

8 Parameters, Processing and Feature Reassembly in the L2 French Determiner Phrase

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Introduction

A recent keynote article on the ‘contrastive analysis of features’ (Lardiere, 2009a) prompted a lively discussion from several respondents and a spirited answer from the original author (Lardiere, 2009b). Lardiere argues that parameter resetting models of second language acquisition (SLA) are inadequate, as is the very concept of parameter, and that selection/reassembly of formal features furnishes a preferable perspective. Lardiere updates the term *contrastive analysis* (Lado, 1957) – the idea that ease or difficulty of SLA is a function of L1 transfer or interference – to a process by which learners ‘look for morphological correspondences in the L2 to those in their L1, presumably on the basis of semantic meaning or grammatical function’ (Lardiere, 2009a: 191). Several respondents (Carroll, 2009; Liceras, 2009; Montrul & Yoon, 2009; Slabakova, 2009; White, 2009) take issue with her rejection of parameters, question her use of the term ‘features’, and seek to clarify the distinction between feature selection and reassembly. All the articles use evidence from the nominal domain, testing parameters, definiteness, specificity, gender and number in a wide range of languages (e.g. English, Norwegian, Korean, Mandarin, Samoan).

L1 English and L2 French provide a testing ground for ideas put forth in the reassembly discussion, namely the nature of formal features and the role of parameters in syntactic theory and SLA. In this chapter, we explore these ideas by examining the development of the determiner phrase (DP) in L2 French of three advanced Anglophone learners, with respect to gender and nominal agreement, which are not found in English, as well as [definite], [count], features that do exist in English. The first section presents the morphosyntax of French DPs vis-à-vis English. The second section reviews the theoretical framework and earlier research in SLA and syntactic theory, and

also summarizes research on the processing of gender. The third section presents our new empirical data, and the last section discusses it in terms of parameter resetting and feature reassembly. We conclude that parametrically different gender features and nominal agreement are accessible to adult L2 learners, but that L1 transfer nevertheless affects the implementation of gender assignment and concord, despite relatively high levels of accuracy. We also show that feature reassembly in L2 French of L1 features is not totally unproblematic as simple transfer accounts would suggest.

French DP Morphology and Syntax

French is an Indo-European language which shares many linguistic properties with English, but it differs from English in several key aspects, including its intrinsic gender feature on all nouns, and agreement of the determiner and adjective with the head noun in gender and number (Bernstein, 1991; Carstens, 2000; Longobardi, 1994). For example, consider gender and number agreement of determiners in (1) and (2) below:

- (1) a. *le téléphone* ‘the (M-SG) telephone (M-SG)’¹
 b. *les téléphones* ‘the (M-PL) telephones (M-PL)’
- (2) a. *la figure* ‘the (F-SG) face’
 b. *les figures* ‘the (F-PL) faces’

Note that there is no consistent morphological cue (e.g. masculine *-o* as in Spanish) in French gender (but cf. Lyster, 2006). Furthermore, gender agreement has a ‘prestigious’ position in gender languages, and errors are very noticeable to native speakers as an indication of non-nativeness.² The written and spoken languages differ in plural marking in French, with orthographic *-s* marking the plural of the determiner, noun and adjective in the written form, while vowel quality of the determiner indicates plurality in the spoken form. Due to the fact that the final orthographic *-s* is no longer pronounced, it is not an oral mark of plural as it is in English nouns (both written and spoken). French masculine and feminine plural determiners are identical, with gender marking neutralized in the plural *les*. English, on the other hand, lacks the gender feature, as well as concord for gender and number on Det and Adj.

Another difference between French and English is placement of attributive adjectives, noun-adjective in French and adjective-noun in English (3), with gender and number concord in French (for adjective placement in French, see also Guijarro-Fuentes, this volume).

- (3) a. *le tableau blanc*
 the-M-SG painting-M-SG white-M-SG
 ‘the white painting’

- b. *les tables blanches*
 the-F-PL tables-F-PL white-F-PL
 'the white tables'

Adjectives carry number, but it is only obvious orthographically (plural *-s*) and with variable adjectives in *-aux* ending (pronounced [o]) as in *sociaux*-m-pl 'social' (singular *social*). French and English also differ in the use of articles, which are almost always required in French (except in certain idioms such as *rendre justice* 'to render justice'), but may be omitted in English in various contexts like generic sentences or as indefinite plurals (*Dogs have fleas*).

In contrast, French and English are similar in using the same morphological mark [def(inite)] to signify speaker familiarity, while indicating specificity by context and only indirectly through morphosyntax (cf. Ionin *et al.*, 2004). The non-gender feature inventory of French and English is then similar, although morphological realization is distinct. For example, French, like English, marks definiteness (familiar to speaker and listener, presupposed) on definite (*le/la/les* 'the') [+def] and on indefinite articles [-def] *un/une/des* 'a/some' (Ionin *et al.*, 2004), as in (4) and (5):

- (4) *Je cherche la clé.*
 'I'm looking for the key.'
- (5) *Donnez-moi un croissant.*
 'Give me a croissant.'

One additional use of definite articles in French as opposed to English is to indicate generic, as in (6) below:

- (6) *J'aime/je déteste/je préfère le pain.*
 'I like/I hate/I prefer *the bread.'

