Bilingualism: Language and Cognition 6 (2), 2003, 129–141 © 2003 Cambridge University Press DOI: 10.1017/S1366728903001081 

# Fossilization in steady state L2 grammars: Persistent problems with inflectional morphology*

LYDIA WHITE
*McGill University*

*This paper provides a case study of the fossilized endstate L2 English grammar of an adult native speaker of Turkish. Results are presented from production data (over 3400 utterances, gathered over 2 time periods 18 months apart), concentrating on verbal and nominal inflection and associated syntactic properties; data from a number of other tasks are also presented. A high level of accuracy in suppliance of English tense and agreement morphology was found. In contrast, suppliance of definite and indefinite articles was significantly lower but nevertheless appropriate. Syntactic correlates (such as verb placement, presence of overt subjects, case assignment, definiteness effects) were all completely accurate, suggesting no underlying impairment to functional categories or features. There is some evidence for influence from the L1, which has rich inflection but lacks articles, but this appears to be an effect on suppliance of overt morphology and not on underlying representation, which shows properties appropriate to the L2.*

## Introduction

In some of the earliest work on interlanguage, a phenomenon known as FOSSILIZATION was identified (Selinker, 1972). Fossilization is observed in second language (L2) but not in first language (L1) acquisition (with some pathological exceptions), the observation being that L2 learners stabilize at some point in their grammatical development short of native-like attainment. In other words, many fluent bilingual speakers (who acquired the L2 as an adult) show evidence of long-lasting non-native performance. As Long (2003) points out, the term "fossilization" is sometimes used to describe an acquisition process, but it more suitably refers to the outcome of L2 acquisition, namely the endstate grammar. The term "fossilization" would seem to imply a permanent deficiency or grammatical impairment.

Considerable attention has been paid recently to the fact that L2 learners exhibit variable use of bound inflectional morphology, such as tense and agreement, as well as closed class lexical items associated with functional categories, such as auxiliaries and determiners (e.g., Haznedar and Schwartz, 1997; Eubank and Grace, 1998; Lardiere, 1998a, b, 2000; Hawkins, 2000; Prévost and White, 2000; Robertson, 2000; Leung, 2001; Ionin and Wexler, 2002). Such variability has long been noted and is pervasive during the course of acquisition, as indicated, for example, by earlier research on morpheme acquisition orders (see Zobl and Liceras, 1994, for review). The problem typically reveals itself in spontaneous production. As several researchers have shown, variability in the domain of inflectional morphology contrasts with relative success with related syntactic properties (Haznedar and Schwartz, 1997; Lardiere, 1998a, b; Prévost and White, 2000).

In some cases, variable suppliance of inflectional morphology is found even in the endstate grammar (Lardiere, 1998a, b). In other words, bilingual speakers who are fluent in the L2, who use it frequently, and who have had ample exposure to L2 input over an extended period of time, may nevertheless "fail" in this particular domain. A consensus seems to be emerging that fossilization is involved: Lardiere (2000) refers to permanent non-convergence between syntax and morphology as involving fossilization; Hawkins (2000) identifies it as "persistent selective fossilisation'. Sorace (2000) refers to this kind of variability in endstate grammars as "stable optionality'.

## Grammatical impairment or not?

There is less agreement as to what the precise source of this fossilization might be, that is whether or not it reflects a genuine grammatical deficit. In recent research, two different perspectives on L2 speakers'

* This research was conducted with support from the Gouvernement du Québec: Fonds de recherche sur la societé et la culture (grant no. 2001-ER-66973) and the Social Sciences and Humanities Research Council of Canada (grant no. 410-2001-0719). I am most grateful to SD for her participation and cooperation in this study. I should like to thank the following graduate students for their assistance: Simone Conradie, Theres Gruter, Ayse Gürel, Yuhko Kayama, Yan-kit Ingrid Leung, Martyna Kozlowska-Macgregor, Jeffrey Steele, Elena Valenzuela and Myunghyun Yoo. Earlier versions of this paper were presented at the Interdisciplinary Workshop on Bilingualism and Brain Plasticity, Trieste, March 2001, and at the Boston University Conference on Language Development, November 2001.

Address for correspondence
Department of Linguistics, McGill University, 1085 Dr. Penfield, Montreal, Québec, Canada H3A 1A7
**E-mail**: *lydia.white@mcgill.ca*

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

Table 1. *L2 English: suppliance in obligatory contexts (in%).*

| | 3S agreement (lexical verbs) | Past tense | Suppletive *be* | Overt subjects | Nominative case |
|---|---|---|---|---|---|
| Haznedar 2001 | 46.5 | 25.5 | 89 | 99 | 99.9 |
| Ionin and Wexler 2002 | 22 | 42 | 75 | 98 | – |
| Lardiere 1998a, b | 4.5 | 34.5 | 90 | 98 | 100 |

morphological problems can be identified. On the one hand, there are researchers who take variability in realization of inflectional morphology as evidence that L2 acquisition is fundamentally different from L1 acquisition, with different processes and mechanisms being involved, resulting in a totally different kind of linguistic representation (Clahsen, 1988; Bley-Vroman, 1990; Meisel, 1991, 1997). These researchers argue for an impairment to – or breakdown of – the grammatical system as a whole. For example, Clahsen (1988) and Meisel (1991, 1997) presuppose that, in L1 acquisition, overt morphology is a causal factor in the acquisition of certain syntactic properties (see Vikner, 1997; Rohrbacher, 1999) and that this relationship breaks down in adult L2 acquisition (see White, 2003, ch. 6, for overview and discussion). A more local kind of impairment is argued for by Eubank and Grace (1998) (following Beck, 1998), according to which the feature strength of functional categories (particularly Infl) is permanently inert, resulting in variable suppliance of morphology, as well as variable verb placement.[1] Other researchers argue that the L2 grammar is restricted to the functional categories and features exemplified in the L1 (Smith and Tsimpli, 1995; Hawkins and Chan, 1997; Hawkins, 2000, 2001), resulting in difficulties when the L1 and L2 differ as to the categories or features that they realize.

In contrast, there are researchers who maintain that the L2 learner's underlying representation is neither impaired nor restricted to L1 properties and that variability in inflection in interlanguage grammars is neither random nor unconstrained. Haznedar and Schwartz (1997) and Prévost and White (2000) argue for the MISSING SURFACE INFLECTION HYPOTHESIS. Lardiere (1998a, b, 1999, 2000) argues that mapping problems are involved. On these accounts, problems with the surface realization of morphology are attributed to failure to consistently access certain morphological forms from the lexicon. Hawkins (2000) refers to the latter kind of approach as implying a breakdown in computation, rather than representation.

Under the first view, fossilization is indeed attributable to the nature of the grammar itself; under the second view, it is the result of an interface problem, reflecting difficulties in access or use of underlying knowledge.

## Previous research on morphological variability in L2 English

### *Verbal inflection*

A number of researchers have recently focused on tense and agreement morphology in L2 English, comparing this with performance on syntactic properties implicating the functional category Infl.[2] Variability in suppliance of overt inflection is reported, together with considerable accuracy on associated syntactic properties. Results from three such studies are summarized in Table 1 and described below.

