6. *Adjective placement in the Romance data*

	Post-nominal adjectives (i.e. incorrect order)
Ana I	7/28 (.25)
Ana III	0/10 (0)
Bongiovanni I	3/8 (.38)
Bongiovanni III	1/5 (.20)
Lina I	3/23 (.13)
Lina II	0/8 (0)
Lina III	1/11 (.09)
Bruno I	9/32 (.28)
Bruno II	17/64 (.27)
Bruno III	0/12 (0)

- c. (Bongiovanni III)
 von meine Schwester verheirat
 of my sister married (D-N-Adj)
Correct form: von meiner verheirateten Schwester
 'of my married sister'
- d. (Bruno II)
 mit eine große Loch
 with a big hole (D-Adj-N)
Correct form: mit einem großen Loch

Table 6 shows that postnominal adjectives are characteristic of the early stages of the Romance L2ers' German. Consider, for instance, Ana and Bruno: in the early period, about a third of the adnominal adjectives appeared in postnominal position, whereas in the later period all adjectives are placed prenominal. The picture of Bongiovanni and Lina is similar, although the absolute numbers of adnominal adjectives are smaller.

3.2. *Comparing the results across language groups*

To acknowledge the fact that the L2 learners represent different levels of proficiency and are not homogeneous, we have assigned each individual or (in the case of longitudinal data) each cycle to one of three groups shown in (25). On the basis of this classification we will compare the L2ers across language groups.

- (25) a. D-omissions:
 Group 1: omission of D-elements in 66% or more of the obligatory contexts

- Group 2: between 33% and 65%
 Group 3: 32% or less
- b. Lexical plural marking:
 Group 1: plural marking by lexical means in 66% or more of the plural contexts
 Group 2: between 33% and 65%
 Group 3: 32% or less
- c. Plural concord:
 Group 1: double markings in less than 33% of the obligatory contexts
 Group 2: between 33% and 65%
 Group 3: 66% or more
- d. Adjective placement:
 Group 1: only postnominal adjectives
 Group 2: pre- and postnominal adjectives
 Group 3: only prenominal adjectives

With respect to D-OMISSIONS, Table 7 shows that only two speakers fall in the first group (G1), and these two are Koreans. The other Korean learners as well as Kadir, the Turkish speaker with the most elementary variety of German, and Ana I form the second group (G2), whereas Ayse, Ilhami, and the Romance subjects are in the third group (G3). Observe that we end up with a distribution of speakers that corresponds to differences among their L1 grammars: speakers of Korean and Turkish, languages without articles, omit D-elements with higher frequency than speakers of Romance languages. The D-omission rates of the Romance speakers, which represent the earliest period of L2 acquisition, are al-

Table 7. *Results across languages: D-omission rates*

I ($\geq 66\%$)	II (65%–33%)	III ($\leq 32\%$)
Changsu (.83)	Yangsu (.57)	
Gabho (.66)	Dosik (.46)	
	Ensook (.42)	
	Chipyong (.59)	
	Samran (.39)	
	Jungsuk (.38)	
	Kadir (.58)	Ayse I–III (.27–.09)
		Ilhami I–III (.16–.14)
	Ana I (.37)	Ana III (.03)
		Bongiovanni I and III (.30–.15)
		Lina I–III (.20–.05–.13)
		Bruno I–III (.15–.03)

Table 8. *Results across languages: lexical plural marking*

I ($\geq 66\%$)	II (65%–33%)	III ($\leq 32\%$)
all Koreans except for Dosik (1.–.69)	Dosik (.65)	
Kadir (.86)		
Ayse I (.77)	Ayse II (.38)	Ayse III (0)
Ilhami I (.70)	Ilhami III (.33)	Ilhami II (.09)
Ana I (.71)–III (.67)		
Bongiovanni I–III (1.–.68)		
Lina I–III (.91–.70)		
Bruno I–II (.75–.66)		Bruno III (0)

ready quite low (between 15% and 37%) compared to the other L2ers. The rates are lower than those of all the Korean subjects and the Turkish speaker Kadir, and they are in about the same range as those of the more advanced Turkish subjects, Ayse (= 27%) and Ilhami (= 16%), in their first cycle. As for individual subjects, the “worst” Romance speaker (Ana) has about the same omission rate (= 37%) as the “best” Korean subject (Jungsuk, at 38%). The longitudinal data (Turkish and Romance speakers) demonstrate a clear developmental pattern with declining D-omission rates over time. These results confirm hypothesis (18a).