A related difference in the use of articles in French can be seen with plural indefinites and partitive articles, which modify [-count] nouns and are invariably [-def]; English has a null article in these cases:

- (7) *Je mange du pain/ des fraises.*
 I eat some [-def, +M, -ct] bread/ [-def, +ct, +pl] strawberries.
- (8) *Il boit de la bière.*
 'He drinks beer. [-def, +fem, -ct]'

In negative contexts (and other quantified contexts, cf. Herschensohn, 1988), English uses [null]/any, while French uses *de*, which we refer to below as the DE rule.



- (9) *Je ne mange pas de pain/fraises.*
 'I don't eat [null]/any bread/strawberries.'

Negative *de* results from a late rule of *DE* morpho-phonological realization (e.g. *pas du* → *pas de*) by which featural distinctions are neutralized under quantificational/negative scope.

Adopting the feature specification used by Hawkins *et al.* (2006), English articles would then include [D, +/- def, +/- ct, +/- pl]. English *a/an* would have the features [D, -def, -pl]; *the*, in turn, would have [D, +def], and null D would simply have [D]. French definite and indefinite articles would also carry gender and number features: French *le, la, les* [D, +def, +/- fem, +/- pl]. French partitive articles have the same features as the indefinite; the additional feature that they carry is [-count]. We next turn to the theoretical background that we assume.

Theoretical Framework

In this section we begin an outline of relevant tenets of the minimalist views of syntactic theory we adopt in this chapter. We then recapitulate the main ideas put forth in recent studies of SLA. The final subsections deal with representation and processing of DP in French and English.

Parametric variation and distributed morphology

Given a minimalist theoretical framework (Chomsky, 2001, 2002, 2006), syntactic categories have interpretable features, such as future tense or singular number, which are necessary for the interpretation of the sentence. The functional categories that often correspond have complementary uninterpretable or *u*features that must be valued and deleted before spell-out, finalizing of the syntactic operation in its realization at phonetic form (PF). Recent work has advocated a phase-based approach to a variety of phenomena, including DP (cf. Carstens, 2000, 2003; Chomsky, 2006; D'Alessandro & Roberts, 2008).

To describe the nominal domain, Carstens (2003) proposes a simplified notation, functional phrase (FP), postulating as a complement to D an iterated *n*P, potentially containing other FPs (e.g. number, quantifier). She considers agents and possessors of NP to be generated in a shell, *n*P projected by a light noun. The *n*P acts much as the *v*P, carrying nominal functional features that the lexical noun needs to be grammatically implemented in the DP and eventually the sentence. The iterated *n*P can serve functions which had previously been designated as separate functional projections such as gender and number in earlier analyses of DP (e.g. Bernstein, 1991; Longobardi, 1994; Mallen, 1997).

Carstens adopts the view that N raises to higher FPs to check number and gender in the framework of Chomsky (1995). In her account, these

features are interpretable on nouns, but uninterpretable on adjectives and determiners (cf. Harris, 1991). The interpretable features of the noun check and delete uninterpretable determiner/adjective features in close enough proximity (Carstens, 2003). In languages with gender, the interpretable gender and number features of the head noun may delete more than one uninterpretable feature (since there may be several adjectives and determiners for one noun), so the syntactic operation employed is multiple agree, a procedure by which the probe finds any matching goal in the phase it heads to delete uninterpretable features. In French, gender is an idiosyncratic feature learned for each lexical item, and concord is a morphosyntactic rule, agree, that matches interpretable [+/- feminine] with uninterpretable [*ugender*].

Systematic variation between French and English in DP characteristics has led several scholars to propose a DP parameter distinguishing languages with respect to gender assignment, concord, adjective placement and determiner realization (Abney, 1987; Bernstein, 1991, 1993; Bosque & Picallo, 1996; Cinque, 1994; Delfitto & Schroten, 1991; Knittel, 2005; Mallen, 1990, 1997; Picallo, 1991; Valois, 1991). For example, Longobardi (1994) lays out several distinctions between Germanic and Romance DPs with respect to noun raising, bare articles and semantic interpretation, among other factors. Mallen (1990), Knittel (2005), Valois (1991) and others have proposed that in Romance languages the noun raises above the attributive adjective to give the N-A order, whereas in English the noun remains *in situ*, giving A-N order. For French and English, the noun-raising parameter can be seen as parallel to the verb-raising parameter whereby French verbs raise above adverbs/negation and English verbs do not (Emonds, 1978; Pollock, 1989). A parametric approach is advantageous in proposing a systematic distinction between two languages which can account for several clustered phenomena (e.g. gender and number marking, word order), and also in providing a model that could be appropriate for looking at transfer and restructuring in SLA.

Newmeyer (2004, 2005) discusses the purported advantages of the concept of parameter as expounded in the principles and parameters framework: parameters, which entailed a set of predictable clustered properties, could be set on the basis of minimal triggers by children during L1 acquisition. Newmeyer (2004, 2005) counters these assumptions with a number of arguments. For example, he points out that clustered properties have shown no cross-linguistic consistency and L1 learnability can be accounted for without parameters. He argues instead that 'a theory of performance – in particular, that aspect of performance devoted to online processing – is well designed to handle this variation' (Newmeyer, 2005: 119), citing the performance–grammar correspondence that conventionalized syntactic structures parallel performance preferences. Several of these points (in slightly different L2 guises) are also made by Lardiere (2009a, 2009b). We return to the validity of the construct parameter in the discussion.