Haznedar and Schwartz (1997) and Haznedar (2001) report dissociations between verbal inflection and various syntactic phenomena in production data from a Turkish-speaking child, named Erdem. Incidence of inflected and uninflected verb forms, copula and auxiliary *be*, null subjects, and case on subject pronouns is examined over an 18-month period. Collapsed over the whole period of observation, Erdem's L2 English production data show the following characteristics (see Table 1): (i) lexical verbs often lack regular past tense and 3rd person singular inflection; (ii) subjects are hardly ever omitted; (iii) subject pronouns are almost invariably nominative (*I* rather than *me*, etc.). Furthermore, while suppliance of some properties is high from the earliest recordings (the copula, overt subjects, nominative subjects), inflection for agreement and tense on lexical verbs remains variable throughout the entire period of observation. Erdem, then, seems to have unconscious knowledge of certain syntactic requirements of English (subjects must be overt; subject pronouns must be marked nominative) well in advance of consistent suppliance of overt morphology. As Haznedar and Schwartz point out, Erdem's linguistic behaviour contrasts with the Optional Infinitive (OI) stage reported for L1 acquisition (Wexler, 1994), which is often accounted for in terms of underspecification of functional categories, in particular Tense (Wexler, 1994) or Number (Hoekstra, Hyams and

[1] Beck (1998) herself does NOT consider morphological variability to be at issue.

[2] For research looking at L2 French and German from a similar perspective, see Prévost and White (2000).

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

Becker, 1999). Unlike Erdem, L1 acquirers of English: (i) continue to use null subjects during the whole of the OI period, and (ii) produce accusative pronoun subjects with nonfinite verbs. In general, during the OI phase in L1 acquisition, uninflected verbal forms behave like nonfinite verbs while inflected forms are finite.

Ionin and Wexler (2002) report on production data from 20 Russian-speaking children (age range 3.9–13.10) acquiring L2 English. Omission of morphology is quite high, especially 3rd person singular agreement on lexical verbs (see Table 1). At the same time, null subjects are extremely rare, inappropriate (or faulty) use of inflection is very low, and there are no errors in verb placement, lexical verbs remaining in the VP. Such results are inconsistent with Eubank and Grace's (1998) claim for inert features: while there is variability in suppliance of verbal morphology, there is no variability in verb placement, suggesting the presence of abstract features associated with Infl, whose values are, appropriately, weak.

The above studies focus on learners still in the course of L2 acquisition. Lardiere (1998a, b) shows that this kind of divergence between overt morphology and underlying syntax is characteristic of at least some endstate grammars as well. Lardiere provides a detailed case study of an adult Chinese speaker's L2 English. The interlanguage grammar of this subject, Patty, is clearly at its endstate. Patty was recorded after she had lived in the USA for ten years and then again almost nine years later. There was little change in the data over this time period. Lardiere examines Patty's use of tense and agreement inflection in spontaneous production. Incidence of inflected verbs is low (see Table 1). Use of 3rd person singular /-s/ (3S) is particularly impoverished, often totally absent. Nevertheless, Patty has full command of a variety of syntactic phenomena which implicate tense and agreement, consistent with the claim that Infl is represented in her grammar. For example, like the L2 children in the studies described above, Patty shows 100% correct incidence of nominative case assignment, as well as appropriate accusative pronouns in non-nominative contexts, and hardly any null subjects. In addition, she shows no variability in verb placement; verbs are positioned appropriately with respect to adverbs and negation, that is, they do not raise, again suggesting that Infl is weak rather than inert.

These results suggest that variability in overt morphological marking does not reflect a lack of functional categories, features or feature strength in the interlanguage grammar, nor is it the same phenomenon as the OI stage reported for L1 acquisition. Rather, the data are consistent with claims such as the MISSING SURFACE INFLECTION HYPOTHESIS (Haznedar and Schwartz, 1997; Prévost and White, 2000) or the mapping problem (Lardiere, 2000). That is, while underlying syntax is intact (and not restricted to properties found in the L1), L2 speakers at various stages of acquisition have considerable problems in use of inflection, in many cases failing to produce overt morphology.

Table 2. *L2 English: accurate suppliance of articles in obligatory contexts (in %).*

| | Robertson 2000 | Leung 2001 |
|---|---|---|
| Contexts | | |
| Definite | 83.2 | 85 |
| Indefinite | 77.9 | 99.5 |

### *Nominal inflection*

In the L2 research described so far, the focus has been on verbal inflection. If morphological variability can be attributed to missing surface inflection or mapping problems, one might expect corresponding phenomena in the nominal domain as well, that is, morphological variability co-occurring with evidence of unconscious knowledge of underlying syntactic properties. As far as endstate L2 grammars are concerned, there has, as yet, been relatively little investigation of functional morphology relevant to determiner phrases (DPs) in the light of recent approaches to functional categories and features.[3] Lardiere, for instance, does not report on Patty's use of determiners or number marking.

Nevertheless, there has recently been some relevant investigation of suppliance of determiners in the L2 grammars of speakers whose L1s lack articles (Robertson, 2000; Leung, 2001; Ionin and Wexler, to appear), including the grammars of advanced proficiency L2 speakers. Table 2 presents production of determiners in obligatory contexts, as reported by Robertson (2000) and Leung (2001). Robertson (2000) examined use of definite and indefinite articles in the L2 English of advanced learners whose L1 was Taiwanese and/or Mandarin. Suppliance of determiners was quite high. Inaccurate responses consisted of omission of articles, rather than misuse of definite for indefinite or vice versa. Robertson shows that there are syntactic constraints on determiner omission: by and large, determiners are only dropped where the NP in question forms a chain with a preceding NP which has an overt determiner.

Leung (2001) examines the English of Cantonese-English bilingual adults.[4] Concentrating on singular count nouns, she found a much lower incidence of determiner omission overall than reported by Robertson: omission

[3] See Thomas (1989) for overview and discussion of earlier L2 research on the acquisition of English articles.

[4] This is part of a study of L3 French, which will not be discussed here.

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

was around 6%. However, article usage was not error free (see Table 2): while suppliance of indefinite articles in indefinite contexts was extremely accurate (almost 100%), indefinite articles were also supplied in contexts where definite articles were expected. Thus, these studies differ in the errors found: Robertson reports omission of both definite and indefinite articles while Leung finds substitution of indefinite for definite but not vice versa.

Given that Chinese differs from English in having Classifier as a functional category (Cheng and Sybesma, 1999), Leung (2002) investigates whether Chinese speakers analyze English determiners as classifiers rather than determiners. Chinese classifiers can co-occur with demonstratives and possessives, as in (1a), in contrast to English, (1b).

(1) a. Keoi go mui hou leng.
his/her CL sister very beautiful
'His/her sister is very beautiful.'
b. *His/her the sister is very beautiful.

Chinese speakers did not produce sentences like (1b) in their L2 English and consistently rejected them in a grammaticality judgment task. Both these studies, then, suggest that L2 speakers of English whose L1s lack articles are able to acquire them and that the functional category Det, together with the associated feature ±definite, is implicated, rather than the L1 category Classifier. (See also Ionin and Wexler (to appear) for a finer grained analysis of the acquisition of the English article system by native speakers of Russian, a language without articles.)

