

Feature-Assembly in Second Language Acquisition *

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1. Introduction

In this paper, I would like to revisit and, if possible, further refine the role of *parameter-resetting* in second language acquisition. I will argue that recent theories of parameter-resetting do little to help us account for variability in the production of morphological inflection, illustrating this argument with just a few of the types of learning problems confronting an adult native speaker of one (or more) language(s) who is learning the grammatical features of another. Instead, such learning involves figuring out how to reconfigure or remap features into new or different formal configurations in the L2 in ways that appear to go beyond the simple ‘switch-setting’ or ‘selection’ metaphors often used to characterize the differences between languages.

The role of parameter-resetting in acquiring a second language

Within a principles-and-parameters framework, parameters are hypothesized to constitute highly restrictive options, or points of variation of a theoretically relevant sort between languages, responsible for “certain complexes of properties typical of particular types of languages” (Chomsky, 1981: 6). Hawkins (2001) provides a succinct and elegant statement:

Principles define the structural architecture of human language. Variation between particular languages or varieties of language is accounted for by a small number of parameters of variation allowed within the overall design defined by the principles. (p. 13)

The idea that second language acquisition requires the resetting of “a small number of parameters” initially offered a principled and promising way to address the issue of L1 influence in L2A. For example, in an early discussion of the role contrastive linguistics—i.e., a comparison of the L1 and L2 language systems—should play in SLA research, Haegeman (1988) recast the earlier essence of contrastive analysis (minus its putative behavioristic trappings and concern with the transfer of linear surface patterns) in terms of UG-constrained parameter-resetting:

To go from the L1 to the L2, learners will often have to reset existing parameters or reassign values to them. Failure to do so will mean that the learner does not attain the L2. The latter possibility seems to be what negative transfer is about. (p. 255)

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In a general way, then, the failure of many adult language learners to reach nativelike proficiency could be descriptively modeled in terms of their failure or inability to reset one or more parameters from the L1 value to that of the L2.

Parameter-setting, however, has never coped very well with the issue of variability, which is often a persistent hallmark of second language development. (By ‘variability’, I mean here the variable omission, underspecification, overreliance on default forms, and/or apparent optionality vs. obligatoriness of the morphophonological expression of grammatical properties.) As van Kemenade & Nigel (1997) point out, since parameter settings are typically all-or-nothing phenomena, the resetting of a parameter should represent an “abrupt change” in a speaker’s I-language (p. 4).¹ The persistence of observed variability in the acquisition data is thus not predicted, insofar as the presence or absence of some grammatical property should be tied to the learner’s having set the plus or minus value of a particular parameter. On the other hand, the persistence of variability cannot necessarily be taken to mean that a parameter has not been set. In a commentary on the Haegeman paper cited above, Lust (1988) suggested that the deductive consequences associated with parameters involve “extensive ancillary learning of the periphery of language knowledge” including, for example, “phonological or lexical or language-specific agreement phenomena”; thus, parameter-setting is inextricably intertwined with learned language-specific knowledge (pp. 313–314).

Another way of stating this idea is that, while parameter-(re)setting may turn out to be a necessary mechanism for language acquisition (a claim that is well beyond the scope of this paper to investigate), it cannot be a sufficient one. This idea is old and uncontroversial—generative grammar has always maintained some sort of distinction between ‘core’ and ‘periphery’ with the latter held to require the inductive learning of language-idiosyncratic elements based on positive evidence from the environment. The respective contents of the core and the periphery, however, have been difficult to pin down, and have moreover shifted throughout developments in linguistic theory. The essential questions posed by Lust in the paper cited above, in fact, are still very much with us a full two decades later: “*which are the true parameters, what are the true deductive consequences of parameters, in what way can such components be said to ‘explain’ language acquisition?*” (1988, p. 323, italics in the original).²

It is now widely assumed that parametric variation is reducible to morphological properties of functional categories that drive syntactic derivation (e.g., Chomsky 1995: 222, 253). The presence or absence of inflectional morphology on lexical items, such as for person, number and gender agreement, case, tense, etc., that earlier might have been considered language-specific and thus “peripheral” (as in Lust 1988, cited above), have since been incorporated into syntactic

¹ This statement is made by van Kemenade & Nigel in the context of language change within a generative principles & parameters framework. Their point about parameter-resetting, in my view, is also relevant to language acquisition, especially second language acquisition, within this framework. They note that “it is not immediately obvious how the analysis of change as putatively abrupt can be reconciled with its surface graduality” (p. 4)—a problem that also confronts the generative acquisition researcher.

² The Haegeman (1988) and Lust (1988) papers were originally presented at a conference at MIT in 1985.

computations to trigger movement for feature-checking.³ Accordingly, parameter-resetting in SLA has been reconceptualized. In this paper I would like to address a recent and theoretically interesting instantiation of parameter-resetting-failure in SLA, known as the *representational deficit* approach (e.g. Hawkins 2000, 2003, Hawkins & Liszka 2003, Tsimpli 2003; see also Tsimpli & Roussou 1991 and Hawkins & Chan 1997 for earlier versions of this hypothesis). This approach attributes L2 inflectional variability or error to a failure in the selection of parameterized formal features. The theoretical point of departure is that of Chomsky's more recent Minimalist assumptions, as exemplified in the quote shown in [1] from Chomsky (2001):

[1]

*S*₀ determines the set {F} of properties ('features') available for languages. Each L makes a one-time *selection* of a subset [F] of {F} and a one-time *assembly* of elements of [F] as its lexicon LEX, which we can take to be a classical 'list of exceptions,' putting aside further issues. (Chomsky 2001, p. 4, emphasis added.)

According to the representational deficit approach, it is at the point of selection of particular features for the assembly of lexical items that languages vary. Parametric differences arise when languages make different selections among optional syntactic features (Hawkins & Liszka, 2003: 25). In the case of adult second language acquisition, parameterized formal features (perhaps restricted to uninterpretable ones) which are present in the L2 but not selected in the learner's L1 are hypothesized to be unacquirable, due to some sort of critical period effects.⁴ This sort of hypothesis has also been referred to in earlier work as the Failed Functional Features Hypothesis (FFFH) (Hawkins & Chan, 1997). In other words, the adult learner appears to be permanently 'stuck' with L1 parameter settings if these involve features (perhaps only uninterpretable features) that are not also selected by the L2.

Note that if we are to assume uniform interpretability across languages in the LF or SEM(antic) component (e.g., Chomsky 2001: 4), then the necessity for selecting new *interpretable* features in the L2 is not at all self-evident; presumably these will already be present in some way in the L1, and thus the FFFH/representational deficit approach would have little to say about them. Perhaps the uniform interpretability assumption is simply incorrect; for the moment, I remain agnostic on this possibility, but would simply point out that this assumption would seem to require that all languages include the same primitive semantic features and operators (so as to be uniformly interpretable at SEM), regardless of whether these are overtly spelled out or not.⁵

³ I am assuming here that only the abstract features associated with morphophonological reflexes are truly relevant for feature-checking computations, at least for second language acquisition. However, Chomsky (1995) assumes "at least a tendency for phi-features to be overtly manifested" in case of overt movement (p. 277), and others, e.g. Solà (1996) and Thráinsson (1996), explicitly require it. I will return to this issue later in the paper, especially in Section 4.

⁴ Cf. Chomsky (1998), who writes: "Operative complexity is reduced if L makes a one-time selection of a subset [F] of F, *dispensing with further access to F*" (p. 13, emphasis added). Of course, this selection is actually carried out not by 'L' (= a particular (E-)language) but rather by *acquirers* of L.

⁵ A reviewer asks me to further address the distinction between interpretable and uninterpretable features and its implications for SLA. Uninterpretable features are void of semantic content. Pesetsky & Torrego

As quoted above, moreover, Chomsky makes no apparent commitment to *how* such features (interpretable or uninterpretable) must be realized—whether in the form of bound or free grammatical morphemes or embedded within various lexemes. Yet how such features are idiosyncratically assembled and realized in each language, whether inflectionally or lexically, or even overtly realized or not, obviously plays a role in determining crosslinguistic variation and can pose a substantial and complex learning problem for second language learners. This learning problem is typically understated or underestimated by the ‘feature selection as parameter-setting’ metaphor. Therefore in this paper I’d like to focus not on the selection but rather on the *assembly* of elements of features in SLA, since accounting for morphological variability simply by appealing to the parametric (non-)selection of features is too simplistic. Instead I will try to show that the ways in which grammatical features are morphologically combined and conditioned may well affect their acquirability and overt realization in SLA. I’ll discuss a few specific examples of the kind of learning problems presented by the different ways in which primitive features are clustered in different languages (specifically, in the L1 vs. the L2), and will ultimately argue that there is a kind of *morphological competence* that must be acquired by the learner.