Turning now to morphological realization, in this study we adopt a distributed morphology account (Hale & Keyser, 1993; Halle & Marantz, 1993; Harley & Noyer, 1999; Lumsden, 1992), for which there is late insertion of morphological items matching terminal node feature bundles that need to be spelled out post-syntactically. Matching does not require complete identity as long as features are not mismatched (e.g. they may be fewer). The ‘unmarked’ forms tend to be underspecified for some features (cf. Lumsden, 1992), whereas more marked forms have explicit features. Hawkins *et al.* (2006: 20) explain article use in terms of late insertion: ‘when two vocabulary items have features that are non-distinct from the same terminal node, the one with the greater number of features is the one that is inserted’. Harley and Ritter (2002: 485) propose a feature geometry (a branching hierarchy) for pronouns that systematically describes morphological features and gives a criterion for markedness: ‘the more marked a given feature combination is, the more nodes will be required to represent it’. In their geometry, grammatical number (‘individuation’) is higher (thus less marked) in the hierarchy than gender, and additional morphosyntactic diagnostics can indicate markedness (e.g. third person pronouns are less marked than first and second). In the case at hand, the bare article in English is unmarked for definite, singular or plural, whereas the single definite in French is marked for number and gender as well as definite. Summarizing, English and French vary parametrically in terms of the DP with respect to the uninterpretable features of gender and number that require concord and noun raising in French, but not English. In SLA, according to the theoretical framework outlined above, similar abstract features should transfer from L1 to L2 and differing features would need to be restructured. We note that while sharing abstract properties ([def, count]), the feature bundles of French and English may be differentially specified at spell-out (cf. Hawkins’ feature specification above). We next turn to L2 studies of this parametric variation in DP between English and French.

Previous studies of L2 DP parameters

L1 transfer is a well-accepted influence acknowledged in the cited articles, among others, and L2 research has explored its role in the development of L2 nominal features such as gender and specificity (cf. Ionin & Zubizarreta, 2010). For example, some works on L2 nominals argue that gender features non-existent in L1 may be inaccessible to adult L2 learners (Hawkins & Franceschina, 2004) or persistently problematic (Dewaele & Véronique, 2000, 2001), while others claim that such functional features are partially available (Sabourin *et al.*, 2006) or completely accessible (White *et al.*, 2004) to adult learners. Some recent studies suggest that difficulty with L2 syntax is related less to core features such as gender and number, and more to the interface of syntax with other domains, such as the syntax–discourse interface (Montrul, 2010; Sánchez *et al.*, 2010; Sorace & Filiaci, 2006).

One approach to feature transfer, exemplified by the interpretability hypothesis (IH; Tsimpli & Mastropavlou, 2007; Tsimpli & Papadopoulou, 2009) and the representational deficit hypothesis (RD; Franceschina, 2001; Hawkins, 2001; Hawkins & Chan, 1997; Hawkins & Franceschina, 2004; Snape *et al.*, 2009), generally holds that adult learners are limited to their native parametric settings. Following Tsimpli and Roussou (1991), these hypotheses suggest that parameterized L2 functional features cannot be acquired after the critical period. For example, Hawkins and Franceschina (2004) treat native gender concord as a syntactic-based operation which must be parametrized during the critical period. L1 values of uninterpretable functional features remain available to adults, but after the critical period L2 parametric values that differ from L1 cannot be acquired; inflectional errors in adult learners are therefore due, on this account, to a syntactic deficit in the underlying competence of L2 adult learners. In such a view, although learners cannot access uninterpretable functional features that are unavailable in their native language, they are able to use compensatory strategies to gain competence in their L2. They use cognitive strategies (e.g. rote memorization), vocabulary-style lexical learning, and misanalysis based on native syntax. So their ability in L2 may approximate accurate performance, but the underlying grammatical representation does not resemble that of native speakers of the language in question.

In contrast, other studies suggest that learners eventually may reset the parameters to L2 values through gradual restructuring induced by an inability to parse primary linguistic data. The problem of missing or inaccurate L2 inflection may be due to a number of other factors, not simply syntax. For example, the L2 problem may be one of PF mapping and not impaired underlying syntactic competence, a tradition that draws on full transfer/full access (FT/FA; Schwartz & Sprouse, 1996) and missing surface inflection (Haznedar & Schwartz, 1997; Lardiere, 1998; Prévost & White, 2000). Mistakes would relate to matching difficulties between syntactic terminal nodes and surface morphology at PF, and there would be no critical period functional deficit to examine since SLA is similar for children and adults. For example, Bruhn de Garavito and White (2002), White *et al.* (2004) and Leung (2005) argue against a syntactic deficit of DP parameter resetting. Another view of a non-syntactic problem for L2 learners is Goad and White's (2006, 2008, 2009) prosodic transfer hypothesis, which points to native prosodic settings as being key to the accurate acquisition of L2 morpho-prosodic structures. A prosodic mismatch, in their view, constitutes interference that may hinder the acquisition of L2 articles, for example.