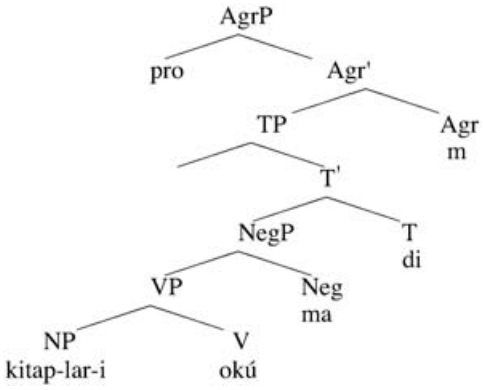
### *Role of L1*

Since dissociations between morphology and syntax have been reported for a variety of different L1s and L2s (e.g., Clahsen, 1988; Müller, 1998; Gürel, 2000; Prévost and White, 2000), it might appear that transfer plays no role here. In Lardiere's study, the mother tongue was Chinese, a language which is very impoverished as far as overt inflection is concerned. While Patty's performance in L2 English might be attributable to properties of the L1, we have also seen that child L2 learners whose mother tongues have rich verbal inflection (Turkish or Russian), show similar effects, their suppliance of morphology also being variable, although usually higher than Patty's. Thus, it is impossible to determine the extent to which the fossilization that Patty exhibits reflects properties of the L1 Chinese. This issue clearly deserves further investigation. Even if the bilingual L2 speaker is not confined to functional properties exemplified in the L1 grammar, the L1 may have long-term effects. In the present paper, the L2 English of a native speaker of Turkish is examined and certain potential L1 effects are isolated and investigated.

### Turkish

Turkish is a head-final language: the basic word order is SOV and scrambling is common. Turkish is an agglutinative language, with rich verbal and nominal inflection. Verbal suffixes mark subject agreement (person and number), tense and aspect. Nouns and pronouns are inflected for number (+plural) and case (accusative, dative, locative, ablative, genitive; nominative is unmarked). It is a prodrop language: both subject and object pronouns can be dropped. These properties are illustrated in (2).

(2) Kitap-lar-i okú-ma-di-m.
book-PL-ACC read-not-PAST-1SG
'I didn't read the books.'




Turkish has no definite article. The numeral *bir* "one" can be used in indefinite contexts. Kornfilt (1997) considers *bir* to be an article; Underhill (1976) argues that it is a numeral; Lyons (1999) refers to it as a QUASI INDEFINITE ARTICLE. While there is no definiteness distinction expressed in terms of determiners (unlike English), Turkish does realize specificity.

Specificity is not the same as definiteness. While definite DPs are usually assumed to be [+specific] (but see Lyons (1999) for counterexamples), indefinite DPs can have either a specific or a non-specific reading (e.g., Ioup, 1977; Fodor and Sag, 1982;[5] Lyons, 1999).[6] The following example (from Ioup, 1977) illustrates the point:

(3) Melinda wants to buy a motorcycle.

[5] Fodor and Sag in fact distinguish between referential and quantificational indefinites, rather than specific and nonspecific; for our purposes here, these can be considered as equivalent.

[6] Nonspecific is not the same as generic: although generics are nonspecific, nonspecifics are not necessarily generic.

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

(4) a. She will buy it tomorrow.
b. She will buy one tomorrow.

The issue is whether or not a particular motorcycle is being referred to in (3). The sentence in (4a) is a suitable comment if Melinda has a specific motorcycle in mind, whereas (4b) is appropriate if no specific motorcycle is intended.

Specificity in Turkish has a number of morphological correlates, the most well known of which involves accusative case assignment. Where object DPs are concerned, presence versus absence of an overt case marker affects the interpretation. If the DP is marked with accusative case, the interpretation must be specific, as in (5a), whereas if there is no overt case morphology, the reading is nonspecific, as in (5b) (Enç, 1991).

(5) a. Ali bir piyano-yu kiralamak istiyor.
Ali one piano-ACC to-rent wants
'Ali wants to rent a certain piano.'
b. Ali bir piyano kiralamak istiyor.
Ali one piano to-rent wants
'Ali wants to rent a (nonspecific) piano.'

In addition to specificity effects relating to case-marking, there may be specificity effects relating to the use of *bir*. According to Lyons (1999, p. 96), *bir* is used when a specific indefinite is intended, as in (6a);[7] in the case of nonspecifics, a bare noun is preferred, as shown in (6b). According to Enç, on the other hand, *bir* is ambiguous as to specificity, as can be seen by comparing (5a) and (5b).

(6) a. Dün bir mektup yaz-dl-m.
Yesterday one letter write-PAST-1SG
'Yesterday I wrote a letter.'
b. Dün mektup yaz-dl-m.
Yesterday letter write-PAST-1SG
'Yesterday I wrote a letter/letters.'

## The study

Long (2003) points to the importance of long-term case studies to investigate fossilization. In other words, it is essential to establish whether or not there have been changes to the grammar over an extended period of time; if there have not, one can argue for an endstate grammar and examine the nature of fossilization. As he points out, Lardiere's (1998a, b) studies are exemplary in this regard.

The subject of the present study is SD, an adult female, aged 50 at the time of initial testing. She is a bilingual speaker of Turkish (her L1) and English (her L2). SD and her family moved to Canada from Turkey when she was 40, her first significant exposure to English being at that time. She had had minimal foreign language instruction in English in High School in Turkey. At age 20, in Turkey, she took a six-month intensive course in spoken English. When she moved to Canada, she attended college, where the medium of instruction was English. She has subsequently worked in English-speaking environments. SD speaks Turkish at home. Note that her 10 years of exposure to English and use of the mother tongue are somewhat similar to what Lardiere's subject, Patty, had experienced when first recorded, after 10 years in the USA.

Four interviews were conducted over a two-month period, during which spontaneous production data were recorded. There was also some data elicitation targeting particular morphology. In addition, SD completed a number of written tasks. After an 18-month period, a fifth interview was conducted, in order to determine whether there had been any changes over time or whether SD's grammar could indeed be characterized as being in a steady state. SD also took a proficiency test (the ELI placement test), scoring 93.75%, indicative of advanced proficiency, as well as a number of other tasks which will be described below.

If variable suppliance of inflection is found, and if presence or absence of overt morphology in the L1 plays a role, then a native speaker of Turkish should in principle show greater accuracy on inflectional morphology then a native speaker of Chinese. At the same time, since Turkish lacks determiners, we expect less accurate performance on the determiner system than on verbal inflection.

## Results

2168 utterances were collected during the first four interviews and 1256 in the fifth, where utterances ranged from two words to several clauses. Single-word utterances, repetitions of what the interviewer said, and formulaic expressions have been eliminated from the analysis. As there were no changes over the first four interviews, the data have been collapsed and are reported as Time 1. Data from the fifth interview are presented as Time 2. As will become clear below, there is considerable similarity in performance between the two test periods.

### *Verbal morphology*

Results on inflectional morphology and associated closed class items are presented in Table 3, which reports on suppliance in obligatory contexts at Time 1 and Time 2. As far as verbal inflection is concerned, suppliance of agreement and tense on lexical verbs is quite high (averaging around 80%), noticeably higher than what Lardiere reports for Patty, and also higher than children still in the course of acquiring L2 English (including Erdem, with the same L1). As others have found (e.g., Lardiere, 1999; see also Zobl and Liceras, 1994),

[7] Note the lack of a case-marker in (6a). Nevertheless, according to Lyons, the interpretation is specific.