With respect to LEXICAL PLURAL MARKING, Table 8 shows that at elementary levels of L2 acquisition, there is a high incidence of expressing plurality via lexical means, as measured by the proportion of quantifiers and numerals to other D-elements, with development towards lower rates of lexical marking at more advanced levels. These results hold irrespective of the learners’ L1. Note that these findings are reminiscent of the observation that adult L2 acquirers initially express temporality via adverbials and other lexical devices and that tense inflections come in over time. It is important to highlight that the Italian and Spanish speakers perform in much the same way as the Korean and Turkish subjects, even though only the Romance languages have obligatory plural affixes on both nouns and D-elements and are therefore much closer to German in these areas than Korean and Turkish are. Despite these similarities between native and target languages, there seems to be no advantage for them over the Korean and Turkish speakers in the acquisition of plural inflection.

Concerning PLURAL CONCORD, Table 9 shows that most of the Koreans are in groups I and II, with relatively low double-marking rates, whereas most of the Turkish L2ers and Ana are in group III, exhibiting higher rates of double marking. As already mentioned, the results have to be taken *cum grano salis*, however, since there were only very few unambiguous contexts that required overt double marking in the data available

Table 9. *Results across languages: double-marking rates*

I ($\leq 32\%$)	II (33%–65%)	III ($\geq 66\%$)
Samran (.25)	Changsu (.50) Yangu (.40) Ensook (.33) Chipyeong (.33)	Dosik (1.) Jungsuk (1.)
	Ayse II (.33)	Kadir (1.) Ayse I (.83) Ayse III (1.) Ilhami I (1.) Ilhami II (1.) Ilhami III (1.) Ana I (1.)

to us. Further research, especially controlled testing, is needed in this domain.

Finally, with respect to ADJECTIVE PLACEMENT, Table 10 shows that none of the participants produces only postnominal adjectives. Koreans, with the one exception by Gabho, and all of the Turkish speakers produce only prenominal adjectives. It is in the data of the Romance speakers that adjectives occur both pre- and postnominally. Note, furthermore, the development in Ana's and Bruno's data; they cease to use postnominal adjectives in later stages of acquisition. As in the case of D-omissions, these results correspond to what we find in the respective L1s, in that only Romance languages allow for pre- and postnominal adjectives. These data confirm the influence of the L1 grammar on the acquisition of nominal structure and specifically our hypothesis (18d).

Summarizing, two observations are worth noting. First, L2 learners underuse plural inflection compared to lexical means of expressing plurality. This seems to hold irrespective of the learners' L1, that is, inflec-

Table 10. *Results across languages: adjective placement*

I (postnominal)	II (pre- and postnominal)	III (prenominal)
	Gabho (1 occurrence)	all other Koreans Kadir Ayse I–III Ilhami I–III Ana III
	Ana I Bongiovanni I–III Lina I, Lina III Bruno I, Bruno II	Lina II Bruno III

tional morphology does not seem to transfer. Secondly, transfer effects were found in syntactic domains, such as the omission of D-elements and the placement of adjectives. We will come back to these findings in the general discussion.

3.3. *Comparing child L1 and adult L2 acquisition*

In this section, we will compare the results on adult L2 acquisition with the way children acquire the phenomena under study in monolingual L1 acquisition of German.

Concerning the OMISSION OF D-ELEMENTS, Clahsen et al. (1994) found a gradual decrease of initially high D-omission rates in the large longitudinal corpus of the monolingual child Simone. In the early recordings from age 1;10 to 2;0, determiners are missing in 65% of obligatory contexts. Later, between 2;0 and 2;2, the omission rate decreases to a mean of 41%, and from 2;4 onwards D-omissions are rare with rates of around 10%. Eisenbeiss (2000) presents more data and more detailed analyses of the acquisition of the DP in German child language. She investigated 64 large samples of spontaneous speech from seven children covering the age period between 1;11 and 3;6 (MLU: 1.2–4.2). For some children, Eisenbeiss identified an early developmental stage at which there were no overt determiners at all in obligatory contexts in the children's utterances. Other children occasionally used determiners in the early recordings, but only in a small number of formulaic utterances. Consider, for illustration, the development of determiners in the longitudinal data of Leonie who was studied between 1;11 and 2;11.

