

# Variability in the use of the English article system by Chinese learners of English

**Daniel Robertson** *University of Leicester*

It is well known that the Chinese language does not have functional equivalents of the English definite and indefinite article. Correspondingly, there is plenty of observational evidence that Chinese learners have difficulty with the article system in English. In particular, these learners have a marked tendency to omit the article where native speakers of English would use one. In this article we report the results of an experimental investigation of the variable use of the definite and indefinite articles by 18 Chinese learners of English. A referential communication task was used to elicit samples of the speech of these learners which was rich in referring noun phrases. From the resulting corpus 1884 noun phrases were coded, using a taxonomy based on Hawkins' (1978) description of the definite and indefinite articles and demonstratives in English. The analysis shows an overall rate of 78% suppliance of articles in contexts where a native speaker would use the definite or indefinite article. Of the remaining 22% of contexts where articles are not used, we found that many of the instances of non-suppliance of articles could be explained by three principles:

- 1) a syntactic principle of 'determiner drop', whereby an NP with definite or indefinite reference need not be overtly marked for [ $\pm$  definiteness] if it is included in the scope of the determiner of a preceding NP;
- 2) a 'recoverability' principle, whereby an NP need not be marked for [ $\pm$  definiteness] if the information encoded in this feature is recoverable from the context; and
- 3) a 'lexical transfer principle', whereby some of these learners are using demonstratives (particularly *this*) and the numeral *one* as markers of definiteness and indefiniteness respectively.

However, these principles do not account for all the instances of non-native-like usage in the corpus. There remains a residue of 206 noun phrases without articles in contexts where native speakers would use an article. There are identical contexts, moreover, where these learners *use* the articles. We suggest that this evidence of unsystematic variation in the use of the articles by these learners lends support to the hypothesis that the optionality in the use of articles is due to difficulty acquiring the correct mapping from the surface features of definiteness and referentiality (*the*, *a*, and the zero article  $\emptyset$ ) onto the abstract features of the DP.

Address for correspondence: Daniel Robertson, Lecturer in Education, School of Education, University of Leicester, 21 University Road, Leicester LE1 7RF, UK; email: dr20@leicester.ac.uk

## I Introduction

Consider the following extract from the transcript of a referential communication task. Speaker A has a geometrical diagram on a piece of paper in front of her, and her task is to describe the diagram so that Speaker B can reproduce it as accurately as possible. The participants are native speakers of Mandarin Chinese.<sup>1</sup>

- 1) 9 A: Yeah. Draw, er, without, draw, er, double line but without the, the bottom. Triangle, er (okay), meets at the bottom.  
 10 B: Okay.  
 11 A: But, er, the right, right + one, right line you should use blue pen and left, left line is red.  
 12 B: Left line is red?  
 13 A: Yes. Right triangle, but without bottom.  
 14 B: Okay.  
 15 A: And then, er, look at the + + blue, blue line and, and + + + how do you say? ((laughs)) it's very difficult to say. Arrgh! And use a red pen to draw a + + + er, a square, but a square should link with, er, ah! I do not, our triangle line's without bottom but now, if, if the bottom line is exist and, and if, I mean, because, because we, we, don't need to draw it.

For current purposes, the interest in this extract lies in the use of the articles. In turn 9, Speaker A introduces a new entity into the discourse (*double line*), but does so without using the indefinite article (*. . . draw, er, double line. . .*).<sup>2</sup> In the same turn, the speaker refers to a triangle that has been introduced earlier but without using the definite article (*Triangle, er, meets at the bottom*). In turn 11, the speaker again refers to definite entities without using the definite article (*blue pen* and *left line*). In turn 12, Speaker B echoes Speaker A in using the NP *left line* without a definite article. In turn 13, Speaker A uses an NP which has definite reference without the definite article (*right triangle*). She also refers to another NP which has indefinite reference, but without the indefinite article (*bottom*);

<sup>1</sup> In these examples the following transcription conventions are used: (i) the numbers in the left-hand margin represent the number of the turn in the dialogue; (ii) the '+' sign represents a pause of approximately one second's duration; (iii) '::' after a vowel represents lengthening of the vowel; (iv) back-channel acknowledgements are enclosed within single parentheses; (v) non-verbal behaviour is glossed within double parentheses; (vi) unintelligible utterances are transcribed as a sequence of three asterisks.

<sup>2</sup> It is sometimes difficult in these data to distinguish between the hesitation marker (which is transcribed here as 'er') and the indefinite article, both of which are pronounced /ə/ with varying length. The following criteria are used to distinguish between these two interpretations of a token of /ə/: (i) there is a pause between the morpheme in question and the head noun and (ii) the vowel is lengthened. If both of these criteria are satisfied, then the token is interpreted as a hesitation marker; otherwise it is interpreted as the indefinite article. In this particular case, the pause and the length of the vowel indicate that the token is a hesitation marker.

this same NP has been referred to with the use of the indefinite article earlier (in turn 9).