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

Table 3. *Verbal morphology in obligatory contexts.*

| | 3sg agreement: lexical verbs | | All persons: aux/cop | | Past tense: lexical verbs | | Past tense: aux/cop | |
|---|---|---|---|---|---|---|---|---|
| | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 |
| Obligatory contexts | 185 | 86 | 1589 | 1146 | 226 | 166 | 227 | 177 |
| Omissions | 40 | 16 | 36 | 28 | 34 | 40 | 5 | 5 |
| % suppliance | 78 | 81.5 | 97.5 | 97.5 | 85 | 76 | 98 | 97 |

accuracy on agreement and tense on auxiliaries (including suppletive forms of *be*) is much higher (97% or more).

Examples of missing inflection are given in (7) and (8). In (7), it can be seen that 3rd person singular inflection is usually, but not always, supplied. In (8), tense and agreement are correct on copular *be* but tense is missing on the lexical verb *spank*.

(7) And she cleans . . . the house. And wash the dishes. And, uh, she makes the bed.

(8) There was a young woman who spank her children in the mall.

A related issue concerns overuse, that is, inaccurate suppliance of morphology or "faulty" inflection, for example, 3rd person singular morphology with 1st or 2nd person subjects. In general, when inflection is supplied, it is accurate: 3rd person singular verb forms mostly occur in the context of 3rd person singular subjects. There is a highly significant contingency between person morphology on the verb and the person of the subject ($p < .0001$). As can be seen in Table 4, 3rd person singular inflection is found sometimes with 3rd person plural subjects, as shown in (9). However, oversuppliance is effectively non-existent in the case of 1st and 2nd person subjects, suggesting a number problem here rather than a person problem (cf. Meisel, 1994, for bilingual L1 acquisition).

(9) Uh, a lot of passengers is waiting.

At the fifth interview (i.e., Time 2), SD also took a grammaticality judgment task, involving pairs of sentences, like those in (10), which differed only in terms of presence versus absence of inflection or function words. SD had to indicate whether or not both sentences were possible.

(10) a. Whenever they have a party, the boys breaks bottles, glasses and plates.
b. Whenever they have a party, the boys break bottles, glasses and plates.

As can be seen in Table 5, SD was totally accurate in her judgments on tense and agreement. In other words, she rejected sentences where agreement was missing or faulty, even though she was sometimes producing such sentences.

Table 4. *Inappropriate use of verbal morphology.*

| | 1st and 2nd person subjects: all verbs | | 3rd person plural subjects: all verbs | |
|---|---|---|---|---|
| | Time 1 | Time 2 | Time 1 | Time 2 |
| Obligatory contexts | 656 | 542 | 202 | 144 |
| Inappropriate morphology | 1 | 2 | 31 | 15 |
| % faulty inflection | 0.15 | 0.37 | 15.25 | 10.4 |

Table 5. *Accuracy on grammaticality judgment task.*

| 3rd person singular subjects | 3rd person plural subjects | Tense |
|---|---|---|
| 9/9 (100%) | 9/9 (100%) | 9/9 (100%) |

### *Related syntactic properties*

As discussed above, at issue is not only presence or absence of verbal morphology but presence or absence of syntactic properties associated with the functional category Infl, including incidence of null subjects and case marking of pronoun subjects. Relevant data are presented in Table 6. Prodrop of subjects and objects is very low, a finding also reported by Haznedar and Schwartz (1997) and by Ionin and Wexler (2002). Examples are given in (11) and (12).

(11) Speak four languages.

(12) You can find in Toronto.

There are no case errors at all: in nominative contexts, pronouns occur in nominative form, in accusative contexts, pronouns occur in accusative form, indicating

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

Table 6. *Incidence of subject and object pronouns.*

| | Subjects | | Objects | |
|---|---|---|---|---|
| | Time 1 | Time 2 | Time 1 | Time 2 |
| Overt pronouns | 1990 | 636 | 307 | 294 |
| *Null pronouns | 37 | 4 | 20 | 22 |
| % suppliance | 98.5 | 99.4 | 94 | 93 |
| Case errors | 0 | 0 | 0 | 0 |

that SD makes a nominative/accusative distinction and that she knows the appropriate surface case morphology.

In general, SD reveals unconscious knowledge of certain syntactic requirements of English: subjects must be overt; subject pronouns must be marked nominative. Nominative forms of subject pronouns occur even when agreement and tense are not overtly marked, as shown in (13), suggesting that uninflected verb forms are in fact finite. This contrasts with L1 acquisition of English, where accusative pronoun subjects are found when the verb is uninflected, as can be seen in (14) (from Radford, 1990).

(13) Sometimes, uh, he go out . . . to play with his friends.

(14) Her go back in

Finally, we consider the question of verb placement. As mentioned above, a number of researchers have suggested that feature strength is "inert" even in endstate grammars, resulting in variability in verb placement (Beck, 1998; Eubank and Grace, 1998). In other words, lexical verbs are expected sometimes to appear external to the VP, surfacing in Infl or Comp. In SD's spontaneous production, there is no evidence of main verb raising either in questions or negatives. Yes/no questions are formed correctly with subject-auxiliary inversion, or without inversion and with rising intonation. *Wh*-questions are usually formed with subject-auxiliary inversion, although there are some cases of failure to invert. However, there are some cases where the lexical verb is placed to the left of adverbs and prepositional phrases, as can be seen in (15).

(15) That's what I notice because my daughter speaks very well English.

This contrasts with Patty, who is reported by Lardiere as showing no verb placement errors at all.

To further test verb raising issues, SD took two preference judgment tasks (from White, 1991, 1992), in which pairs of sentences were presented. SD had to indicate whether both sentences in each pair were acceptable, only one, or neither. One of these tasks investigated verb raising in questions, past negation and past adverbs. Results show that raising of the lexical verb in negatives or questions was totally rejected, as can be seen in Table 7. However, in the case of sentences involving verbs raised past adverbs (e.g., *Mary opens quickly the letter*) SD did accept the order where the verb precedes the adverb, consistent with such adjacency violations in her spontaneous production.

Table 7. *Accurate rejections of verb raising.*

| | |
|---|---|
| Questions | 7/7 |
| Negatives | 4/4 |
| Adverbs | 2/4 |

The second preference task concentrated only on adverb placement. Twelve sentence pairs in this task tested verb raising past adverbs. Here, SD rejected the ungrammatical order in 11 out of 12 cases.

The results of these tasks are consistent with the production data: there is no evidence of optional verb placement (hence no evidence of inert feature strength) in negatives or questions; on the contrary, the lexical verb remains in the VP, suggesting that Infl is weak, the appropriate value for English. In the case of verb placement with respect to adverb on the left edge of the VP, on the other hand, there is some evidence of incorrect verb placement. This is different from the results that Lardiere reports for Patty but similar to the results reported by White (1991, 1992) for francophone learners of English.