As can be seen from Figure 1, the omission rate in the first four recordings is extremely high, with a mean of more than 60%. At this early stage, Leonie produces determiners in just four different utterance types. Eisenbeiss argues that these four types are unanalyzed formulaic utterances. Next, there is an intermediate stage between C5 and C8 (2;3–2;5), dubbed “development” in Eisenbeiss' analysis, during which the D-omission rate significantly drops to a mean rate of approximately 30%. At this stage, Leonie starts to use determiners in nonformulaic utterances. From recording 9 onwards, D-omissions are rare in Leonie's speech with a mean rate of approximately 10%. At this stage, there are no restrictions on the use of determiners. For example, determiners can now be combined with adjectives to form complex DPs.

The D-omission rates for early stages of L1 acquisition of German are in the same range as those of elementary varieties of Korean and Turkish L2 learners. Romance learners, on the other hand, exhibit a considerably

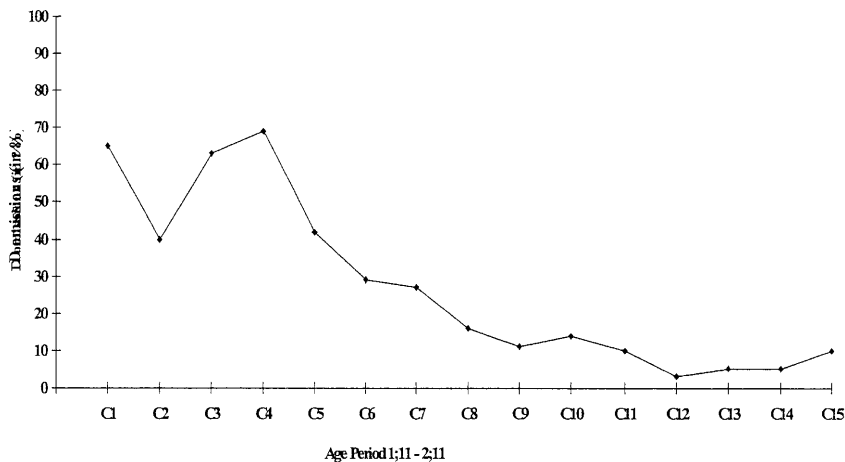


Figure 1. *Leonie's D-omissions in obligatory contexts*

lower D-omission rate than monolingual German children at early stages of acquisition.

With respect to PLURAL MARKING in German L1 acquisition, we rely on the analyses of the "Simone" corpus presented in Clahsen et al. (1992). To make the L1 data comparable to the L2 data presented above, Table 11 presents D-omission rates in Simone (see Clahsen et al. 1994: 99) and omissions of noun plural affixes (see Clahsen et al. 1992: 236) from the same age period.

Noun plural affixes appear from age 1;7 onwards in the Simone corpus. Between 1;7 and 1;9, there were thirteen obligatory contexts, and in seven of them Simone produced the correct affix. At 1;10, the complete set of plural affixes (see [3]) is produced by Simone. Plural overgeneralization errors are rare throughout, with a mean rate of 3%. As can be seen from Table 11, omissions of noun plural affixes are also rare, even at

Table 11. *Omissions of determiners and noun plural markers in Simone*

	D-omission rate	Omitted N-plural marker
1;10–2;00	65% (654/1000)	23% (15/64)
2;00–2;02	41% (517/1257)	9.5% (8/84)
2;04–2;09	12% (223/1933)	14% (12/85)

Table 12. *Plural markings in Leonie's DPs*

	Plural marking by Q+N	D-element not Q or N	Double markings
1;11–2;02	0% (0/6)	6	100% (6/6)
2;03–2;05	0% (0/9)	9	100% (9/9)
2;06–2;11	24% (11/46)	35	87% (40/46)

early stages of acquisition. This contrasts with the generally higher plural omission rates in early stages of L2 acquisition, as reported above.

For further L1–L2 comparison of plural marking, we investigated the large longitudinal corpus from Leonie with respect to the same phenomena that were studied in the L2 data, that is, lexical versus morphological plural marking and double marking of plurality in DPs. Table 12 presents a breakdown of the results for the three stages of DP-development suggested in Eisenbeiss (2000).