Feature reassembly

Yet another perspective is furnished by Lardiere (2007), who argues against parameter settings as a means of accounting for the variability found

in L2 grammar. She proposes instead a feature assembly analysis in which the mapping of features from L1 to L2 may not always be accurate. More recent work (Lardiere, 2009a, 2009b) updates the framework of contrastive analysis (Lado, 1957), which posits transfer (i.e. the transfer of shared features) and interference (i.e. the transfer of differing features) to explain learner difficulty. She claims that L2 learners ‘look for morpholexical correspondences in the L2 to those in their L1, presumably on the basis of semantic meaning or grammatical function’ (Lardiere, 2009a: 191). She cites Newmeyer (2004, 2005), who argues against parameters on theoretical grounds and proposes that language processing must be taken into account to understand cross-linguistic variation.

In order to account for systematic errors found in SLA without use of parameters, Lardiere emphasizes that even when features are nominally the same, they may be configured (packaged) differently in two languages, and have a different lexical distribution. To illustrate her framework using the L1/L2 languages targeted in our study, English and French share [def], [count], but French additionally packages [gender] with those features. As for morphological realization, [-count] D may be null in English but not so in French. A further complication that Lardiere explores is non-equivalence of a given feature such as [plural] cross-linguistically, a topic she carefully illustrates in an extended investigation of the feature, its collocational traits, and its lexical realization in English, Mandarin and Korean. She convincingly shows that simply possessing the same formal feature in the L1 and L2 inventory is not sufficient to ease reassembly. She concludes by reiterating her advocacy of ‘the constraining role of UG’, suggesting that one aspect could be the hierarchical relations of formal feature sets (cf. Cowper, 2005; Harley & Ritter, 2002).

Gender processing

A related thread of research, which provides a wealth of empirical data, is the role of L1 influence in native and L2 processing of gender. Guillelmon and Grosjean (2001) find that Anglophones who acquire L2 French as children (early bilinguals) show responses to correct and incorrect gender that are indistinguishable from those of native speakers, whereas late bilinguals have much slower responses, a finding that Hawkins and Franceschina (2004) use to support their idea of a critical period for the acquisition of gender features. Sabourin *et al.* (2006) also find a role for L1, but it is not categorical: Anglophone (no gender) learners of gendered Dutch have more difficulty processing gender than do gendered Romance speakers, but this latter group is less adept at learning L2 Dutch than native Germans. Although German has three genders – masculine, feminine, neuter – the two genders of Dutch – common and neuter – correspond to German masculine-feminine and neuter, respectively. In a similar comparison for gender concord/discord

in L2 Dutch determiners, Sabourin and Stowe (2008) find that L1 German learners match native Dutch speakers in their P600 brainwave response to syntactically anomalous discord, whereas L1 French learners of Dutch show no such sensitivity. The authors note that ‘in the case of gender, it is not sufficient to have gender in the L1, but that the systems must be very similar to that of the L1’ (Sabourin & Stowe, 2008: 422). Sabourin’s work has shown that L1 transfer operates at two levels, both abstract (which she terms ‘deep’, as for Romance speakers learning Dutch where both languages have a *u*gender feature) and similar (which she calls ‘surface’, as for German speakers learning Dutch where both languages are genetically close). The complement of similar morphology (e.g. German and Dutch gender) is *dissimilar* morphology (e.g. French and Dutch), a differential realization of the same abstract feature(s). Dissimilar morphology can be seen as an example of a feature realignment problem *à la* Lardiere.

While online processing of gender is problematic for L2 learners, especially if the L1 is genderless, Sagarra and Herschensohn (2010, 2011) find that Anglophone learners can, with sufficient experience, gain sensitivity to gender concord and discord in L2 Spanish. In their study (2010), adult beginning and intermediate English-speaking learners of Spanish and Spanish monolinguals completed a self-paced reading (online) and a grammaticality judgement task (offline) containing sentences with noun-adjective gender/number agreement/disagreement. The results revealed that all the participants were highly accurate in the offline task, but only intermediate L2 Spanish learners and Spanish monolinguals showed sensitivity to gender and number violations in the online task. In addition, intermediates with higher working memory were more accurate on some comprehension questions. These findings indicate that adult learners can develop processing patterns qualitatively similar to those of native speakers and that proficiency and working memory influence their acquisition.

Summarizing, Anglophone learners of L2 French need to gain interpretable number and gender on N and uninterpretable gender/number on D and A (number-gender concord). They also need to realign the abstract features that are shared between French and English, making sure that the morphological bundle is correctly specified at spell-out. The L2 approaches discussed above allow for inflectional errors for different reasons: parameter resetting accounts either restrict settings to native ones (e.g. interpretability) or allow new parametric values (e.g. FT/FA); feature reassembly eschews parameters, holding that factors such as feature mismatches, realignment difficulties and morphological mapping contribute to less than optimal performance. The following questions can be asked in considering L2 French DP:

- How effective is the parameter resetting model for SLA?
- How effective is the feature reassembly model for SLA?
- What is the nature of the L2 morphological errors?

In the next section, we present new evidence from a study of three advanced L2 speakers of French (L1 English) to add to the extant DP research in order to answer these questions.

The Study

In this section we compare L2 French production of DP morphosyntax in the oral interviews of Chloe (age of acquisition onset 13), Eleanor (age of onset 17) and Max (age of onset 48), all post-puberty L2 learners. We have seen that gender attribution and concord is a problematic area for L2 learners, as indicated by several recent studies cited in the previous section. Here we examine the use of nominal morphosyntax in three interviews for each individual conducted before, during and after a period abroad of seven to nine months (a total of nine interviews over a nine-month period). The interview data provide a window on the qualitative performance of the three learners during their time abroad, although the very small sample size cannot provide data amenable to statistical analysis. The following section provides a description of the subjects.