To summarize the findings regarding verbal inflection, while SD shows some omission of tense and agreement morphology, suppliance is generally high and accurate. She is very accurate on syntactic properties which implicate the category Infl. Adverb placement, however, shows some variability.

### *Nominal inflection*

We turn now to a consideration of SD's use of nominal inflection and function words in spontaneous production, as shown in Table 8. Suppliance of plural morphology is high (at least 87%) at both testing times. Determiners, in contrast, result in the most omissions, particularly the indefinite article.[8] While the definite article is supplied in about 72% of obligatory contexts, the indefinite article is only supplied about 60% of the time. Chi-square tests show a significant difference in suppliance of definite versus indefinite articles ($p < .0001$), between suppliance of articles versus number morphology ($p < .0001$) and between suppliance of articles versus verbal morphology ($p < .0001$). Examples of missing articles are given in (16) and (17).

[8] In looking at determiner omission, only incidence of definite and indefinite articles has been considered.

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

Table 8. *Functional morphology in the DP in obligatory contexts.*

| | Plural morphology | | Definite articles | | Indefinite articles | |
|---|---|---|---|---|---|---|
| | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 |
| Obligatory contexts | 480 | 275 | 433 | 170 | 507 | 243 |
| Omissions | 63 | 27 | 114 | 48 | 204 | 94 |
| % suppliance | 87 | 90 | 73.5 | 71.75 | 59.75 | 61.25 |

Table 9. *Overuse of articles in bare NP contexts.*

| | Time 1 | Time 2 |
|---|---|---|
| Appropriate null determiner | 552 | 332 |
| *extra determiner (definite) | 27 | 11 |
| *extra determiner (indefinite) | 29 | 10 |
| % oversuppliance | 9.2 | 5.9 |

(16) So brain is already shaped and it's not producing new cells, or whatever.

(17) But, if you're doctor, if you're lawyer, you cannot come !

As for faulty use of articles, SD never uses definite articles in place of indefinites or indefinites in place of definites, contrary to other findings reported in the literature, for example, definites for indefinites (Huebner, 1983; Thomas, 1989) or indefinites for definites (Leung, 2001). There is a highly significant contingency ($p < .0001$) between form of article (definite vs. indefinite) and context (definite vs. indefinite). However, in contexts where a bare NP is required, such as generic plurals or indefinite mass nouns, SD sometimes (less than 10%) provides an overt article, as shown in Table 9 and illustrated in (18) and (19).

(18) These days, generally, business people wear . . . wear the ties.

(19) Is it a furniture ?

### *Specificity and definiteness*

We have seen so far that SD appears to have greater problems with suppliance of determiners, particularly the indefinite article, than with verbal morphology or plural marking. For this reason, we now examine her performance on determiners in more detail. Less consistent performance on determiners might be an L1 effect: definite articles are lacking in Turkish and the indefinite is expressed with the numeral *bir* which, arguably, is not a true article. Thomas (1989) argues for L1 effects in such cases: she shows that determiner omission is higher in the case of learners whose L1s lack articles compared to learners whose L1s have an article system.

Previous research suggests that L2 learners of English tend to equate the definite article with [+specific] (or referential) and the indefinite article with [–specific] (or quantificational), hence overusing the definite article in specific indefinite contexts (Ionin and Wexler, to appear; Huebner, 1983; Thomas, 1989). Since Turkish realizes a specificity distinction morphologically, one possibility is that SD might similarly equate the definite article with [+specific]. In fact, there is no evidence for such behavior. As described above, SD never uses definite articles in place of indefinites (or vice versa). While she occasionally overuses determiners in bare NP contexts, overuse is not restricted to definite articles in specific indefinite contexts. Indefinites are also overused (see Table 9). Furthermore, as can be seen in example (18), she oversupplies the definite article in nonspecific indefinite contexts.

Another possibility, based on properties of Turkish, is that SD might make a distinction between specific and nonspecific indefinites, for example, by restricting the overt indefinite article to cases involving specific indefinites and using a null article in nonspecific indefinite contexts, parallel to the behaviour of *bir* in Turkish (at least according to Lyons (1999)). Again, there is little evidence to support such a proposal. Table 10 presents the data from contexts for indefinite articles, i.e., singular count nouns. There is no significant contingency between specificity and indefinite article usage at either Time 1 ($p = .7053$) or Time 2 ($p = .4392$). Examples are given in (20).

(20) a. It is very hard to learn a language. (nonspecific; article present)
b. I told them we should rent two-bedroom apartment. (nonspecific; article missing)
c. A friend of ours bought a piano . . . last year. (specific; article present)
d. I'm expecting telephone call. (specific;[9] article missing)

It should be noted that generic contexts have been excluded from the analysis, as have predicate nominals.

[9] It is clear from the context that SD has a specific telephone call in mind.

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

Table 10. *Relationship between specificity and suppliance of indefinite articles.*

| | Time 1 | | Time 2 | |
|---|---|---|---|---|
| | +determiner | −determiner | +determiner | −determiner |
| –specific | 81 | 55 | 79 | 38 |
| +specific | 35 | 28 | 18 | 5 |

In addition, expressions involving *certain* have been excluded. A number of researchers have argued that the expression *A certain X* is necessarily specific (e.g., Enç, 1991). However, this appears to be incorrect. For example, the expression *a certain age* is nonspecific as to age. SD uses expressions like *a certain age/a certain time* quite frequently, often without a determiner.

It seems reasonable to conclude, then, that SD knows that English articles do not realize a ±specific distinction. We turn now to the question of whether she knows that a ±definite feature is involved. One possibility is that SD does not have a true definite/indefinite distinction, i.e., no ±definite feature on Det, as Leung (2001) proposes for Chinese-speaking learners of English and French. Given that SD does not substitute definite articles for indefinites or vice versa, this seems unlikely. In the absence of a distinction, one would expect considerable confusion in suppliance of articles. Additional evidence to suggest not only that she has a definiteness distinction but that she knows the appropriate way of realizing it in the English article system is that SD produces many DPs with demonstrative determiners, possessives and quantifiers used appropriately. There is no evidence in any of the interviews of overuse of *one* as a substitute for the indefinite article, nor is there evidence of overuse of demonstratives such as *this/these* as substitutes for the definite article, both of which are reported by Robertson (2000) for Chinese speakers. When SD uses the numeral *one* or demonstratives, the contexts are such that a native speaker would do the same.

An additional way of exploring in more detail the question of whether SD represents definiteness appropriately is to examine existential contexts, where there are well known definiteness effects. As shown in (21) and (22), definite DPs are normally prohibited in existential contexts following *there*.[10]

(21) There is a unicorn in the garden.

(22) *There is the unicorn in the garden.

SD produces 146 existential *there* constructions throughout the interviews. It is therefore possible to consider whether she observes the requirement that the DP in an existential *there* construction must be indefinite – if she does, this implicates a ±definite distinction. Her existential *there* constructions are presented in Table 11. Several things are noteworthy: (i) use of definite DPs is practically non-existent. Only 1.7% of all DPs are incorrectly definite, the other determiners that are used being indefinites such as the indefinite article, numerals or quantifiers. Even if the missing articles are counted as definite, this still yields only 4% definiteness effect violations. (ii) Omission of the indefinite article in this context is much lower than overall omission of indefinite articles in the data (7% as opposed to 40%). These results strongly suggest that SD has unconscious knowledge of the definiteness/indefiniteness distinction and that, in this construction at least, her surface manifestation of article usage is highly appropriate.