Two observations are relevant from Table 12. First, Leonie initially encodes plurality by means of inflectional markings on determiners, adjectives, and nouns. In contrast to the adults in our study, Leonie rarely uses lexical means of expressing plurality, particularly at early stages of acquisition. Second, if required, Leonie produces plural affixes on more than one element of a DP, again in contrast to L2 adults, exhibiting a high double-marking rate for plurals, even at early stages of acquisition.

To sum up, in Leonie's and Simone's data noun plural affixes emerge early, inflectional errors are rare, and plural affixes are most often supplied when required. In the next section, we will come back to these observations with respect to the more general question of L1–L2 differences in the acquisition of inflectional morphology.

4. General discussion

As mentioned in the introduction, the study of how adults acquire grammar has to date been mainly based on investigations of clause structure and the morphosyntax of verbs. The development of nominals, however, has so far not been investigated at the same level of detail as the acquisition of phenomena in the sentential domain. We are in a position to use our L2 findings in the nominal domain to address the two main research areas identified earlier: (i) L1–L2 differences in the development of inflectional morphology, and (ii) the role of transfer in L2 acquisition of grammar.

4.1. *The acquisition of inflectional morphology*

Previous L2-acquisition research has found that verb inflection is an area of specific difficulty for adults. It has been shown, for example, that many L2 adults do not produce target-like verbal forms. This even holds for relatively simple verbal systems such as the regular subject–verb-agreement paradigm of German (Clahsen 1988; Köpcke 1987). Meisel (1991), for instance, compared the L2 acquisition of verbal inflection in German by six adults; he found, in an observation period extending over 1.5 years, considerable variation: two subjects rely virtually exclusively on three endings (*-e*, *-[e]n*, *-ø*), almost never using 2sg or 3sg forms; a third subject uses 2sg and 3sg inflections but the incidence of agreement errors is very high; another gradually comes to use all the endings but “they are not used correctly in a systematic fashion” (Meisel 1991: 262); the remaining two are much more successful, one still not always using 2sg in obligatory contexts, but the other producing them correctly from a relatively early point in development. Despite such individual variation, what unites them is that errors are common. (For comparable results — but with a different explanation — see Prévost and White (2000) and Lardiere 2000.) At early stages in particular, adult L2ers often use reduced paradigms, involving fewer morphological distinctions than in the TL, and they typically use specific inflectional morphemes inconsistently (see Klein 1986). Parodi (1998, 2000) has found that while this generalization holds of thematic verbs, nonthematic verbs (e.g. modals and auxiliaries) are treated differently. Specifically, she has shown that early on adult L2 acquirers of German exhibit a very high rate of correct subject–verb agreement for nonthematic verbs when at the same time subject–verb agreement is poor with thematic verbs.

The general picture of the L2 acquisition of verbal inflection contrasts markedly with that of child L1 acquisition. For example, there is no parallel division between thematic and nonthematic verbs (Parodi 1998). Indeed, in L1 acquisition, inflectional paradigms are always acquired completely, inflectional errors of commission are uncommon, and inflectional morphemes are often used consistently. For example, Clahsen and Penke (1992) have shown for the acquisition of subject–verb agreement in German child language that by the time the 2sg affix is acquired, that is, at around the age of 2.5, all the forms of the agreement paradigm are systematically used in over 90% of obligatory contexts. Thus, German subject–verb agreement develops rapidly in L1 acquisition and reaches high correctness levels at relatively early developmental stages.

Another area in which L1–L2 differences are apparent concerns temporal reference, specifically how language acquirers refer to past events

and actions. Several researchers have shown that adult L2ers tend to express past-time events through adverbials and other lexical devices rather than through inflection, particularly at early stages of development. Child L1 acquirers, however, first express the same notion by means of verb inflection. Children acquiring German, for example, initially use participles to refer to past events (Behrens 1993: 162, 186). For child French-German bilinguals, Meisel (1985) has found that in French the first adverbs appeared after the children had already acquired the *passé composé*.¹⁰ The basic generalization that can be drawn from these observations is that verbal inflection poses more difficulty for L2 adults than for L1 children.