Morphological competence and feature-(re)assembly

What is meant here by morphological competence? I don’t have in mind performance issues, such as problems with lexical retrieval, automaticity, or online processing difficulties due to something like ‘cognitive overload’ or working memory constraints, although I certainly agree that these performance factors may well contribute to morphological error in production. These are likely to show up under different task conditions, and are set aside in this paper. Morphological competence includes, most obviously, the knowledge of precisely which forms ‘go with’ which features. But consider the additional kinds of knowledge that are also required:

(2001) go so far as to suggest that the most “minimalist” possible conception of language would admit nothing but *interpretable* features, i.e. nothing but pairs of sounds and meanings. Under a weaker version of this view, which they dub “relativized extreme functionalism” (p. 364), all grammatical features would have a semantic value, but perhaps not the chance to express that value in every context in which they occur (as in, for example, the possibility of there being semantically active T-features on DP, which, while unexpressed in many languages, are nonetheless overtly realized in some, as in the Somali examples to be presented below in this paper).

Their proposal is further explored in Pesetsky & Torrego (2004), where what we might refer to as a ‘typology of interpretability’ is presented, such that the features of a lexical item L are generally taken to belong to any of the following three types: (a) features that have a semantic value on L (*interpretable features of L*); (b) features that have a semantic value on some other lexical item L’, but have no value on L (*uninterpretable instances of interpretable features*); and (c) features that have no semantic value on any lexical item, including L (*purely formal uninterpretable features of L*). Pesetsky & Torrego explore the hypothesis that the third category (c) “does not exist at all—in other words, that *all* grammatical features have some potential semantic value” (p. 496, italics in original). If they turn out to be correct, then a parameter-resetting model based on the (in)ability to select (un)interpretable features will need to be rethought. Concerning the latter, it appears the acquisition problem would shift to learners’ figuring out when category (b) applies, which appears to boil down to the acquisition of agreement (in the minimalist sense). This is not to suggest that the magnitude of the difficulty learners face is thus lessened.

What are the conditioning factors and are these phonological, morphosyntactic, semantic or discourse-linked? Are certain forms optional or obligatory, and what constitutes an obligatory context? In which domains are various features expressed, clustered in combination with what other features?

To give an example of a learning problem posed by the language-specific assembly of features, consider the data in [2]. Hale (1996), in a commentary on a paper by Epstein, Flynn & Martohardjono (1996), provides examples of “wondrous and outrageous” yet “learnable and attested systems” of number-marking (p. 729). The Epstein et al. paper was concerned with the role of UG in constraining so-called rogue or wild grammars in second language acquisition. Hale’s point was that learners are also guided by what’s in the input and that nothing in UG precludes or is inconsistent with the possibility of “outrageous” systems such as the following:

- [2] a. Add the suffix *-sh* to animate nouns to form the dual and plural, add the same suffix to inanimates to form the singular and dual. [Jemez (Kiowa-Tanoan)]
- b. In cardinality DPs, with numerals from 3 through 10, use the feminine [gender] for a masculine noun, and vice versa, and use the plural form of the noun; with numerals from 11 through 19, use the singular accusative for the noun, and for the teen subpart of the numeral use masculine for a masculine noun and feminine for a feminine [noun], and for the unit part of the numeral use feminine for a masculine [noun] and vice versa. [(Modern Standard) Arabic]⁶

We might say that both these languages ‘parametrically select’ the feature [\pm number] or [\pm plural], but this fact hardly eases the pain for a speaker of another language, say, English, whose language also selects [\pm plural], who is trying to learn how to mark number in either Jemez or Arabic; moreover, it is not clear how to restrict the set of parameters to define these particular parameter values, and even if we could, the explanatory value of having parameters like this would then surely be compromised because the term would simply mean something like ‘any idiosyncratic difference’ one finds between languages. It is not an exaggeration to suggest that we might need thousands of ersatz ‘parameters’ to account descriptively for all the differences between all languages at this level of language-specificity, and thus the earlier restrictiveness of having “a small number of parameters”—desirable from a learnability standpoint—would go out the window.⁷

⁶ I am grateful to Douglas Dee, Stefan Dienst, Thomas Hanke and Martha McGinnis for the information and references they provided about these languages in response to my Linguist List query, as the languages fitting these descriptions were not identified by Hale in his 1996 paper. Particularly helpful references pointed out to me were Corbett (2000:159–166), Hetzron (1997:154) and Mithun (1999:81).

⁷ This point is discussed at some length in Lightfoot (1997), who observes that the existence of only 32 binary parameters would generate 8–9 billion grammars, and thus “provide more than enough scope to account for the range of variation that one finds among human languages.” Nonetheless, restricting the number of parameters to 30–40, he writes,

does not allow much scope for analysis; they would need to be more general, more simple and very different from what one sees in the literature—sometimes a single issue of *Linguistic Inquiry* contains 30–40 proposed parameters. Some linguists have come to equate parameters with superficial

To give another example, we can say that English, Irish, and Somali all ‘select’ a grammaticalized formal feature that we label [+past] (however its actual spell-out is realized), but it does not encode a unitary interpretable feature, nor is it restricted to a particular domain. In English, in addition to what we normally think of as ‘past’ (e.g. event or state situated in time before the moment of speech), the same formal feature also appears to encode perfective aspect in events [3a] and irrealis mood in conditionals [3b]; it appears more or less optionally and semantically “inactively” in so-called ‘sequence of tense’ constructions on stative verbs in subordinate clauses (Kuhn & Portner, 2002: 37) [3c], and it is *not* obligatorily expressed in so-called ‘historical present’ contexts [3d], making its obligatory contexts in actual discourse quite difficult to formulate. In Irish [+past] shows up on complementizers in the CP in agreement with past tense of the embedded clause [4] (McCloskey, 1979). And in Somali, DPs contain the same tense morphemes as the sentence: [+past] is expressed on determiners and adjectives in nominal DPs, where it indicates not only ‘past time’ agreement [5a], but also temporal habitualness [5b], evidentiality (whether the nominal referent is evidently visible or not to the speaker) [5c], or alienable possession in predicative genitive constructions [5d] (Lecarme, 2003, 2004).

[3] English

- a. The cow *jumped* over the moon.
- b. If I only *had* a brain...
- c. Roger said that he *disagreed* with her analysis.
- d. So we *asked* some guy to come over and help us. So he *opens* the car and everyone *gets* out... (narrative data reported in Schiffrin, 1981).

[4] Irish (data from McCloskey, 1979)

Deir sé *gurL* thuig sé an scéal
 says he that *past* understood he the story
 ‘He says that he understood the story.’

[5] Somali (data from Lecarme, 2003, 2004)

- a. árday-*gii* hore
 student-detM. *past* before
 ‘the former student’

‘differences’ among languages. This runs the risk of allowing parameters to proliferate and run out of control, and in fact parameters have become more and more fine-grained, each one capturing smaller ranges of phenomena. (p. 254)

However, this ‘atomization’ of parameters appears nearly unavoidable given the following description of parameter-setting by Chomsky (1998): “On these (conventional) assumptions, acquiring a language involves at least selection of the features [F], construction of lexical items LEX, and refinement of C_{HL} in one of the possible ways—parameter setting” (p. 13).

- b. (Weligay) *dúhur-kii* *baan wax cunaa*
 (always) noon-detM.past F.1S thing eat.pres
 ‘I (always) eat at noon.’
- c. *Inán-tii* *hálkée* *bay joogta?*
 girl-detF.past place-detM.Q F.3S stay.F.pres
 ‘Where is the girl?’
- d. *Búug-gani* *waa búug-gíi* *Maryan*
 book-detM.dem Foc book-detM.past Maryan
 ‘This book is Maryan’s book.’