Subjects

Chloe, interviewed at age 22–23 years, had studied French for nine years, including two years in an American high school, before she spent six months immersion at age 16 in France (Herschensohn, 2001, 2003). Subsequently, she studied French in college, spent four months in France in her junior year (age 20), and then became an *assistante d'anglais* (English-teaching assistant) in the French overseas department of Réunion for nine months. Max began his French studies at the age of 48, independently completing the 'French in Action' video programme of first-year French. By the time of the interview, he had studied French for 12 years on his own with the help of a native French tutor who met with him and his wife Eleanor for one hour weekly for conversational exchanges over a period of 11 years previously. Eleanor studied for two years in high school, took a minor in college in French and stayed for two months with a family in France at the age of 28; moreover, she and Max spend two- to three-week vacations annually in France. Both Eleanor and Max do extensive reading, independent vocabulary/grammar study, audio listening and television viewing in French for 16–18 hours per week when at home. They also speak French to one another at dinner three nights a week. At the time of the interviews, Max and Eleanor were spending four months in Paris and three months in Lyon, where they had daily contact with French in a variety of contexts. Table 8.1 summarizes these points.

Although the project was undertaken to document possible changes over the period abroad, the results in both verbal and nominal domains showed

Table 8.1 Characteristics of subjects

<i>Subject</i>	<i>Age of onset</i>	<i>Age at interview</i>	<i>Immersion</i>
Max	48	59–60	13 months
Eleanor	17	53	15 months
Chloe	13	22–23	19 months

that the learners were sufficiently advanced to have reached a fairly steady state, and so the differences among the interviews were fairly minimal. The interviews were conducted by one of the authors (certified as an ACTFL proficiency tester in French), who had informally evaluated the three as being at advanced level according to the ACTFL Guidelines (cf. <http://www.actfl.org/i4a/pages/index.cfm?pageid=4236>, accessed 9 February 2015). The interviews were conducted in a university office or in the learner's residence in France. The structure of the interview included elicitations in the following areas: present tense; descriptions of everyday routines and environments; past and future tenses; hypothetical situations; role play including a problem (e.g. returning shoes to a shoe store or introducing a speaker at a lecture). The interviewees were given leading questions which required them to carry forward most of the conversation. The three subjects were not tested for proficiency level, but were evaluated in terms of years of experience studying French and the interviewer's assessment. As part of the interview process, they performed written grammatical tasks related to verbal use (cf. Herschensohn & Arteaga, 2009), but did no tasks relating to nominal grammar. The interviews took place every three to four months and so were longitudinal in that they were sequential; the results showed, however, that the level of morphosyntactic accuracy did not change over the seven to nine month period. No notable change was observed over time and, for this reason, we have collapsed the results from the three interviews together. We next turn to our data collection and the results of our analysis of their suppliance of nominal morphosyntax.

Production data: determiners, gender, number assignment and agreement

This section reviews these learners' morphology and syntax in DP, examining their suppliance and choice of determiners and their productive use of gender and gender/number concord. The three subjects use a range of distinct nouns, numbered in the hundreds. Recall that the following points are important in the oral production distinctions of French DP from English: obligatory use of determiner; gender (on singular) and number (on plural) marked on determiner; gender marked on adjective (singular and plural); adjective usually placed postnominally.

For the first point, obligatory suppliance of determiners with nouns, we tallied tokens of lexical DPs (3059/3082 tokens over nine interviews) in which the determiner must be realized morphologically (see Appendix, Table A8.1); suppliance in obligatory contexts (SOC) is near ceiling and shows almost no variance across interviews. This table also summarizes the overall percentages of errors with respect to definite-indefinite features, again very low (85 errors out of 3082 tokens). The learners' errors include null determiners (10), definite for indefinite (11), indefinite for definite (12) and the DE rule (13) (cf. Appendix, Table A8.2). All of these error profiles involve abstract features ([def], [count]) that are identical in the two languages and presumably transfer; we note that they relate to dissimilar morphology between French and English.

- (10) a. *[null] *jus d'orange* = **du** *jus d'orange*
'some orange juice' (Max)
- b. *[null] *Lycée Roche-Maigre* = *Le Lycée Roche-Maigre*
'Roche-Maigre High School.' (Chloe)

One unexpected error, assuming abstract transfer, is misuse of definiteness and indefiniteness (11)–(12).

- (11) *Et j'ai préparé *le pain perdu avec *le sirop d'érable*
I have prepared the-M-SG-DEF bread-M lost with the-M-SG-DEF
syrup maple
= *du pain perdu avec du sirop d'érable*
'I made French toast with maple syrup.' [+def] for [-def] (Max)
- (12) *Il aime *du bon vin = le bon vin*
He likes some-M-SG-INDEF good wine
'He likes good wine.' [-def] for [+def] (Eleanor)

In example (11) the definite article *le* [+def] is used instead of the partitive *du* [-def]. Example (12) shows the use of the partitive indefinite where French needs the definite, as it is generic. Note that in both cases, the nouns would not be accompanied by an article in English. It appears that the morphological identity of mass (versus count) and generic English null determiner has led to a confusion of the two functions, which leads Max to choose the definite over the partitive and, conversely, leads Eleanor to choose partitive over generic. The subjects also fail to apply the rule of DE neutralization, by which indefinite (e.g. partitive) articles become *de* in negatives and quantification, as in the following:

- (13) a. *beaucoup* ***des** *ennuis* = *beaucoup d'ennuis*
lots of some-M-PL-INDEF worries
'lots of worries.' (Chloe)

- b. *pas* **du* *nettoyage*
 not some-M-SG-INDEF cleaning
 'not any cleaning.' (Eleanor)

Let us turn to number and gender features, which differ between French and English. With respect to number suppliance, an interpretable abstract feature shared by French and English, the learners show a high level of accuracy, 98% and above (see Appendix, Table A8.3). Recall that number is only audible in French where a determiner is present (e.g. *les, des*), or when a variable adjective (e.g. *social, sociaux*) occurs in DP, so we only considered DPs with a number marker that is pronounced. On the other hand, our learners' gender assignment is not as accurate as number, as Table 8.2 shows.

Table 8.2 presents a summary of the number of nouns used by speakers in all three interviews and the subset of DPs in which gender could be ascertained from oral context in the Variable gender column; SOC is broken out by feminine (F) and masculine (M). Although the three subjects provide insufficient data to consider statistical analysis, a simple comparison of Chloe's performance on feminine determiners and adjectives indicates that she is more error prone than Max and Eleanor for both D and A. Chloe's errors in supplying feminine determiners indicate that the errors tend to be unidirectional, since her suppliance of masculine is comparable to that of Max and Eleanor. The overall numbers for Chloe indicate an overuse of M for F, a trend that would fit with the unmarked character of the masculine. However, there are a few cases where she uses feminine for masculine, as in *la-F problème-M* 'the problem' or *une-F bon-M style-M* 'a good style'. For all three learners, their accuracy for DP gender is lower than their accuracy for DP number.

Mistakes in gender assignment are recognisable on the determiner, but there are three possible causes for the mistake. The learner may have incorrectly classified the gender specification for an item, in which case the noun is always paired with the incorrect determiner. Or the learner may be unsure of the gender, in which case s/he uses this item with both genders (and we do see cases of this random use in our recordings). Or the learner may know the correct gender but has difficulty with concord during real-time language use. Since we have no way of knowing which is the reason, we have included

Table 8.2 Gender assignment to determiner, three interviews

<i>Subject</i>	<i>Total</i>	<i>Variable gender</i>	<i>SOC F</i>	<i>% Ac</i>	<i>SOC M</i>	<i>% Ac</i>
Chloe	841	309	73/99	74	197/210	94
Max	1114	401	201/207	97	187/194	96
Eleanor	1127	396	176/188	94	197/208	95
Total	3082	1106	450/494	91	581/612	95

all the instances of determiner-noun gender mismatch. We use determiner accuracy as a diagnostic of gender assignment, whereas we look at adjectives in terms of concord/agreement.

Hence, we have considered adjective concord errors differently from determiner. Consider one of Chloe's errors, **du-M mauvais-M logique-F* 'some bad logic' (cf. correct *de la mauvaise logique*). She has incorrectly assigned to the feminine noun *logique* a masculine gender. This error is included in the determiner tally. However, since for Chloe, *logique* is masculine, we note that concord has not failed in this instance. In other words, Chloe has assigned gender (albeit the incorrect one) to the noun and has made the adjective and determiner agree with the assigned gender. All three subjects consistently assign a gender to nouns through D, although English has none, and they use no single underspecified or default gender (all masculine or all feminine; errors are both M for F and F for M).

In French, as we have seen, gender is also realized on variable adjectives (i.e. those which inflect orally for gender). Table 8.3 presents figures in the production data for adjectives that have overt morphological gender marking as well as adjective concord; these numbers include both attributive and predicative adjectives.

The total number of adjective phrases is given in the first column. The Variable gender column once again totals the number of instances in which there is audible morphological marking in the adjective phrase. The instances in which our learners fail to apply concord to feminine and masculine nouns (and the percentage of errors) are tallied in the next two columns. The adjective errors exceed the determiner error rates. Most of the adjectives used are postnominal, but generally for the learners there is no skewing of errors to prenominal adjectives.³ A notable exception includes several examples from Chloe's third interview: *le-M première-F semaine-F* 'the first week', *aucune-F problème-M* 'no problem', *aucune-F enseignement-M* 'no education', *toute-F un-M école-F* 'a whole school', *du-M mauvais-M logique-F* 'bad logic', *un-M assez forte-F histoire-F* 'a fairly strong story', *tout-M la-F journée-F* 'all day long'. These examples demonstrate a full range of mismatching of gender on D, A and N.

In summary, our three subjects supply determiners and make number agreement with very high accuracy. For over 3000 tokens of DP, they make 85 mistakes involving definite-indefinite, 18 mistakes involving number and

Table 8.3 Gender concord ADJ, three interviews

<i>Subject</i>	<i>Total AP</i>	<i>Variable gender</i>	<i>SOC F</i>	<i>% Ac</i>	<i>SOC M</i>	<i>% Ac</i>
Chloe	223	105	31/40	78	56/65	86
Max	316	151	48/51	94	100/100	100
Eleanor	217	124	37/43	86	73/81	90
Total	756	380	116/134	87	229/246	93

75 mistakes involving gender. The overall numbers indicate more errors for definiteness than gender, although gender is inaudible in two-thirds of the DPs. The learners assign gender to all nouns, but their gender assignment and adjective agreement are weaker than their number concord. As for the nominal syntax, although it is not the focus of the present paper, we note that word order is virtually perfect. We now turn to a discussion of the data in terms of the theoretical issues put forth in the first section.