Table 11. *Existential* there *constructions.*

| | Time 1 | Time 2 |
|---|---|---|
| Indefinite article | 37 | 15 |
| *Missing article | 3 | 1 |
| Bare NPs (plural/mass) | 14 | 13 |
| *The | 1 | 1 |
| Other determiners | 49 | 12 |

Additional evidence that SD is in command of the ±definite distinction comes from other tasks. As we have seen, as far as spontaneous production is concerned, SD's main problem with determiners is omission, particularly noticeable in the case of indefinite articles. A written elicited production task was also administered, adapted from Leung (2001), who based her task on Schafer and de Villiers (2000). In this task, the subject is given context sentences, each followed by a question. For native speakers of English, it is felicitous to include a determiner in the reply. The contexts set up an expectation for either a definite (23) or an indefinite (24) determiner.

(23) *Definite context*
Calvin had two pets, a pig and a crocodile. He decided to sell one of them. Which one do you think it was ?
(Expected answer: The pig./The crocodile.)

[10] There is no such effect following the locative *there*. See Lyons (1999) for discussion of contexts, such as list readings, in which definite DPs can occur in existential *there* constructions.

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

Table 12. *Accuracy on determiners in the grammaticality judgment task.*

| Indefinites | Definites |
|---|---|
| 4/5 (80%) | 5/5 (100%) |

(24) *Indefinite context*
You probably have something on your desk in your room at home. What is it?
(Expected answer: A diary./A pen./A telephone./ etc.)

SD was totally accurate in the case of definite determiners, answering with a DP with a definite determiner in 7 out of 7 contexts. Although suppliance of the indefinite article in indefinite contexts was slightly lower (9 out of 11 cases), the two cases of failure to produce an indefinite article were not, in fact, errors. In one case she replied with a mass noun and no determiner, which is appropriate for indefinite mass nouns. In the other case, a definite article was used, rather than indefinite but this could be argued to be a unique mention (*the freezer*). These results, then, suggest that SD's suppliance of definite and indefinite articles is totally appropriate. This confirms the spontaneous production data: although she omitted articles to a fairly high extent, when they were produced, they were appropriate.

Finally, the grammaticality judgment task (see above) included sentences testing for presence or absence of definite and indefinite articles. As can be seen in Table 12, SD was very accurate in her judgments, with one error on an indefinite article (that is, failing to recognize that an indefinite article was required).

Both these tasks, as well as her performance on existential *there* constructions, suggest that SD is in fact very sensitive to constraints on use of definite and indefinite articles, even though she frequently fails to produce them in spontaneous production. In other words, the ±definiteness distinction is represented in her grammar, presumably as a feature on D. This is so even though there is no overt ±definiteness distinction in Turkish.

### *Verbal and nominal morphology compared*

Many accounts of variability in morphology in L1 acquisition attribute the phenomenon to underspecification of functional categories. According to Hoekstra, Hyams and Becker (1999), verbal and nominal underspecification are connected: tense is underspecified in the verbal domain, while definiteness is underspecified in the nominal domain. In support, using data from CHILDES (MacWhinney, 1995) they show that there is a significant contingency ($p < .0001$) between presence versus absence of determiners on subject NPs requiring determiners in the adult grammar and presence versus absence of inflection on the verb, in the case of Adam's L1 acquisition of English.

If problems with inflection in L2 acquisition are due to something other than underspecification of tense or definiteness, namely missing surface inflection, whereby uninflected forms are in fact finite and Det is not missing in any "deep" sense, such a contingency is not expected. SD's data are reported in Table 13, taking into consideration only singular count noun subjects and 3rd person singular verbs, in present and past contexts.[11] Examples are given in (25) and (26).

(25) a. But the man . . . looks very happy about himself. ( +det, +agr)
b. Yeah, little boy is eating some ice cream. (–det, +agr)

(26) a. Thank God, right now, the computer correct everything. ( +det, –agr)
b. And, woman wear hat. (–det, –agr)

The majority of singular count noun DP subjects in SD's data occur with inflected verbs (see (25a)); missing determiners are found with inflected verbs (25b), in contrast to Adam. Uninflected verbs occur with overt determiners to a limited extent, (26a), and cases where the verb is uninflected and the noun lacks an article are rare, (26b), again in contrast to Adam. In other words, subjects of uninflected verbs are not invariably bare Ns, and bare Ns often occur with inflected verbs. There is no significant contingency between presence of determiners and inflection at Time 1 ($p = .6763$) or Time 2 ($p = .3275$).

### Discussion

As Lardiere (1998a, b) has previously demonstrated, discrepancies in accuracy on overt inflection versus related abstract syntactic properties are not just an acquisition phenomenon but a candidate for fossilization: otherwise fluent bilingual speakers continue to be inconsistent in their suppliance of inflectional morphology. SD has proved no exception in this regard. Given the similarity in performance between Time 1 and Time 2, with a one-and-a-half-year interval between them, it seems reasonable to suppose that SD's grammar is indeed at the endstate,

[11] By far the majority of SD's subjects were pronouns, which, following Hoekstra, Hyams and Becker (1999), are excluded from this analysis, as are proper nouns and grammatical bare NPs (mass nouns, plural nonspecifics). Retained are singular count nouns. All verb forms (lexical and auxiliary) in 3rd person singular present and past contexts are included. Missing copula and auxiliaries are counted as uninflected, as per Hoekstra, Hyams and Becker. Articles, demonstratives (*this/that X*) and possessives (*my X*, etc.) are counted as determiners.

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

Table 13. *Relationship between subjects and verbal inflection.*

| | Adam | | SD – Time 1 | | SD – Time 2 | |
|---|---|---|---|---|---|---|
| | Inflected V | Uninflected V | Inflected V | Uninflected V | Inflected V | Uninflected V |
| Overt determiner | 53 | 2 | 123 | 11 | 67 | 4 |
| *Null determiner | 4 | 39 | 28 | 4 | 8 | 2 |

especially as she had lived in Canada with extensive exposure to and use of English for a ten-year period before the initial testing. SD shows some variability in incidence of inflectional affixes and associated function words, with significantly greater omission of determiners than verbal morphology, indefinite articles being omitted the most, followed by definite.

As we have seen, there has recently been considerable discussion of the implications of failure to consistently supply surface morphology in L2 production, some researchers arguing that problems with morphology reflect an underlying syntactic impairment. In trying to determine what might be involved in such cases, it is important to distinguish between abstract morpho-syntactic properties and their associated surface forms. In other words, one must distinguish between abstract features, such as tense, agreement and definiteness, and how they happen to be realized or spelled out morphologically (Hyams and Safir, 1991; Lardiere, 2000; Schwartz, 1991). While omitting morphology in production, SD nevertheless shows considerable sensitivity to associated syntactic properties: she never omits subject pronouns (even though the L1 is a prodrop language); she has no errors of case marking; subject pronouns are invariably nominative, even if the verb is not inflected; agreement, when supplied, is accurate; she is sensitive to the ±definite distinction. Given such accuracy in both the verbal and the nominal domain, failure to supply surface morphology is unlikely to reflect a deficit in underlying competence; rather, the results suggest that the relevant underlying categories and features are represented in the interlanguage grammar. Furthermore, SD shows greater accuracy in other tasks, suggesting that variability is largely confined to spontaneous production. In other words, the data are consistent with claims that missing inflection is in some sense a surface phenomenon (Haznedar and Schwartz 1997; Lardiere 2000; Prévost and White 2000).