Here again, it is obvious that what constitutes the formal feature ‘past’—in other words, how it is ‘assembled’ and the conditions on its expression—in one language may be quite different from what constitutes it in another. Analyzing these languages simply in terms of their parametric *selection* of a feature [+past] would be obviously inadequate (assuming we’ve even characterized the feature itself correctly; see, e.g., Iatridou, 2000; W. Klein, 2000; Ludlow, 1999; Ogihara, 2004; Pesetsky & Torrego, 2001; Zhang, 2000, among others; for additional discussion with respect to SLA, see Lardiere, 2003). Rather, the contexts in which it can or cannot or must appear and restrictions on its use must all be painstakingly acquired and are part of the learner’s developing morphological competence. Within the representational deficit approach, since both English and Somali select the formal feature [+past], a native English speaker acquiring Somali would presumably have no need to ‘reset’ this parameter. Even if there were two distinct ‘selection events’ for [past] feature-selection in Somali (one for clauses and one for nominal phrases) such that a native English speaker still needed to parametrically select the nominal [past] feature, it is clear that acquiring the obligatory or optional conditions and restrictions on its overt expression would be quite a formidable learning task. Thus, parameter-resetting in the feature-selection sense might be necessary for successful acquisition but would clearly not be anywhere near sufficient.⁸

A case-study in feature-reassembly: some L2 data

In the remainder of the paper, I would like to provide a few L2 acquisition examples to illustrate how the feature-reassembly approach illuminates the nature of the learning problems facing the acquirer of a second language beyond that of a feature-selection approach. The data are taken from an ongoing case-study data of Patty, a native speaker of Mandarin and Hokkien Chinese who was born in Indonesia (living with her family among the expatriate Chinese

⁸ A reviewer points out that T has more values than [±past]. For additional discussion of this point, see Guéron & Lecarme (2004), who observe that, although “tense is a morpheme in the Tense (T) node,” we never really ‘see’ it in isolation: the present tense is consistently morphologically null, the future tense usually occurs as a modal or mood morpheme, and in many languages past tense is so tightly merged with aspect that it’s not possible to distinguish one from the other (p. 1). In the meantime, my use of [past] here to the exclusion of other possible tense values is intended merely to illustrate just a few of the learning difficulties faced by learners in developing morphological competence concerning how this complex feature is realized in different languages.

community), moved to China as an adolescent and then to Hong Kong to complete high school, and acquired most of her English as an adult immigrant to the United States. Data collection was begun after Patty had already been living in the U.S. for about 10 years. The data are based primarily on the first three of four audiotaped recordings and approximately 25 written (mostly e-mail) samples collected over a period of time now extending to about 16 years. The stretch of time between the first and second recordings was about 8.5 years, and the third was made about two months later than the second, or after she'd been living in the U.S. for over 18 years. Thus, the data reflect the endstate grammar of a mature second language acquirer, and may provide a window onto facets of ultimate attainment related to the ability to (eventually) succeed or not in the reassembly of features in the lexical items of the target language and the nature of the remapping problem facing a native Chinese speaker acquiring English.⁹

⁹ Here and throughout I refer to Patty as a native 'Chinese' speaker. As a reviewer rightly observes, Mandarin and Hokkien are indeed distinct Chinese languages. For the features and operations described in this paper—particularly for definiteness, number, and *wh*-movement—I have relied primarily on sources and examples concerning Mandarin. I have been unable to locate generative accounts related to these features for Hokkien, and have instead relied on purely descriptive data from informants and limited pedagogical materials.

Cheng & Sybesma (1999) point out a difference between Mandarin and Cantonese with respect to the interpretation of definiteness: “in Mandarin, only bare nouns can be definite and in Cantonese only [Cl+N] [= Classifier + Noun] phrases can” (p. 512). (Nouns in preverbal position cannot be indefinite in either language.) Examples are shown below (from Cheng & Sybesma 1999: 510–511):

- i. Gou jintian tebie tinghua [Mandarin, p. 510, ex. (2b)]
 dog today very obedient
 ‘The dog/dogs was/were very obedient today’
- ii. Zek gau gamjat dakbit tengwaa [Cantonese, p. 511, ex. (4b)]
 CL dog today special obedient
 ‘The dog is especially obedient today.’

Hokkien appears to pattern like Mandarin rather than Cantonese in this respect; namely, in that bare nouns can be interpreted as definite:

- iii. Haksieng bou thakche? [Hokkien, Bodman (1987: 132)]
 student not study
 ‘The students don’t study.’

Thus, it appears that Mandarin and Hokkien are similar in the relevant respects regarding the interpretation of definiteness. However, I should point out that Patty is also fluent in Cantonese—a language she acquired while attending high school in Hong Kong. Of course, all three of these Chinese languages—Mandarin, Hokkien and Cantonese—differ from English in that the latter requires the use of a definite article to indicate definiteness.

With respect to *wh*-movement, both Mandarin and Hokkien (as well as Cantonese) are *wh*-in-situ languages and again appear to pattern similarly in relevant respects for purposes of this paper (as shown, for example, in [27c] in Section 3), though differently from English.

Regarding Indonesian, which Patty learned when she began elementary school (as a member of the Chinese expatriate community in Indonesia), I follow Martohardjono & Gair (1993:86), who argue that there is no *wh*-movement involved in *wh*-question formation in Indonesian, e.g.:

- iv. Siti makan apa?
 Siti eat what
 ‘What did Siti eat?’

Section 2 will look at the acquisition of aspects of definiteness and number, Section 3 at *wh*-movement and relative clauses, and Section 4 at subject-raising and case-marking.¹⁰ In the final section, I tentatively explore a possible way forward toward descriptively modeling the mapping problem faced by second language learners in acquiring morphological competence.

2. Definiteness and number

First, let us consider the status of the feature [\pm definite] in Chinese. (I will show how it is related to number-marking directly below.) Leung (2001), following Cheng & Sybesma (1999), argues that this feature is absent in Chinese, that its presence vs. absence in a language constitutes parametric variation and that parameter-resetting involving this feature ‘fails’ in L2 acquisition, along the lines of the FFFH. I doubt this claim (and if we assume uniform interpretability and consider definiteness to be an interpretable feature then it may necessarily be present in all languages, as mentioned above), although I follow an alternate analysis of Chinese DPs with rather different theoretical assumptions, that of Aoun & Li (2003), which I return to below.

In certain cases that might suggest that *wh*-movement has occurred, the verb must be passivized, rendering a questioned object as a subject that Martohardjono & Gair argue is base-generated:

- v. Apa (yang) dimakan Siti?
What (COMP) PASS-eat Siti
‘What was eaten by Siti?’

Again, question-formation in Indonesian clearly differs from *wh*-movement in English.

Patty permanently left Indonesia at age 14 to live in China and was not exposed to Indonesian again; she herself estimates that her Indonesian has undergone considerable attrition, as she has always spoken either Mandarin, Hokkien or (since high school) Cantonese with her family and friends and in her community prior to her arrival in the United States, and English in addition thereafter.

The same reviewer wonders whether Patty is literate in Chinese, and whether spoken vs. writing differences that occur in Mandarin gender-marking (i.e. there are no gender distinctions on third-person pronouns in the spoken language, although there are in writing) carry over to other features discussed in this paper. To my knowledge, this is not the case. (It is interesting to note, though, that Patty is indeed literate in Chinese, and that while gender ‘confusion’ (i.e. substitution) is a frequent error in her spoken English, there is apparently no such confusion in her written English.)

Finally, the same reviewer makes the interesting (and accurate) point that we don’t really know how the grammatical features discussed in this paper are *actually* represented in Patty’s mental grammar(s) of her various languages. Strictly speaking, this is true for every speaker of a language, including native speakers. Patty’s native-language situation is obviously complex. I am indeed assuming here that the particular linguistic knowledge ascribed to native Mandarin Chinese speakers also holds true in her case, although it may not be the only source of prior-language knowledge possibly affecting the outcome of her acquisition of English. Since my use of her data in this paper is primarily meant to illustrate how a feature-reassembly model might be applied, rather than a claim *per se* about exactly what’s in her head regarding her native language(s), I hope readers will indulge my use of her data for this purpose.

¹⁰ Much of the data presented in Sections 2 and 3 are taken from Lardiere (2006), where they are analyzed and discussed in greater detail.

It should also be pointed out that it is conventionally assumed that Chinese does not have either definite or indefinite articles. There is, however, a quantifier *yi-* ('one') that, when unstressed, appears to be in the process of becoming grammaticalized and "beginning to take on some of the functions" of the indefinite article (according to Li & Thompson 1981:132; see also Aoun & Li 2003:141, 152). Chinese also has demonstrative determiners *nei-* or *na-* ('that') and *zhei-* ('this'); *nei-/na-* is likewise claimed by Li & Thompson to be taking on some of the functions of the definite article in English. Some examples (from Aoun & Li, 2003) are shown in [6].