Discussion

Given the minimalist framework we are assuming, Anglophone L2 learners of French need to gain interpretable gender on N, uninterpretable [*u*gender] on D and A, and the realignment of morphological realization of English and French D features. What do the present data tell us about transfer, realignment and parameter resetting, and what do they point to for L2 morphological deficits? We reconsider the questions posed in the first section:

- How effective is the parameter resetting model for SLA?
- How effective is the feature reassembly model for SLA?
- What is the nature of L2 morphological errors?

In this section, we first present specific examples and a discussion of our learners' errors. We then reconsider the issue of parameters, their L2 resetting, and the effectiveness of these models for SLA.

Parameter resetting

How well does the parameter resetting model describe SLA? In this section, we review the meaning of parameter in a minimalist framework and show that we do not need to discard the notion, as Lardiere (2009a, 2009b) suggests, but that we must reformulate L2 analyses, using it to reflect a model beyond that of principles and parameters. Parameters in the earlier paradigm, while thought of as characterizations of syntactic properties that differed systematically between two languages – null/overt subjects, head directionality, verb raising/non-raising – were not all comparable syntactically: null subjects related to licensing of *pro*, directionality to branching preference, and verb raising to theta opacity.

Research in the minimalist vein has not focused on parameters in the principles and parameters sense, but it is presupposed that 'minimalism assumes that a P & P architecture is a boundary condition on any adequate theory of grammar' (Hornstein *et al.*, 2005: 5). In the MP, uninterpretable features, which must be eliminated through agree, can establish a constituent relationship (e.g. within DP) or exist 'precisely to implement dislocation'

(Chomsky, 2002: 116). For the case at hand, English and French differ parametrically with respect to DP in terms of D features of gender and number that are grammatically active in French (requiring concord for determiners and adjectives, and noun raising, unlike English). The performance of our learners shows near-perfect overt determiner suppliance, number assignment and concord, as well as correct DP word order. Yet their data reveal mistakes regarding the gender concord of determiners and adjectives, especially in the feminine. The learners make far fewer errors regarding number and number concord. If we assume, as in the MP, that concord is a function of agree, we should expect equal deficits for all varieties of gender and number concord if DP parameters are or are not reset. Given the ceiling performance on DP word order and several aspects of concord, it could appear that our learners have revised the parametric settings from English to French, consistently assigning a gender and generally effecting concord with the D and A. Recall that English does have interpretable number (and arguably [*u*number] on D as *this/these*), but it does not have generalized number concord on D and A. A parameter resetting account cannot explain why our learners make residual gender errors but (virtually) no number/number concord errors, as **agree** is presumably the same operation in both cases. Similarly, under a non-resetting account, while the gender errors are explained by a critical period deficit, the near-perfect number concord on D and A demands explanation.

Similarly, neither a parameter resetting nor a non-resetting account can account for another error in our data, namely the use of definiteness features. Assuming the transfer of definiteness features, which are the same in French and English, we would expect accurate production of these grammatical features; however, this is not the case in our data. The definiteness errors are unexpected in terms of either parameter account.

Feature reassembly

Chloe, Max and Eleanor show a very high general level of accuracy with respect to DP morphology and syntax in spontaneous production. The fact that they are near ceiling on their accuracy, make consistent errors, and are able to use a broad range of nouns, determiners and adjectives, strongly suggests that they have mastered these aspects of nominal morphosyntax of French. The data certainly indicate that these learners have 'reset their parameters', gaining interpretable gender on nouns, [*u*gender] on determiners and adjectives, and the ability to apply the morphosyntactic rule of agree. Their most significant residual errors are on adjective concord, which is demonstrably worse than determiner concord, and is better on unmarked masculine than feminine. They also make mistakes on non-parametric aspects of determiner use, particularly the use of definiteness.

In contrast to gender and number concord, L1/L2 shared features – [def], [ct], [pl] – should presumably transfer, and the learners are indeed near ceiling

accuracy. Nevertheless, they make errors in definiteness, for which transfer cannot account. If we take into consideration L1/L2 differences in morphological realization, we see the applicability of both the reassembly approach (Lardiere) and the hindrance of dissimilar morphology: the feature inventory of L2 French D has, in addition to an abstract gender feature and concord requirements, a dissimilar morphological realization of generic and partitive DPs. Lardiere's feature reassembly argues that even the same features in L1 and L2 may show difficult realignment and this may result in collateral errors and L2 variability.

For the case at hand, we could expect the use of underspecified morphological forms (e.g. English [D] feature bundle for bare partitive as opposed to French [D, +/- ct, +/- F]), and discrepancies between gender and number. Under such a scenario, these L2 learners could have acquired [*gender*] on D and A, and make agreement, yet have persistent problems with the realization of correct morphology at spell-out. The fact that accuracy is higher for masculine than feminine appears to support the underspecification aspect of distributed morphology. We also see an increased error rate with long distance agreement in relative clauses and in adjective over determiner concord, characteristics already noted by other researchers (Dewaele & Véronique, 2000, 2001). Finally, there are morphological errors in the wrong use of [def] in L2. All three learners at times apparently draw on dissimilar morphology (despite identical abstract grammatical features) to generate errors with generics, indefinite partitives and quantified DPs. Apparently the lack of surface correspondence between English and French morphology and the double function of English null D (partitive and generic, realized as indefinite, definite, respectively in French) contribute to errors, despite the underlying identity of the abstract features. This last category of relatively rare errors is handily explained by Lardiere's reassembly hypothesis.