Nevertheless, missing inflection explanations suffer from being post hoc. For example, such proposals do not predict inevitable variability in suppliance of overt L2 morphology but seek only to account for such variability as is found. This contrasts with the position arguing for grammatical impairment (e.g., Hawkins, 2000, 2001), where problems with suppliance of overt L2 morphology are predicted in those cases where the L1 and L2 differ as to which abstract features are represented in the grammar.

In fact, potential L1 effects have been relatively little addressed from the missing surface inflection perspective. While the data from SD suggest L1 influence, it is of a limited kind. Given the evidence of underlying knowledge of L2 categories and features presented above, there do not appear to be lasting L1 effects on underlying morpho-syntactic representation. But there do appear to be other effects, as we have seen. SD, a speaker of an L1 (Turkish) with rich verbal inflection, performs much more accurately on verbal morphology than Patty, a speaker of an L1 (Chinese) lacking inflection. Furthermore, SD supplies verbal inflection and plural morphology (present in the L1 Turkish) more consistently than determiners (lacking in Turkish). In other words, where the L1 has overt inflection, she is relatively successful in consistently producing the appropriate inflection in the L2. Presence of overt inflectional morphology in the L1 appears to sensitize the L2 speaker to overt morphology in the L2, and to facilitate its use (see Montrul (2000) for related proposals as far as argument-structure changing morphology is concerned).

This raises the question of why overt L1 morphology should have such a facilitating effect and, conversely, why absence of overt morphology in the L1 should lead to problems in L2 production. One recent suggestion is that it is not presence or absence of equivalent overt L1 morphology as such that is at issue but, rather, the way in which morphology is represented prosodically (Goad, White and Steele 2003; Goad and White, in preparation; see also Lardiere 2002). In the case of Turkish, no functional material is permitted at the left edge of a prosodic word, in contrast to English. If SD's endstate English grammar is constrained by L1 prosodic structure, this would explain why suppliance of determiners is significantly depressed (because they cannot be represented prosodically) and yet there is considerable accuracy in terms of features like definiteness (because determiners and their features are represented morpho-syntactically) (Goad and White, in preparation). Furthermore, the fact that SD's difficulties with inflection are largely associated with spoken language is what would be expected under a prosodic account.

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

If L1 prosodic structure is implicated in accounting for missing inflection, it may help to explain other puzzles. For example, if missing inflection results from a failure to access or spell out morphological forms that are in fact represented in the L2 speaker's lexicon, it is not clear why performance should be so much better when suppletion is involved (as is the case with tense and agreement on auxiliaries and the copula) than when affixation is involved, nor is it clear why pronoun case should be unproblematic (see Lardiere, 2000, for relevant discussion). One would expect underspecified or default forms to surface in all contexts but this is far more common in the case of bound morphology (although, as we have seen, SD does have problems with determiners). The discrepancy between bound and free forms falls out naturally from an account based on L1 prosody. The prosodic representation of English affixes involves adjunction to a prosodic word (Goad, White and Steele, 2003), which is not permitted in certain languages, for example, Mandarin, accounting for the failure of Mandarin speakers to produce inflectional affixes in L2 English. Stressed items, on the other hand, form their own prosodic word, so adjunction is not required. If function words are stressed in L2 speech, as is often the case, there is no problem representing them. (Indeed, when SD produces determiners, she tends to stress them.)

Finally, as the results from SD show, there is virtually no change from Time 1 to Time 2 in the proportion of non-suppliance of inflectional morphology; Lardiere (1998a, b) reports a similar lack of change in the case of Patty. On the one hand, such stability suggests that endstate grammars are indeed involved. On the other hand, if the grammar in fact represents L2 categories and features, it is not clear why the proportion of error should be so stable over time. Why should SD have exactly the same difficulty accessing determiners after a gap of 18 months? Why should Patty have exactly the same difficulty accessing verbal inflection after a gap of 10 years? Why, in other words, should suppliance of morphology show apparently consistent evidence of fossilization at a nonnative level, when underlying knowledge does not? If a representational issue is, after all, involved (L1 prosody rather than L1 morpho-syntax) then such consistency is not surprising. What remains unexplained, however, is why some L2 speakers continue to show strong L1 influence in this domain, while others do not. In other words, we are still unable to predict when fossilization will take place.

## References


Beck, M.-L. (1998). L2 acquisition and obligatory head movement: English-speaking learners of German and the local impairment hypothesis. *Studies in Second Language Acquisition*, 20, 311–348.

Bley-Vroman, R. (1990). The logical problem of foreign language learning. *Linguistic Analysis*, 20, 3–49.

Cheng, L. & Sybesma, R. (1999). Bare and not-so-bare nouns and the structure of NP. *Linguistic Inquiry*, 30, 509–542.

Clahsen, H. (1988). Parameterized grammatical theory and language acquisition: A study of the acquisition of verb placement and inflection by children and adults. In S. Flynn & W. O'Neil (eds.), *Linguistic theory in second language acquisition*, pp. 47–75. Dordrecht: Kluwer.

Enç, M. (1991). The semantics of specificity. *Linguistic Inquiry*, 22, 1–25.

Eubank, L. & Grace, S. (1998). V-to-I and inflection in non-native grammars. In M.-L. Beck (ed.), *Morphology and its interfaces in L2 knowledge*, pp. 69–88. Amsterdam: John Benjamins.

Fodor, J. D. & Sag. I. A. (1982). Referential and quantificational indefinites. *Linguistics and Philosophy*, 5, 355–398.

Goad, H. & White, L. (in preparation). Ultimate attainment of L2 inflection: effects of L1 prosodic structure.

Goad, H., White, L. & Steele, J. (2003). Missing surface inflection in L2 acquisition: A prosodic account. *Proceedings of the 27th Annual Boston University Conference on Language Development*, 264–275. Somerville, MA: Cascadilla Press.

Gürel, A. (2000). Missing case inflection: implications for second language acquisition. In C. Howell, S. Fish & T. Keith-Lucas (eds.), *Proceedings of the 24th Annual Boston University Conference on Language Development*, pp. 379–390. Somerville, MA: Cascadilla Press.

Hawkins, R. (2000). Persistent selective fossilisation in second language acquisition and the optimal design of the language faculty. *Essex Research Reports in Linguistics*, 34, 75–90.

Hawkins, R. (2001). *Second language syntax: A generative introduction*. Oxford: Blackwell.

Hawkins, R. & Chan, C. Y.-H. (1997). The partial availability of Universal Grammar in second language acquisition: The 'failed functional features hypothesis'. *Second Language Research*, 13, 187–226.

Haznedar, B. (2001). The acquisition of the IP system in child L2 English. *Studies in Second Language Acquisition*, 23, 1–39.