- [6] ta shi *yi-ge* mishu jian daziyuan (Aoun & Li 2003, p. 141)
 he is one-CL secretary and typist
 'He is a secretary and typist.'
- ta kan-guo de (*na-ben*) shu (Aoun & Li 2003, p. 152)
 he read-ASP DE that-CL book
 'the book that he has read'

Robertson (2000) investigated the acquisition of English article usage by native Chinese speakers and found that, in fact, the Chinese speakers in his study did exhibit a tendency in existential sentences to produce *one* where a native English speaker would be likely to produce the indefinite article *a* (p. 167). Robertson also noted a tendency for the Chinese speakers in his study to use demonstratives *this*, *that*, *these* and *those* in contexts where a native English speaker would use a definite article (p. 167). If this is true, then note that the acquisition problem is even further complicated by an additional layer of 're-mapping' problem, in which Chinese speakers must further learn how to differentiate the forms *one* and *that* in English from the articles *a* and *the*. (For some of Robertson's informants, it appears this differentiation may have not yet been made.)

Let's now turn to Patty's definite and indefinite article production for both spoken and written (e-mail) obligatory contexts. Definite article use is shown in Table 1, indefinite in Table 2. Some sample data are provided in [7] through [10].

Table 1. Patty's % definite article suppliance in obligatory contexts. (Lardiere 2004, 2006)

DEF article	Recording 1	Recording 2	Recording 3	Written	Total
Correctly Supplied	84.93 (62/73)	78.45 (91/116)	83.33 (50/60)	90.29 (93/103)	84.09 (296/352)
Omitted	15.07 (11/73)	19.83 (23/116)	16.67 (10/60)	06.80 (7/103)	14.49 (51/352)
Wrong form	00.00 (0/73)	01.72 (2/116)	00.00 (0/60)	02.91 (3/103)	01.42 (5/352)

Table 2. Patty's % indefinite article suppliance in obligatory contexts. (Lardiere 2004, 2006)

INDEF article	Recording 1	Recording 2	Recording 3	Written	Total
Correctly Supplied	63.16 (12/19)	76.47 (104/136)	77.19 (44/57)	74.71 (65/87)	75.50 (225/298)
Omitted	26.31 (5/19)	19.12 (26/136)	17.54 (10/57)	22.99 (20/87)	20.13 (60/298)
Wrong form	10.53 (2/19)	04.41 (6/136)	05.26 (3/57)	02.30 (2/87)	04.36 (13/298)

[7] Definite article supplied: *they born the same year*
she got stuck on the first piece
they have four time in the bible
because the other sister got marry

[8] Definite article omitted: *we all Ø same size, you know?*
but Ø first year is really a struggle for me
this kind of appear four time in Ø bible
he came to Ø United State two years before me

[9] Indefinite article supplied: *and my # my father's not a good writer*
well maybe at that time mix in a little bit English
do you guys have a bike?
it's a gift

[10] Indefinite article omitted: *and he is Ø much better Chinese writer*
so I learn Ø little bit um, Vietnamese
each of you have Ø bike?
isn't it Ø generous gift?

The data show that Patty's overall rate of suppliance of articles, though variable and non-nativelike, is nonetheless quite high. Definite articles are supplied at about a rate of 84% and indefinite at about 75.5%. Consistent with what has been widely reported in the English L2 literature, Patty is also significantly more accurate on definite than on indefinite articles ($\chi^2 = 7.9$, $p < .01$). Unlike Robertson's data, we find no tendency for Patty to substitute demonstratives for definite determiners nor *one* for indefinite determiners: there are no examples of the former and only one instance (out of 298 contexts = near-zero percent) of the latter; that lone exception is shown in [11]:

[11] *they have **one** last name was so long, some of them*
 [interpreted in context to mean something like 'some of their last names were so long' or 'some of them had such long last names']

Instead, demonstratives are used perfectly appropriately and *one* is used numerically, as shown in the examples in [12].

[12] *S. and J. visited us this past weekend
only that college accepted me
we lost over 6,000 people in one day
I read one or two books now a year in Chinese*

We also find that articles are used in context appropriately, for example the use of the indefinite to introduce a referent into the discourse and then subsequent use of the definite to refer to the same noun, as illustrated in the examples in [13]:

[13] *I remember my dance company have **a** party ... so I invite A. to # to **the** party
I know D.'s gonna have **a** show ... well she's so busy on **the** show
we have **a** maid ... **the** maid uh, pick up a lot of Hokkien from us*

Let us turn now specifically to the feature of definiteness. In English we assume that, in addition to the definite article, possessive determiners and demonstratives are also definite. Patty produces these perfectly, with the exception that she occasionally confuses the 3sg masculine and feminine forms *his* and *her*. Some possessive determiners are shown in [14].

[14] *her sister and my cousin are friends
but they also spoke Vietnamese in their household
I really like your friends
our kitchen is almost finish*

In addition, we can test for definiteness effect violations, following White (2003) (see also Lyons, 1999). In English, definite DPs are prohibited from existential contexts following *there*, as shown in [15].

[15] There is a unicorn in the garden.
*There is the unicorn in the garden.

We predict, then that if Patty has acquired knowledge of the feature [\pm definite] in English, then she should observe the requirement that the DP in an existential *there* construction must not be definite. This in fact is what we do find. There are 37 contexts for existential *there* constructions, and no definite articles were produced in any of them, despite the fact that Patty tends to overuse definite more than indefinite articles overall.¹¹ Some examples are provided in [16]:

[16] *there were some changes in my life recently
there is a signal to show you who are on line
there was a breakdown in the agency*

¹¹ A reviewer points out that the data do not allow us to definitively conclude that definite DPs in existential contexts are prohibited in Patty's L2 English. This is true, without the addition of some sort of grammaticality judgment task. The most that can be claimed here is that the production data completely conform without exception to the theoretical prediction.

In sum, Patty appears to have acquired knowledge of definiteness in English even though her use of definite articles is not perfect. This suggests that it is indeed possible to acquire this feature, contrary to Leung’s claim. Why is Patty better on definite determiners than indefinite determiners? For one thing, definite articles in English need not take number and the count/mass distinction into account, which makes their conditioning environment less featurally complex than that of indefinites. But let us look more closely now at the feature number, or more specifically, [+plural], to see how, for a native Chinese speaker, the features definiteness and number must be disentangled and reassembled in English.

Although Chinese presumably lacks a definite article, it does appear to have definiteness. More precisely, nouns may receive a definite (or indefinite) interpretation by virtue not only of their discourse/pragmatic context (as Leung notes), but also by pre- or post-verbal sentence position, co-occurrence with classifiers or other grammatical elements such as possessive or demonstrative determiners, and, apparently, *plurality*—another feature which Chinese is often claimed to lack. Here I return to Aoun & Li’s analysis of the Chinese DP. Aoun & Li argue that the Chinese nominal plural/collective marker *-men*, which is highly restricted in its usage, is the realization of a number feature occupying the head position of a Number projection, assuming the structure shown in [17].

[17] Aoun & Li (2003): Chinese plural/collective marker *-men* realizes a number feature in Num⁰:



If the classifier position is empty, a noun can be raised to Number, checking the plural feature of *-men*, and then further raised to D to check the definite feature there; crucially, nouns suffixed with *-men* **must** be interpreted as definite, as shown in [18].

[18] ta hui dai *xuesheng-men* hui jia
 he will bring student-PL back home
 ‘He will bring *the* students back home.’
 *‘He will bring (some) students back home.’

The example below in [19] shows that a noun can still move up to Number when D is occupied, say, by a demonstrative, and the classifier position is empty.

[19] laoshi dui *zhexie/naxie xuesheng-men* tebie hao
 teacher to these/those student-PL especially good
 ‘The teacher is especially nice to these/those students.’

However, if the classifier position is filled, it blocks the raising of a noun to Number, so the noun cannot be pluralized with *-men*, as shown in [20]:

[20] *laoshi dui (zhe/na) ji-ge xuesheng-men tebie hao
 teacher to these/those several-CL student-PL especially good
 ‘The teacher is especially nice to those several students.’