Consider our results on the development of German nominals in the light of this generalization. As shown in section 3.3, determiners are often omitted in early stages of child L1 acquisition, but at the same time noun plural affixes are acquired early, omitted rarely, and double-marking rates, even at early stages of acquisition, are high for plurals. Two findings on L2 acquisition contrast with these L1 findings. First, in early stages, plurality is often expressed via lexical, uninflected forms, as determined by the high ratio of quantifiers and numerals to other D-elements; while there is some noun plural inflection present at this point, the incidence of noun plural morphology increases over time. This is different from L1 learners and it seems to hold for L2ers independent of their native language. These results are similar to those on temporal reference in early adult L2 development.

Second, there were only very few clear cases of (attempted) number concord in nominals, even at more advanced stages of L2 development. This finding, too, contrasts with results on L1 acquisition and it holds for L2ers independent of their native language; this is to say, that even though a type of number concord in nominals characterizes the L1 of the Spanish subject, this offers no advantage to Ana over the Korean and Turkish speakers, whose L1s have no number concord at all. This second set of results is parallel to the development of subject-verb agreement in adult L2 acquisition: Spanish-speaking adult L2ers of German do not seem to have an advantage over Koreans in the acquisition of subject-verb agreement, even though Spanish has a general subject-verb-agreement paradigm (Vainikka and Young-Scholten 1996).

We take the initially high proportion of lexical expression of plurality, the nontrivial omission rate of noun plural morphology, and the low incidence of nominal number concord as indications of more general problems L2 adults have acquiring inflectional morphology. These problems hold for the domains of verb inflection and, as is evident from our data, nominal inflection. In the present paper, we will not speculate on the un-

derlying causes of these problems. However, whatever the ultimate explanation, the acquisition of inflectional morphology is an area where there are clear and definite differences between adult L2 acquisition and child L1 acquisition. The difficulty that L2 adults seem to experience in their attempts to acquire inflectional systems is unknown in (normal) first-language acquisition.

4.2. *Transfer effects in L2 grammar acquisition*

The second general issue to which our findings on German nominals are relevant concerns the role of L1 transfer in adult L2 acquisition. In the early days of L2 acquisition research, several investigators, most notably Dulay and Burt (e.g. 1974), held the view that L1 and L2 acquisition are largely identical and that there are no transfer effects from the mother tongue. Hardly any L2 acquisition researcher would still subscribe to this view; rather, L1 transfer is considered to play a crucial role in L2 grammar acquisition. When it comes to specifying L1 transfer precisely, however, the conclusions that have been drawn from studies on the development of clause structure and the morphosyntax of verbs have not been uniform. Several researchers have argued in favor of strong or even “absolute” L1 influence, that is, that (all of) the grammatical principles and parameter values as instantiated in the L1 serve as the initial theory about the TL (Schwartz and Sprouse 1996; White 1989). Other L2 acquisition researchers have argued that grammatical properties of the L1 are selectively transferred. To explain certain word-order asymmetries in French-speaking L2 acquirers of English, Eubank (1993/94) hypothesizes that morphology-driven information, specifically “strength” of inflection, does not transfer, whereas purely syntactic properties do. He calls this the *weak transfer hypothesis*. Vainikka and Young-Scholten (1994) have proposed another variant of selective transfer. They argue that only lexical categories and their linear orientation transfer; functional categories, in contrast, do not transfer but are rather created in much the same way as has been put forward in structure-building accounts of child L1 acquisition (e.g. Clahsen et al. 1994; Meisel and Ezeizabarrena 1996; Parodi 1990).

From a theoretical perspective, the strong transfer hypothesis is more parsimonious, since it does not require any restrictions on what does and what does not transfer. This theoretical point is even acknowledged by proponents of selective transfer (Eubank 1993/94: 201). What is proposed to motivate the variants of selective transfer are empirical considerations, specifically the finding that some elements of the L1 grammar such as

subject–verb-agreement systems, “strength” values of inflections, etc., do not seem to transfer. The debate between selective and strong transfer has so far focused mainly on the acquisition of clause structure and of the morphosyntax of verbs. How might our results in the nominal domain be interpreted in this light?

A clear case of transfer comes from the placement of adjectives. Recall that the Italian and Spanish acquirers of German produce (incorrect) postnominal adjectives and that such word-order errors do not occur in the data from the Koreans and the Turks. These differences in their German directly reflect differences in their L1 grammars.