Haznedar, B. & Schwartz, B. D. (1997). Are there optional infinitives in child L2 acquisition? In E. Hughes, M. Hughes & A. Greenhill (eds.), *Proceedings of the 21st Annual Boston University Conference on Language Development*, pp. 257–268. Somerville, MA: Cascadilla Press.

Hoekstra, T., Hyams, N. & Becker, M. (1999). The role of the specifier and finiteness in early grammar. In D. Adger, S. Pintzuk, B. Plunkett & G. Tsoulas (eds.), *Specifiers: Minimalist approaches*, pp. 251–270. Oxford: Oxford University Press.

Huebner, T. (1983). *A longitudinal analysis of the acquisition of English*. Ann Arbor, MI: Karoma.

Hyams, N. & Safir, K. (1991). Evidence, analogy and passive knowledge: Comments on Lakshmanan. In L. Eubank (ed.), *Point counterpoint: Universal Grammar in the second language*, pp. 411–418. Amsterdam: John Benjamins.

Ionin, T. & Wexler, K. (2002). Why is 'is' easier than '-s'? Acquisition of tense/agreement morphology by child


https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press

second language learners of English. *Second Language Research*, 18, 95–136.

Ionin, T. & Wexler, K. (to appear). The certain uses of *the* in L2-English. In J. Liceras, H. Zobl & H. Goodluck (eds.), *L2 links: Proceedings of the 2002 Generative Approaches to Second Language Acquisition Conference*. Somerville, MA: Cascadilla Press.

Ioup, G. (1977). Specificity and the interpretation of quantifiers. *Linguistics and Philosophy*, 1, 233–245.

Kornfilt, J. (1997). *Turkish*. London: Routledge.

Lardiere, D. (1998a). Case and tense in the 'fossilized' steady state. *Second Language Research*, 14, 1–26.

Lardiere, D. (1998b). Dissociating syntax from morphology in a divergent end-state grammar. *Second Language Research*, 14, 359–375.

Lardiere, D. (1999). Suppletive agreement in second language acquisition. In A. Greenhill, H. Littlefield & C. Tano (eds.), *Proceedings of the 23rd annual Boston University Conference on Language Development*, pp. 386–396. Somerville, MA: Cascadilla Press.

Lardiere, D. (2000). Mapping features to forms in second language acquisition. In J. Archibald (ed.), *Second language acquisition and linguistic theory*, pp. 102–129. Oxford: Blackwell.

Lardiere, D. (2002). Second language knowledge of [±past] vs. [±finite]. Paper presented at the Generative Approaches to Second Language Acquisition Conference (GASLA 6), Ottawa.

Leung, Y.-K. I. (2001). The initial state of L3A: Full transfer and failed features? In X. Bonch-Bruevich, W. Crawford, J. Hellerman, C. Higgins & H. Nguyen (eds.), *The past, present and future of second language research: Selected proceedings of the 2000 Second Language Research Forum*, pp. 55–75. Somerville, MA: Cascadilla Press.

Leung, Y.-K. I. (2002). Functional categories in second and third language acquisition: A cross linguistic study of the acquisition of English and French by Chinese and Vietnamese speakers. Ph.D. dissertation, McGill University.

Long, M. (2003). Stabilization and fossilization in interlanguage development. In C. Doughty & M. Long (eds.), *Handbook of second language acquisition.* Oxford: Blackwell.

Lyons, C. (1999). *Definiteness*. Cambridge: Cambridge University Press.

MacWhinney, B. (1995). *The CHILDES project: tools for analyzing talk*. Hillsdale, NJ: Lawrence Erlbaum.

Meisel, J. (1991). Principles of Universal Grammar and strategies of language learning: Some similarities and differences between first and second language acquisition. In L. Eubank (ed.), *Point counterpoint: Universal Grammar in the second language*, pp. 231–276. Amsterdam: John Benjamins.

Meisel, J. (1994). Getting fat: finiteness, agreement and tense in early grammars. In J. Meisel (ed.), *Bilingual first language acquisition*:*French and German grammatical development*, pp. 89–129. Amsterdam: John Benjamins.

Meisel, J. (1997). The acquisition of the syntax of negation in French and German. *Second Language Research*, 13, 227–263.

Montrul, S. (2000). Transitivity alternations in L2 acquisition: toward a modular view of transfer. *Studies in Second Language Acquisition*, 22, 229–273.

Müller, N. (1998). UG access without parameter setting: a longitudinal study of (L1 Italian) German as a second language. In M.-L. Beck (ed.), *Morphology and its interfaces in L2 knowledge*, pp. 115–163. Amsterdam: John Benjamins.

Prévost, P. & White, L. (2000). Missing surface inflection or impairment in second language acquisition? Evidence from tense and agreement. *Second Language Research*, 16, 103–133.

Radford, A. (1990). *Syntactic theory and the acquisition of English syntax*. Oxford: Blackwell.

Robertson, D. (2000). Variability in the use of the English article system by Chinese learners of English. *Second Language Research*, 16, 135–172.

Rohrbacher, B. (1999). *Morphology-driven syntax: A theory of V to I raising and pro-drop*. Amsterdam: John Benjamins.

Schafer, R. & de Villiers, J. (2000). Imagining articles: What *a* and *the* can tell us about the emergence of DP. In C. Howell, S. Fish & T. Keith-Lucas (eds.), *Proceedings of the 24th Annual Boston University Conference on Language Development*, pp. 609–620. Somerville, MA: Cascadilla Press.

Schwartz, B. D. (1991). Conceptual and empirical evidence: A response to Meisel. In L. Eubank (ed.), *Point counterpoint: Universal Grammar in the second language*, pp. 277–304. Amsterdam: John Benjamins.

Selinker, L. (1972). Interlanguage. *International Review of Applied Linguistics*, 10, 209–231.

Smith, N. & Tsimpli, I.-M. (1995). *The mind of a savant*. Oxford: Blackwell.

Sorace, A. (2000). Introduction: Syntactic optionality in non-native grammars. *Second Language Research*, 16, 93–102.

Thomas, M. (1989). The acquisition of English articles by first- and second-language learners. *Applied Psycholinguistics*, 10, 335–355.

Underhill, R. (1976). *Turkish grammar*. Cambridge, MA: MIT Press.

Vikner, S. (1997). V-to-I movement and inflection for person in all tenses. In L. Haegeman, (ed.), *The new comparative syntax*, pp. 189–213. London: Longman.

Wexler, K. (1994). Optional infinitives, head movement and the economy of derivations. In D. Lightfoot & N. Hornstein (eds.), *Verb movement*, pp. 305–350. Cambridge: Cambridge University Press.

White, L. (1991). Adverb placement in second language acquisition: some effects of positive and negative evidence in the classroom. *Second Language Research*, 7, 133–161.

White, L. (1992). Long and short verb movement in second language acquisition. *Canadian Journal of Linguistics*, 37, 273–286.

White, L. (2003). *Second language acquisition and Universal Grammar*. Cambridge: Cambridge University Press.

Zobl, H. & Liceras, J. (1994). Functional categories and acquisition orders. *Language Learning*, 44, 159–180.

**Received October 1, 2002 Revision accepted February 12, 2003**

https://doi.org/10.1017/S1366728903001081 Published online by Cambridge University Press