Precisely because nouns suffixed with *-men* must be definite, their existence cannot be posited in existential constructions, which would create a definiteness effect violation, nor can these be negated, as shown in [21] and [22]:

[21] *you ren-men cf. you ren
 have person-PL have person
 ‘there are some persons’ ‘there is/are some person(s)’

[22] *mei you ren-men cf. mei you ren
 not have person-PL not have person
 ‘there is nobody’ ‘there is nobody’

The learning problem confronting a Chinese speaker acquiring English, then, involves teasing apart the relevant features from the way they are assembled in the L1, and re-assembling them as required by the L2. Concretely, this means *de-linking* definiteness from plural number-marking. The examples in [23] suggest that Patty has managed to accomplish this. Here we find plural-marked *indefinite* nouns in existential constructions, such as those in [21] above, as well as plurals on indefinite nouns that refer to humans (a semantic restriction on overtly plural-marked with *-men* in Chinese), which would be prohibited in Chinese:

[23] *there were some changes in my life recently*
there are so many lessons to learn in your lifetime
they [sic] are so many things I want to do
some Americans spoke # speak very very well
I think four adults will be too many
my good fortune to have good friends
women are more sensitive than men in many ways

Nonetheless, we do find what appear to be lingering transfer effects in that there is a significant increase between the first and subsequent recordings on her plural marking in quantified contexts. These are the most clearly unambiguous obligatory contexts for plural marking in English, since plural marking on the noun is required to ‘agree’ with the semantic plurality of the quantifier, such as in ‘six students’ or ‘several students’ or ‘both students’. However, in Chinese, these are exactly the contexts that *cannot* occur with plural marking on the noun. Table 3 shows that plural marking was rarely supplied in these contexts in Patty’s first recording, then subsequently jumped in the second and third (there is about an 8-year gap between the first and second recordings):

Table 3. Plural marking in obligatory quantified expressions (Lardiere 2004, 2006)

	Suppliance/contexts	%
Recording 1	2 / 23	08.70
2	24 / 51	47.06
3	14 / 24	58.33

[24] and [25] provide examples of Patty’s plural marking and omission of plural.

[24] Plural marking supplied: *everyday for the next five days*
we spoke two languages in our household
for all the human beings in the world

[25] Plural marking omitted: *I borrow a lot of book from her*
I hear it so many time
I have two cousin

In sum, if Aoun & Li’s analysis is correct, then both English and Chinese appear to select the category Number and the formal feature [+plural]; however, in Chinese, the feature [+plural] is formally realized very differently than in English. Nouns may receive a plural interpretation apparently similar to that in English when they co-occur with a quantifier (other than ‘one’) and a classifier, but without overt plural marking on the noun (e.g. *san-ge xuesheng* = three-CL student = ‘three students’). In English, on the other hand, similarly quantified nouns obligatorily require plural marking. Chinese has a plural suffix (-*men*), but its use is highly restricted (e.g., to nouns that denote types of humans), apparently optional, and requires a definite interpretation. In English, nouns bearing overt plural marking can be either definite or indefinite and marking is obligatory. This description is in fact oversimplified (e.g., I’ve glossed over the count/mass distinction which is almost surely highly relevant), but the overall main point, I hope, is clear: the acquisition of definiteness and plural marking is not a matter of mere parameter-resetting from a ‘minus’ value in Chinese to a ‘plus’ value in English for either feature. Rather, it involves a more complex process of developing morphological competence—the reassembling the relevant features from the way they are conditioned and realized in the L1 to that of the L2.¹²

¹² A reviewer writes: “I think in Patty’s case, it is simply a matter of learning to map the plurality with “-s” in her L2 English, and this does not necessarily involve dis-assembling in her L1 and re-assembling in her L2.” If I understand the comment correctly, its main point is to call into question any necessary role here for L1 influence in Patty’s (or any native Chinese speaker’s?) L2 acquisition of English plural marking. This is certainly possible, depending on one’s view of L1 influence in SLA (e.g. whether there is any, and at which stages of development). With regard to L1 influence, under the representational deficit view, the acquisition of features such as [+plural] is completely and permanently constrained by the L1, namely by whether the feature in question has been parametrically selected or not by the L1. The approach I’m exploring here attempts to model the role of L1 influence more precisely than the description afforded us by current models of parameter-resetting (or the failure thereof). In the meantime, if matters were simple, one might wonder why Patty exhibits so much variability in her production of overt plural marking in English. One possible answer (in addition to vaguely defined performance factors) is that she doesn’t realize it’s obligatory rather than optional for nouns in plural-quantified contexts—part of her English morphological competence that may well be influenced by her knowledge of overt plural marking in Chinese.

3. *Wh*-movement

Let us turn next to some of the learning problems that are associated with the acquisition of questions and relative clauses in English by a native Chinese speaker.

In English, *yes/no* questions exhibit subject-aux inversion, or I-to-C movement, as shown in [26a]; in *wh*-questions there is additionally clause-initial fronting of the *wh*-element, that is, movement into Spec of C, inserting ‘dummy’-*do* if necessary, as shown in [26b–c].

- [26] a. [_C Are_i [_{IP} the students [_I *t_i* [_{VP} going to the picnic?]]]]
b. [_{CP} What_j [_C are_i [_{IP} the students [_I *t_i* [_{VP} bringing *t_j* to the picnic?]]]]]]
c. [_{CP} What_j [_C do_i [_{IP} the students [_I *t_i* [_{VP} plan to bring *t_j* to the picnic?]]]]]]

In Chinese, on the other hand, there is no I-to-C movement: *yes/no* questions are formed using question particles (e.g. *ma*) as in [27a];¹³ and *wh*-expressions are not fronted in the overt syntax but instead remain *in situ*, as shown in [27b–c] (Mandarin examples from Li & Thompson, 1981; Hokkien from Bodman, 1987).

- [27] a. ni xihuan neiben shu ma ? (Mandarin)
you like that-CL book Q
‘Do you like that book?’
b. women jintian wanshang chi shenme? (Mandarin)
we today evening eat what
‘What are we having for supper tonight?’
c. ni qu nar ? (Mandarin)
li khi toulou? ? (Hokkien)
you go where
‘Where are you going?’

The difference between question formation in English and Chinese illustrated here has been accounted for formally by positing the presence of a strong vs. weak, or alternatively, the presence vs. absence, of a [+wh] or [Q] feature in C. In English, this interrogative feature induces movement of the *wh*-expression into the CP to check the *wh*/Q feature in C (Chomsky 1995; Freidin 1999). In Chinese, however, this interrogative feature is weak (or absent); thus, no overt raising occurs. Once again, this distinction has been cast in terms of different parameter settings. I will try to show, however, that the situation appear to be a little more complex. I will first briefly present examples from Patty’s English production data suggesting that she has acquired the English feature-value, before turning to *wh*-movement in relative clauses.

¹³ There is another way of forming *yes/no* questions in Chinese, the so-called *A-not-A* construction, which will not be discussed here. The choice of ‘A-not-A’ vs. question particle constructions is claimed to be governed by pragmatic factors (see Li & Thompson, 1981: 548ff. for extensive discussion).

Given Patty’s massive exposure to English for so long, we should not be surprised that she easily produces so-called ‘Stage 6’ questions, which are the most advanced type within the developmental scale described by Pienemann, Johnston & Brindley (1988) (adapted and cited in Lightbown & Spada 1993: 63). At ‘Stage 6’ the learner produces embedded questions with correct subject-auxiliary word order, as well as correct formulation of tag questions and negated questions. Acquiring these entails the prior acquisition of subject-auxiliary inversion of *do* and other auxiliaries in *yes/no* and *wh*-questions, which Patty has certainly acquired. Some examples from Patty’s data are provided in [28]:

- [28] *didn’t he know that it will get back to me?*
I don’t know how long we are going to wait
I tried to analysis what kind of a person M. is
It’s funny that you always late when the place you want to go is so close, isn’t it?

We can even find an instance of an exclamative utterance in the data with correct subject-auxiliary inversion:

- [29] *not in a million year would I stop going to high school*

Overall, the data suggest that Patty has indeed acquired I-to-C movement of the copula, modals, auxiliaries and expletive *do*, implicating the presence of a strong feature in C that triggers the overt movement, presumably on the basis of positive evidence such as the presence of *do*-support.

One possible account for Patty’s success in this domain is that her acquisition of the strong English *wh* or Q feature is tied to her acquisition of the lexical differentiation in English between *wh*-question words such as *who* or *what* and quantifier expressions such as *anything* or *everything*, which may be conflated in Chinese—another bit of delinking and reassembly of features that must be learned. The examples in [30] from Huang (1995, p. 171, his examples (170–172a) illustrate this point:

- [30] a. ni xiang mai shenme (ne)?
 you want buy what Q
 ‘What do you want to buy?’
 b. wo bu xiang mai shenme
 I not want buy anything
 ‘I don’t want to buy anything’
 c. wo shenme dou mai
 I everything all buy
 ‘I will buy everything’

Huang ties *wh*-in-situ in Chinese to the possibility that *wh*-phrases are assigned the features of an interrogative, existential or universal quantifier and must be interpreted within the domain of an appropriate binder (e.g. as an interrogative quantifier in the presence of a question operator

in [30a], an existential quantifier in the presence of a negative particle *bu* ‘not’ as in [30b], or a universal quantifier in the context of the adverb *dou* ‘all’ [30c]).