By contrast, distinct results hold for the expression of plurality and for number concord. Recall that there is obligatory plural morphology on nouns as well as number concord in (Italian and) Spanish, as there is in German,¹¹ but that Korean and Turkish do not have such obligatory inflection. These differences across the L1s do not correlate with their acquisition of the German noun plural system. It does not seem to be the case that the morphological means to express plurality are more accessible to acquirers with a Romance L1 than to Korean and Turkish speakers; the same seems to be true of number concord. Rather, subjects tend to start off by relying more heavily on lexical devices, irrespective of the L1. Taken together, these results look like transfer is selective rather than global or absolute. Let us therefore consider how these results might be explained in terms of the two variants of selective transfer mentioned above.

4.2.1. *Eubank (1993/94)*. Eubank (1993/94) adopts the view that some syntactic phenomena such as verb raising depend on the [+/-strong] values of inflectional features (see, among others, Chomsky 1993; Pollock 1989), and that these feature values are determined by morphological paradigms (e.g. Rohrbacher 1994). Due to morphological differences, finite main verbs in English have a [–strong] feature, whereas in French they have a [+strong] feature. According to Eubank, if L1 transfer were absolute, then French L2ers of English should initially treat finite verbs as if they had the feature [+strong] thereby yielding the orders found in French. The L2 verb-placement data did not completely support this prediction, however.¹² To Eubank, these findings indicate that verb movement is optional initially. To account for the early French L2ers’ English, Eubank proposes that syntactic properties that are determined by morphological information do not transfer to the initial state of L2 acquisition.

Given the assumption that noun raising within the DP is driven by a morphological feature (see [17]), Eubank’s account of the L2 acquisition

of (feature-driven) verb movement should be extendable to the domain of nominals. Consequently, from this account we would not expect to find transfer effects in noun raising at early stages of development.

Our findings on the placement of adjectives go against this prediction. In Romance languages, the adjective is assumed to originate in prenominal position, and the postnominal position is derived via noun raising over the adjective (see [17]). Under this analysis, regardless of the exact content of the feature that drives noun movement in Romance, it must have a [+strong] value; otherwise the noun would not raise in overt syntax. Thus if “strength of inflection” in Eubank’s (1993/94) sense does not transfer, all L2ers should start off without the feature value specified. From this one would predict that they should all perform the same in terms of German adjective placement. But as we have seen, the subjects differ with respect to adjective placement, depending on their L1 grammar. In particular, only the Romance speakers, and notably all of them, initially produce postnominal adjectives, as is allowed in their L1 grammar. We thus conclude that Eubank’s weak transfer hypothesis is not compatible with our findings. Bruhn de Garavito and White (2000) achieve similar results in their study of gender acquisition in L2 French by speakers of Spanish: in this case, the L1 and the L2 coincide in feature strength and optional N-raising is not attested, again contrary to the expectations of the weak transfer proposal.

4.2.2. *Vainikka and Young-Scholten (1994)*. According to Vainikka and Young-Scholten’s (1994) variant of selective transfer, the minimal trees hypothesis, (i) lexical projections such as VP and their linear orientation transfer; (ii) functional projections such as IP are initially absent in adult L2 acquisition; and (iii) the acquisition of functional categories is not influenced by the L1 grammar. Our findings on the placement on adjectives, however, suggest that their idea cannot be generalized to the nominal domain. Again, the adjective-placement data are relevant. Recall the analysis illustrated in (17): according to this, it is clear that a functional projection is required in the derivation of the N-Adj order. If, however, functional categories are initially absent and are not later transferred from the L1, Italian and Spanish speakers should only produce prenominal adjectives in their L2 German, the same order as the speakers of Korean and Turkish, because this is the sole order they will be exposed to from German input. In sum, the minimal trees hypothesis predicts that adnominal adjectives should pattern the same across all L2ers, but as we have seen, this is not the case.