Morphological errors and processing

The morphological errors of definiteness and gender recall Newmeyer's (2005: 119) suggestion that: 'A theory of performance – in particular, that aspect of performance devoted to online processing – is well designed to handle this variation.' L1/L2 processing differences might also furnish a plausible explanation in that gendered L1 speakers use gender to facilitate the speed of lexical retrieval. L1 lack of gender has been shown to contribute to learner shortcomings in processing (Guillelmon & Grosjean, 2001; Sabourin *et al.*, 2006), thus contributing to performance errors (McDonald, 2006). This is one reason why adult L2 learners show slower reaction times and lower accuracy than native speakers (Clahsen & Felser, 2006c). However, the L1/L2 distinction is not categorical, as Foucart (2007) has found gradient differences between monolinguals and bilinguals using gender in lexical retrieval. Under these conditions, Chloe would presumably have a processing advantage

over the other two subjects whose age differences could be adversely affected by the rigidity of the processing strategies.⁴ Indeed, cognitive functions decline with increasing age during adulthood (Charlot & Feyereisen, 2004; Siyambalapitiya *et al.*, 2009), resulting in slower processing. During the interviews, Max and Eleanor often speak of their difficulty in understanding French movies and rapid discourse, whereas Chloe never mentions this. However, youth does not prove to be an advantage to Chloe for gender accuracy, which is well below that of Max and Eleanor.

Adult L2 learners already have experience of a first language that may have distinct processing patterns; in the case of English, concord is not a phenomenon that facilitates lexical retrieval within DP. While Guillemon and Grosjean's evidence points to a critical period distinction, that of Sabourin and Stowe (2008), Frenck-Mestre *et al.* (2009) and Sagarra and Herschensohn (2010, 2011) shows that additional factors such as other grammatical characteristics of L1, level of proficiency of the learner, or even individual differences in working memory, impact on the behavioural responses of L2 learners. In addition to the representational issues – the restructuring of features that differ between English and French, and the realignment of features that are the same into new configurations – the online realization of morphology also appears to be a factor in accounting for the mistakes of these learners.

Conclusion

Our examination of DP production of three advanced Anglophone learners of L2 French indicates that, although they make lexical and grammatical errors in other domains, they show an overall accuracy rate of 99% for determiner suppliance, 98% and above for number and 97% and above for number concord. Moreover, they consistently assign gender to nouns as indicated by their determiner choice.

In contrast to number assignment and concord, gender assignment and adjectival concord are inaccurate in varying degrees for the three subjects, who have persistent difficulties with the latter, especially with feminine forms. Our learners also make definiteness errors, showing errors in cases of dissimilar morphology between English and French. In sum, their high suppliance of determiners and number assignment/concord contrasts with their weaker gender assignment and concord and unexpected definiteness mistakes.

In considering the effectiveness of the parameter resetting and feature reassembly models, we find that both provide useful perspectives on our data. We have argued that our learners have acquired interpretable features of gender and number on nouns and uninterpretable number on determiners, where number concord is virtually perfect. We see clear examples of

dissimilar morphology errors and the use of underspecification in the realization of generic and partitive. The strong evidence of near-ceiling mastery of many aspects of DP morphosyntax point to acquired competence in new parametric values for D in L2 French, whereas the residual errors of gender and definiteness point to a number of factors including L1 influence, feature assembly, morphological underspecification and performance difficulties.

Notes

- (1) The following abbreviations are used in glosses: M = masculine; F = feminine; SG = singular; PL = plural; DEF = definite; CT = count; SPEC = specific.
- (2) This was pointed out by an anonymous reviewer.
- (3) This question was asked by an anonymous reviewer.
- (4) This point was suggested by an anonymous reviewer.

Appendix

Table A8.1 Suppliance of determiner, determiner accuracy, three interviews

<i>Subject</i>	<i>SOC</i>	<i>%</i>	<i>Errors</i>	<i>% Ac</i>
Chloe	839/841	100%	25/841/	97%
Max	1100/1114	99%	28/1114	98%
Eleanor	1120/1127	99%	32/1127	97%
Total	3059/3082	99%	85/3082	97%

Table A8.2 Distribution of determiner error types over three interviews

<i>Subject</i>	<i>Null D</i>	<i>% error</i>	<i>Def for indef</i>	<i>% error</i>	<i>Indef for def</i>	<i>% error</i>	<i>DE</i>	<i>% error</i>
Chloe	2/25	8%	8/25	32%	0/25	0%	14/25	56%
Max	14/28	50%	6/28	21%	3/28	11%	4/28	14%
Eleanor	7/32	22%	9/32	28%	6/32	19%	6/32	19%
Total	23/85	27%	23/85	27%	9/85	10%	11/85	13%

Table A8.3 Number assignment, three interviews

<i>Subject</i>	<i>Lexical DPs variable number</i>	<i>Number errors</i>	<i>Accuracy</i>
Max	855	4/855	99%
Chloe	562	10/562	98%
Eleanor	682	4/682	99%