Note that Patty never produces *wh*-in-situ questions in English (except appropriately as in echo contexts). Moreover, she uses quantifiers such as *anything*, *everything*, *nothing*, *something*, etc. completely appropriately, with correct polarity, as shown in the examples in [31]:

- [31] *you don't have to tell **everyone** in the world*
*you don't have to tell **anyone***
***nobody** like to hear **something** bad*
*there is **nothing** more I can do*
*and can't even see **anything***

This suggests that she has indeed acquired the features associated with these specific lexical items in English vs. *wh*-question words such as *what*. Another way to say this is that she has managed to correctly remap the syntactic and semantic *features* of quantification and clause type such as interrogative or exclamative onto the corresponding lexical items in English, with the correct syntactic consequences in terms of overt movement.¹⁴

Let us turn now to relative clauses. English relative clauses can be introduced by a *wh*-element (a phrase or relative pronoun), or by the complementizer *that*, or (in non-subject relativizations) by a covert (null) operator, as shown below in [32a-c] respectively. A ‘strong’ [wh] feature of English is assumed to induce movement of the *wh*-phrase or a null operator to Spec of C, leaving behind a trace that functions as a variable. When a *wh*-phrase has moved into Spec-CP, then the head C must be left empty; conversely, if the operator in Spec-CP is null, then the head C may be either filled by *that* or left empty.

- [32] a. the boy [_{CP} who_i [_C e I met t_i]]
b. the boy [_{CP} Op_i [_C that I met t_i]]
c. the boy [_{CP} Op_i [_C e I met t_i]]

The main diagnostic for determining whether a *wh*-phrase or null-operator has moved or not is by observing whether such movement exhibits locality effects, that is, is constrained by subjacency. Operations involving ‘fronted’ elements should result in unacceptability if they violate certain locality constraints (however these are theoretically formulated). Conversely,

¹⁴ A reviewer writes that if Chinese *wh*-expressions depend on licensing for their interpretation (as shown in the examples in [30]), then “the concept of de-linking becomes irrelevant.” Clearly, though, the native Chinese speaker will have to learn that *wh*-expressions in English are assigned a Q interpretation rather than negation, universal quantification, etc. Interestingly, a recent study of the opposite situation—the acquisition of the interpretation of *wh*-(in-situ) expressions in Korean by native speakers of English—suggests that native English speakers have difficulty recognizing required indefinite quantifier (non-Q) interpretations of *wh*-expressions (e.g. ‘I know that John likes *someone*’ vs. ‘I know *who* John likes’), perhaps because they fail to recognize the appropriate corresponding licenser, which in Korean is a morphological affix on the verb (Choi, 2004).

when the resulting utterance appears to violate these constraints but does *not* give rise to unacceptability, it is assumed not to have been derived by movement, but rather to result from base-generation in that position to begin with. The essential idea is that subjacency-type constraints simply do not apply if there is no movement.

Chinese has been argued not to have *wh*/operator movement because sentences which appear to violate locality constraints are nonetheless perfectly acceptable, as shown in [33] (from Hawkins (2001: 274):

- [33] Ni xiangxin [[[Lisi mai-le shenme_{IP}] de_{CP}] shuofa_{DP}]?
 you believe Lisi buy-PERF what C claim
 ‘What_i do you believe the claim that Lisi bought_i?’

However, it appears that in restricted cases in Chinese, namely those involving relativization of adjuncts, subjacency violations do occur. Ning (1993), Li (2002) and Aoun & Li (2003) argue that these are in fact derived via movement of a (null) operator which is “equivalent to a *wh*-operator in English” (Li 2002, p. 58, citing Ning 1993). The Chinese examples in [34] and [35] show that long-distance movement in these cases is subject to locality (subjacency) effects and that violations of these constraints give rise to ungrammaticality (examples from Li 2002, pp. 58-59, and Aoun & Li 2003, pp. 177–178). Sentence [34] is a violation of the complex NP constraint and sentence [35] violates the adjunct island constraint:

- [34] *zhe jiu shi [[[[ta xihuan [*t_i* nian guo shu] de] ren] de] difang_i]
 this exactly is he like read ASP book C person C place
 ‘This is the place where he likes the person(s) that studied.’
- [35] *zhe jiu shi [[[[ruguo ta *t_i* shengqi] ni hui bu gaoxing] de] yuanyin_i]
 this exactly is if he angry you will not happy C reason
 ‘This is the reason (x) that you will not be happy if he gets angry (because of) x.’

The overall point to be made here is that English and Chinese, despite clear differences in word order (i.e. head-direction) and other properties within relative clauses, also appear to share some similarities at least for some types of relative clauses (e.g. adjunct relatives). Thus the differences between the two languages appear not to boil down to a single stark parametric choice that divides ‘English-type’ languages from ‘Chinese-type’ languages. This is precisely the argument made by Aoun & Li (2003:191ff), who suggest that various relativization strategies may instead be tied to particular morphosyntactic and semantic properties of the particular phrases to be relativized, and that these appear to be permuted both within and across languages.¹⁵ Once again, we see that it is the assembly and for SLA the re-assembly of features

¹⁵ Aoun & Li (2003) follow the ‘traditional’ semantic literature in decomposing *wh*-question words into three component properties of Question, Quantification and Restriction and argue that these features may be morphologically realized in various permutations crosslinguistically (e.g. combined within a single expression or realized discretely in different positions within a clause); another feature which affects how relativization is realized in a particular language is definiteness. The reader is referred to their work for further details.

that must be acquired. Oversimplifying, it would appear that for a native Chinese speaker acquiring English, the properties of adjunct relatives in Chinese must be extended to all relatives in English.

Has Patty managed this? Her production data overwhelmingly suggest that she has. There are about 120 relative clauses in the data, of all types. Some examples of subject relatives are provided in [36], object relatives in [37] and oblique relatives in [38]:

[36] *you will find someone who share your belief
and then they find this place that will do the catering*

[37] *there's a poem that you have to memorize
the language that you don't know
there are book club in Hawaii you may like to join
I got what I wanted*

[38] *I have a girlfriend that I can introduce you to
he's the only person I spoke to
you don't know who you should associate with
I have couple # couple university that I apply to*

The last set of examples, those in [38], are particularly interesting because they illustrate Patty's robust acquisition of preposition stranding in oblique object relativization. Preposition stranding is not allowed in Chinese; indeed, these are contexts which in Chinese require obligatorily *overt* resumptive pronouns, suggesting that Patty has acquired operator movement. These examples also demonstrate that Patty's acquisition of relative clauses in English has developed beyond the so-called 'null prep' stage argued for by E. Klein (1993, 2001), in which obligatory prepositions are dropped rather than stranded (or pied-piped). Since analyses of L2 null-prep phenomena (E. Klein 2001; Dekydtspotter et al. 1998) attribute the lack of an overt preposition in null-prep contexts in part to the base-generation of the *wh*-expression in Spec of C rather than derivation via *wh*-movement, Patty's supplianc of overt stranded prepositions suggests that she is probably not base-generating *wh*-expressions in Spec-CP but rather deriving them via *wh*-operator movement. (Baker (2003) takes stranding as "particularly good evidence" in favor of a syntactic derivation involving movement (p. 281).)¹⁶ In other words, Patty appears to have acquired the 'English' feature values for relative clause formation.

Finally, we can look at the results of a grammaticality judgment task she completed which was partly similar to that administered to native Chinese speakers by Hawkins & Chan (1997). The task consisted of 50 sentences containing relative clauses, 20 grammatical and 30 ungrammatical. The ungrammatical sentence types, summarized in [39] below included doubly-

¹⁶ A reviewer wonders whether "Baker is really talking about absence of resumptive pronouns, not stranding." The context for the remark cited above in the text is a discussion of the nature of the morphology-syntax interface, specifically of syntactic vs. lexical (nonsyntactic) derivation, and more specifically whether there exist any good diagnostic tests for distinguishing morphological structure that is derived via movement in the syntax from morphological structure that is not. See Baker (2003: 275–290) for details.

filled CP violations (n = 5) [39a], resumptive pronouns in various positions (n = 11) [39b], and ten subjacency violations of two subtypes: extractions from adjuncts (n = 5) and extraction from noun complements (n = 5) [39c]. In addition, four sentences of an error-type Patty produced in about 5% of her relative clauses were included, as exemplified below in [39d]. This type looks quite similar to a Chinese clause type described and referred to by Li & Thompson (1981) as a ‘realis descriptive serial verb construction’ (p. 611). This type was not addressed in Hawkins & Chan’s study, but both Patty’s production data and her results from the GJT indicate it bears more looking into (for future research), and that Patty appears to be maintaining in her English a distinction between clause-types that in fact exists in her native Chinese (see Lardiere (2006) for more details).