From the previous discussion, we conclude that the two variants of the selective transfer hypothesis are incompatible with our findings on the L2

acquisition of German nominals. Although the adjective placement findings are consistent with the full transfer hypothesis, the morphological findings appear more problematic for the strongest statements of this hypothesis; see Lardiere (2000) for relevant theoretical discussion on this issue.¹³

5. Conclusion

The linguistic phenomena that seem to go against the strong transfer hypothesis are fairly homogeneous, all involving inflectional morphology, namely subject–verb agreement and plural inflection. The generalization seems to be that (adult) L2 acquirers with subject–verb agreement, plural inflection, etc., in their L1 grammars do not have an advantage in the acquisition of similar TL phenomena over L2ers who do not. Rather, adult L2ers, despite having structurally different L1s, behave in much the same way towards inflectional morphology: bound morphology poses a major acquisition difficulty, unlike in child L1 acquisition, and, particularly at early stages, lexical means that can partially serve to compensate for the function of these morphemes are heavily relied on. In other words, the fact that inflectional morphology does not transfer (Dietrich et al. 1995; Weinreich 1953) should be seen as independent of the idea that syntactic properties of the L1 grammar transfer. The general case may be that regardless of their L1 inflectional systems, L2ers essentially start from the same point in regard to acquiring inflectional morphology. The question as to why L2 adults have difficulty acquiring and using inflectional systems, particularly in comparison to L1 acquirers, has not been addressed in the present study. But whatever the reasons, L1 transfer does not seem to be a relevant factor. In sum, what the results do clearly indicate is that in both the nominal and the sentential domains, syntactic transfer is in evidence but morphological acquisition is problematic regardless of the properties of the L1.

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University of Cambridge
University of Hawaii
University of Essex

Notes

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2. We have not included the *-s* genitive (analogue to the possessive *-s* in English) for proper nouns in German, because there were no occurrences in the corpora and only a few obligatory contexts for it. Again, this is unfortunate, given proposals concerning the role of possessive *-s* for the development of the DP in L1 German (Clahsen et al. 1994).
3. Due to syncretism in the marking of gender, number, and case on D-elements in German, it is very difficult to keep them apart. The analysis of number on its own, however, is possible by considering obligatory contexts for plural marking; see below for further explanation.
4. Some authors claim that rather than adjunction, the AP dominates NP. The difference may lie in whether or not A selects the NP as an argument; this could be the case in a limited number of adjectives that cannot be used as predicates, such as *reine Wahrheit* 'pure truth' or *mere*, in English. In terms of adjective iteration, however, the adjunction structure seems more satisfactory. In (1) we have opted for the adjunction structure. Nothing crucial seems to rest on this.
5. The pattern "noun numeral+classifier" is an exception to this generalization; a variant of this order has the head noun last when the genitive *-uy* occurs between the numeral+classifier and the noun, as in (6a) (Kim 1987: 894).
6. Numerals and quantifiers, however, can occur postnominally with a minor difference in meaning (B. Haznedar, p.c.).
7. Bernstein (1991, 1992, 1993) claims that different adjectives realize different structural positions, some of them being APs which adjoin to various XPs, others being similar to functional projections in which the head Adj takes a complement. As we are concerned with the D-N-Adj and D-Adj-N orders, (17) represents the minimal structure needed to capture these facts.
8. The only difference concerns the categorization of possessives for the Italian speakers, for these are taken as adjectives in certain cases (Giorgi and Longobardi 1990), as, for example in *la mia macchina* 'the my car' (= my car). This does not extend to all instances of possessives, however; for example, in *mio marito* 'my husband', *mio* is categorized as a D-element.
9. This does not seem to hold for Bruno who does not produce any quantifiers and numerals in the last recording. Note, however, that there are in total only four plural contexts with D-elements in his cycle III.
10. Schlyter (1990) reports, however, that bilingual German-French children start by using verb particles in German such as *weg* 'away', *ab* 'off' while they use past participles in French. That is, children might be making use of different means of expression depending on what the lexicon of each particular language offers them.
11. We remind the reader at this point that the way in which number concord is realized in the German nominal is different from that in Italian and Spanish, where the latter is much more uniform (compare [4] and [16]). Whether this difference is important to issues of transfer can only be addressed in a different study.
12. For a reanalysis of Eubank's findings from a full transfer perspective, see Schwartz and Sprouse (1996).

13. Schwartz and Sprouse (1996) claim that transfer takes place at a certain level of abstractness, and so for them the expression of morphological features and morphological processes like agreement needs to be separated from “the abstract properties of a specific grammar” (Schwartz and Sprouse 1996: 58, note 17).

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