[39] Grammaticality judgment task test items (in addition to 20 grammatical relative clauses):

- a. Doubly-filled CP violations (e.g. **The girl who that lost her way cried*) n = 5
- b. Resumptives in various positions (e.g. **The boy who I play with him is my cousin*) n = 11
- c. Subjacency violations (n = 10):
 - extraction from adjuncts (e.g. **I bought the book my professor became famous after he wrote*) n = 5
 - extraction from noun complements (e.g. **They want the land the manager made the decision that we should sell*) n = 5
- d. ‘Realis descriptive serial verb constructions’ (following Li & Thompson (1981:611)) (e.g. **She is the classmate always forgets her assignments*) n = 4.

The results for Patty from this task are in fact highly consistent with the view that she has acquired an English-like representation of relative clauses, as previously suggested by her production data. She correctly rejected all five doubly-filled CP violations (100%), 10/11 of the sentences with resumptive pronouns (91%), and 9/10 of the subjacency violations (90%, 5/5 adjunct extractions and 4/5 of the noun complement extractions). In these cases, the findings suggest that she *has* acquired operator movement that is subject to locality constraints similar to those represented by native English speakers. The only truly non-targetlike results were for the serial verb construction type, in which she correctly rejected only 1/4 (for a 25% rejection rate), consistent with what her production data suggest. Once again, the learning problem here confronting Patty did not require the simple resetting of a parameter from a ‘minus’ value in the L1 to a ‘plus’ value in the L2 value but rather her learning that an operation (operator movement) that is very highly restricted in her native language needs to be extended more widely to other types of relativization in English.

4. Raising and case-marking

In this section I would like to elaborate on why I think the representational deficit view, with its emphasis on locating the source of morphological omission in the syntax rather than in a (post-syntactic) morphological or PF component, is flawed. I will place this argument in the context of subject-raising and case-marking, for which I rely heavily on theoretical assumptions sketched in Chomsky (1998, 1999) and Radford & Ramos (2001). The latter paper involves a case-study of a specific-language-impaired (SLI) English-speaking child who produces incorrect case-marking on pronouns (among other things).

In brief, nouns and pronouns are assumed to enter the syntactic derivation with an unvalued case feature. They receive a case value by entering into an agreement relation with a c-commanding head, or *probe*. If the head is a finite T, the case value will be nominative; if a little v, then accusative. Additionally, Radford & Ramos propose that the domain for valuing genitive or possessive case is definite D. Moreover, if the head—in this example we may refer to T, following Chomsky—carries an EPP-feature, it projects a specifier into which a subject moves. However, in order for T to even have an EPP-feature, it must bear agreement features with which its subject agrees. These assumptions are summarized in [40].

- [40] [u Case] \Rightarrow NOM if in the domain of T_{+FIN}
 \Rightarrow ACC if in the domain of (transitive) v
 \Rightarrow GEN if in the domain of D_{+DEF}

T carries an EPP-feature that triggers subject raising
 T carries an EPP feature if it is ‘ ϕ -complete’ (has a complete set of person/number agreement features).

For acquisition, these assumptions lead to the prediction, directly quoting Radford & Ramos, that “failure to mark tense or agreement (or both) in obligatory contexts would be expected to result in concomitant case-marking errors” (p. 7). However, the specific technical detail that I’d like to zero in on here is that, for purposes of the syntactic computation, apparently such tense or agreement can be abstract, or phonologically null. Let’s look at the concrete example provided by Radford & Ramos:

- [41] Mary has burned John’s letter.

For expository clarity, no doubt, Radford & Ramos have used the auxiliary form *has* which indeed happens to exhibit overt 3sg agreement in English, but of course the mechanism by which subjects raise and nominative case-marking is valued would presumably be exactly the same even in the absence of any *overt* agreement distinctions, for example, in the case of a modal auxiliary construction, as in [42]:

- [42] Mary/She should burn John’s letter.

In this case, we assume that there is abstract agreement nonetheless, because we can see its syntactic consequences: *Mary* has raised into Spec of T and is assigned (abstract) nominative case which we could check by substituting the appropriate pronominal form *she* (which in English does require overt case-marking). Indeed, for accusative case valuation, null abstract agreement must be posited since English doesn’t exhibit overt verb-object agreement. Similarly, Radford & Ramos posit a null abstract possessive morpheme and a null definite determiner in possessive DP structures as in *John’s letter* (shown in [43]), noting explicitly that: “The null definite determiner carries abstract agreement features which agree with the possessor *John*” (p. 3). On their account, this abstract possessive morpheme subsequently gets spelled out as ‘apostrophe-s’ (*John’s*).

- [43] [DP [D_{+AGR} \emptyset] [POSSP John [POSS \emptyset] letter]]

The overall point here is that there is no apparent requirement for features that trigger syntactic derivational operations to have any morphophonological content at all (although see note 3). The abstractness of features leads to the inescapable conclusion that *overt* inflectional marking is located squarely in the morphological and/or phonological component and we simply cannot derive inferences about the syntactic representation from ‘missing’ or ‘null’ morphology. Of course, we would like to maintain that the overt marking of various sorts of agreement in specific conditioned environments is part of the assembly of features within specific languages, but this is part of *morphological competence*, as I outlined at the beginning of this paper. Chomsky himself “puts aside” questions about how the features are assembled in lexical items.¹⁷ There is probably no sense in which we can claim that such morphological marking *triggers* syntactic operations such as subject-raising and structural case valuation, although it may indirectly reflect the presence of an abstract feature and the ‘mark’ of such operations.

For language acquisition, then, perhaps knowledge of uninterpretable features is simply deduced by the learner’s observing whether a lexical item has been displaced (since after all, this would be UG-guided knowledge of the most general and fundamental kind). This would square with other acquisition data as discussed elsewhere (Lardiere, 2000, 2006): for example, children appear to know extremely early whether verbs raise or not in the language they’re acquiring on the basis of their acquisition of finiteness, and well ahead of acquiring the verbal morphological paradigms associated with finiteness.

As I have reported elsewhere (Lardiere 1998a), Patty’s nominative case-marking on pronouns is perfect and completely conditioned by finiteness in T [Table 4]. Moreover her subjects are always appropriately raised. Given minimalist assumptions we have to assume that her T in English has the appropriate EPP feature entailing the appropriate agreement relation, despite the fact that she doesn’t always mark agreement and in fact almost never marks *regular* 3sg *-s* agreement in her spoken production data (Lardiere, 1998b, 1999). She also frequently fails to mark tense (Lardiere 1998a). Radford & Ramos’s prediction that a failure to mark tense or agreement should lead to concomitant errors in case-marking is simply not borne out for Patty.

Table 4. Patty’s pronominal subj. case-marking in finite past obligatory contexts (Lardiere 1998a):

Recording	Suppliance/contexts	%
1	49 / 49	100
2	378 / 378	100
3	76 / 76	100
TOTAL	503 / 503	100

¹⁷ Specifically: “The properties of features and assembly form a large part of the subject matter of traditional and modern linguistics; I will put these topics aside here, including questions about organization of assembled features within a lexical item LI. Also left to the side is the question of whether LI is assembled in a single operation or at several stages of the derivation, as in Distributed Morphology (Halle and Marantz 1993).” (Chomsky 1998: 13, n. 27).

Note furthermore that her L1 Chinese has *no* overt case-marking nor overt agreement. However it appears that subjects are also raised, at least over modals, in Chinese, implicating the presence of an EPP feature which in turn implicates the presence of abstract agreement:

- [44] *Zhangsan* hai dei xie yi-pian lunwen (based on Li & Thompson, 1981:303)
John still must write one-CL dissertation
'John still has to write a dissertation.'

From this we can conclude that the acquisition of nominative case marking in English by a native Chinese speaker doesn't involve anything like the resetting of a parameter in terms of syntactic feature selection, but it *does* involve acquiring morphological knowledge about how the lexical items for pronominal raised subjects in finite clauses are assembled in English. This is part of morphological competence.

Finally, turning briefly to possessive or genitive case-marking, Radford & Ramos present us with a methodological problem which resonates within our own SLA context as well. Assuming that the D head in possessive structures bears abstract agreement features, as mentioned earlier (see the structure in [43] above), what are we to make of data such as bare nominal possessors, of the type produced invariably by their case-study informant 'JC', and variably by Patty, as exemplified in [45]?

- [45] a. *Where Giovanni sticker?* (JC, from Radford & Ramos 2001, p. 15)
b. *Debbie brother was very rich* (Patty)

Specifically, what might account for the omission of possessive 'apostrophe-s' marking? Radford & Ramos suggest a variety of factors, including lack of its phonetic salience, the fact that it has phonologically conditioned allomorphy, its relatively low frequency of occurrence in adult speech, or "problems which SLI children have in acquiring regular affixes" (pp. 15–16)—all apparently non-syntactic factors.¹⁸

Radford & Ramos moreover point out that we really cannot empirically distinguish between the failure to acquire the morphological spell-out of genitive case-marking (a problem of morphological competence) vs. failure to assign genitive case in the syntax (a representational deficit). They write that "indeed it is hard to envisage what kind of empirical evidence could in principle" distinguish between these alternatives. If the possessor is genitive case-marked, D carries agreement features; if the possessor is caseless, D lacks agreement features. However,

¹⁸ Heather Goad (personal communication) observes that the phonological factors proposed by Radford & Ramos appear "somewhat questionable" in any acquisition context, for the following reasons: First, [s] (and [+strident] segments in general) is highly salient and perceptible, involving a concentration of energy in higher frequencies which enables it to appear adjacent to any type of segment, including stops. Second, the phonologically conditioned allomorphy that occurs in English -s affixation is cross-linguistically unmarked: assuming that such affixes in English are underlyingly /z/, then the devoicing that occurs after voiceless obstruents makes English virtually like every other language in requiring adjacent obstruents to agree in voicing. Similarly for the epenthetic [ʔ] allomorphic variant, (near-)identical segments are rarely permitted at edges cross-linguistically, and such epenthesis is the best way to satisfy cross-linguistically well-attested syllabification requirements and still be faithful to the segmental content of the affix.

since D is *null*, it is “obviously impossible to determine whether it is marked for agreement or not” (pp. 15–16).

In Patty’s case specifically, we fortunately do have another type of evidence which points to a morphological rather than syntactic deficit for missing ‘apostrophe-s’ marking: the fact that her suppletive pronominal possessive forms are all perfectly case-marked. The fact that Patty only variably produces affixal case-marking but invariably produces correct suppletive case-marking suggests that the problem is indeed a morphological one (see Lardiere, 1999, 2000) or perhaps partly phonological, along the lines suggested by Goad et al. (2003) regarding prosodic difficulties facing native Chinese speakers acquiring English.¹⁹ Moreover, the fact that her pronominal case-marking and subject-raising, etc. are perfect suggests that Patty has acquired uninterpretable features (EPP, case, agreement, finiteness) in the L2 for which there are no corresponding overt expressions in her L1.

The inescapable conclusion is that, where we find morphological variability, it is not necessarily (or even likely) the case that an entire language L—here the L2 idiolect—has simply not selected the features in question. Formal models of minimalist syntax apparently do not care whether features get spelled out suppletively vs. affixally or perhaps even overtly at all. However, formal models of morphology *do*, and that is where we should be focusing our efforts if such variability—and by extension, morphological competence—is something we are interested in explaining.

5. Towards a possible model?

This final section is brief and rather speculative—a possible outline for future research in which I would like to touch upon the sort of questions we can begin to ask in addressing issues of morphological knowledge, and what sort of model could provide a framework in which such questions could even be formally articulated. It is clear that locating the source of morphological variability in a distinct morphological (or phonological) component of the grammar (by characterizing it as a ‘mapping’ or ‘re-mapping’ problem) requires a separationist model of grammar, in which the output of syntactic computation is indirectly mapped via morphological (or phonological) module-specific ‘translation’ procedures to actual phonological forms. One such possible framework is that of Distributed Morphology, in which the assembly of lexical items is ‘distributed’ throughout the grammar. More specifically, the spell-out or selection of phonological features in a derivation is post-syntactic, carried out in an operation which selects and inserts the closest-matching *vocabulary entry* (including the possibility of a default ‘elsewhere’ entry) into terminal nodes containing morphosyntactic feature bundles. (See Embick & Noyer (2001); Halle & Marantz 1993; Marantz 1997 for more detailed descriptions of this

¹⁹ Goad (p.c.) notes, however, that the possessive affix attaches to prosodic phrases in English, a licensing option that is shared by Mandarin Chinese, e.g. for question particles. The prediction then, is that it should be prosodically easier for a native Chinese speaker to build a representation of possessive *-s* marking in English than plural or 3sg *-s* (which require adjunction to the prosodic word). This prediction is not borne out in Patty’s data, where we find sharply lower rates for 3sg than for either plural or possessive *-s* affixation in the spoken production data. (Goad suggests that other things might be going on here with 3sg marking, though, such as pressure toward paradigm uniformity.)

model. For other types of separationist models see Anderson (1992); Aronoff (1994); Beard (1995); see Jackendoff (1997) for a non-derivational alternative.)

Consider the schematic vocabulary entry shown in [46] below (from Parrott (2002) and Mittelstaedt & Parrott (2002), who address the question of individual-speaker morphological variability using Distributed Morphology within a sociolinguistic variationist (L1) context):

[46] Vocabulary Entry [F1, F2, F3...] <i>Morphosyntactic/semantic features (abstract)</i>	⇒	/phono/	f _____
		<i>Phonological features</i>	<i>Contextual features</i>

Within a formal model such as Distributed Morphology (for example), we might ask exactly how vocabulary entries are constructed in second (as well as first) language acquisition. To what extent could the learner be transferring or otherwise somehow tacitly comparing particular vocabulary entries between the L1 and L2? Assuming the learner has a vocabulary entry similar to that in [46] for a particular L1 lexical item, how does she go about constructing an L2 vocabulary entry for an L2 lexical item with a different but partially overlapping set of features, e.g., [F1, F3, F4...]? Assuming the learner manages this and constructs a vocabulary entry with the correct combination of features, how does she then come up with the right contextual or conditioning features (to the right of the arrow) for the selection or insertion of this entry? How does a learner figure out if the overt expression of features is even obligatory? Do learners transfer their knowledge of possible morphological optionality (if this exists) from one language to another? These questions are all related to the issue of morphological competence.

It is relatively easy to specify the precise conditioning factors for nominative case-marking on pronouns in English, much more difficult for complex vocabulary entries such as definite articles in English or number-marking in Arabic or past-tense-marking in Somali. Acquiring the morphological spell-out of the features of these entries and knowledge of the correct contexts for their insertion are arguably not amenable to description in terms of the (re-)setting of parameter values. Viewed in this light, the ‘selection’ part of language acquisition seems easy; it’s the ‘assembly’ part that’s difficult, especially if it’s complicated by already having learned how features are organized and assembled in particular lexical items in one’s prior language(s).

To conclude, I have argued in this paper for the need to include some notion of morphological competence in any attempt to account for variability in second language acquisition (not to mention the need to account for the complex knowledge that underlies ‘successful’ acquisition). We do not yet have even a good description of how to model this sort of competence; this paper has so far only taken a stab at sketching the outlines of the nature of the problem. If we stick with a parameter-resetting model for SLA in order to explain the morphological variability we empirically observe in the data (assuming that we should indeed try to explain it), then the model will need to be enriched with an adequate description of feature-assembly in addition to feature-selection. But then it’s not clear that we’re dealing with anything like real ‘parameters’.

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Spatial Feature Assembly in First and Second Language Acquisition. pursuing this type of analysis, much of what constitutes spatial cognition is outside the .. so (English in, French sous 'under'). .. Bley-Vroman, R., & Joo, H-R.Â children acquire highly complex language very fast and seemingly without effort. . productivity, while less attention has been paid to the later stages of language .. "actually, on the 18th of February we will go to the theatre and see. Chapter 2: First Language Acquisition (pp. Download PDF.Â In both first and second language acquisition, the problem of variability is being carefully addressed by researchers. One of the major current research problems is to account for all this variability. Language and Thought ĩ,§.