There are further examples of the omission of both definite and indefinite articles in turn 15 and throughout the transcript. It is not the case that these speakers lack articles in their interlanguage grammars, since they freely use both definite and indefinite articles. It is clear from the extract, however, that their use of the article system in English is not nativelike; in particular, they have a marked tendency to omit articles where a native speaker of English would use them. Not only are articles omitted, but, more strikingly, there is a lack of consistency in whether articles are used with NPs which are identical in form and in their semantic and pragmatic properties. That is, the use of articles by these speakers seems to vary unpredictably. An informal way of characterizing the speech of these learners is to say that the use of articles appears to be optional. The data are, then, on the face of it, strong evidence for optionality in the use of articles in the interlanguage grammars of these learners.

Evidence of the variable use/nonuse of a particular grammatical feature, or 'optionality' as I shall refer to it henceforth, is of particular interest for those who approach the study of second language acquisition from within the framework of generative grammar. Recent developments in generative syntax (the 'Minimalist Program') appear to rule out the possibility, on grounds of economy, of optionality in mature steady state grammars (Chomsky, 1993: 32). There is then a major question as to how optionality, one of the central empirical phenomena of second language acquisition, can be accommodated within a formal theory of interlanguage development. This article represents a preliminary attempt to address this question, in the context of an empirical study of the use of articles by Chinese learners of English.

The shape of this article is as follows. In Section II we review a number of studies which have addressed the question of optionality in second language grammars. We then outline some recent theoretical developments in generative grammar that bring some of these accounts into question. In Section III we consider briefly the grammar of the noun phrase in Mandarin Chinese, with a view to identifying some of the possible transfer effects in the data and in Section IV we present a framework for the analysis of the use of definite and indefinite articles in English, based largely on the work of Hawkins (1978). In Section V we present the results of a study of the use of referring expressions in a referential communication task by first language (L1) Chinese speakers of English, and in Section VI we discuss the significance of these

results for our understanding of the nature of optionality in second language grammars.

## **II Optionality in second language grammars**

The term ‘optionality’ refers to the use of two or more competing forms with the same meaning. More specifically in the context of this study, it refers to the variable use and nonuse of a particular surface feature, with no difference in meaning between the two forms. As an example, it is well known that some learners of English as a second language have difficulty with the third person singular *-s* inflection in the present tense. There is evidence, for example, that French learners of English go through a stage when they use the inflected form and the non-inflected form more or less interchangeably (Gerbault, 1978; Eubank, 1994a: 89). This stage seems to be characteristic of the early and intermediate stages of the interlanguage grammars of these learners, since omission of the third person *-s* inflection is rare in advanced and near-native French speakers of English. Other examples of optionality phenomena reported in the second language acquisition literature include variable placement of adverbs in relation to the finite verb by French learners of English the finite verb (experimentally elicited data reported in White, 1990/91; 1992) and variability in the use of ‘subject–verb inversion’ in the German of Romance learners (Clahsen, 1984; Eubank, 1994b).

Explanations of these examples of variability have typically been couched in terms of a correlation between the strength of verbal morphology and verb raising. Where the agreement features are strong, then verb raising is obligatory and there is no variability, but when the agreement features are weak – or <inert>, to use Eubank’s term – then verb raising is optional. Eubank argues for a strong causal link between the strength of morphology and the possibility of verb raising (1994b). Using evidence from the ZISA project (Clahsen *et al.*, 1983), Eubank shows that José, a Portuguese immigrant to Germany, acquires morphological agreement in German before he acquires morphological tense and that the period of optional verb raising coincides with the beginning of productive person agreement marking. Eubank concludes from this that until morphological tense has been acquired, the [+ tense] feature in the interlanguage grammar is inert, thus allowing optional verb raising.

Eubank’s account has been criticized on a number of grounds. In particular, Lardiere has provided evidence from a long-term Chinese resident of the US that it is possible to have acquired verb movement while at the same time having a very low (typically

around 35%) rate of accuracy in the morphological marking on the verb (Lardiere, 1998). Another difficulty for Eubank's proposal derives from evidence of residual verb-second phenomena in advanced German learners of English (Robertson and Sorace, 1999). Eubank's theory predicts that optional verb raising will cease when the learners have acquired productive use of tense morphology. But Robertson and Sorace's study shows that German learners of English continue to make sporadic use of a variety of residual verb-second phenomena long after the period when they can be assumed to have acquired [+ tense] in English, as the following example attests (the relevant phrase is given in *italics*):

- 2) I like to watch people thoroughly. In streets and in trains, in station halls and in narrow elevators, *everywhere do human beings perform plays*: short plays, dramas and comedy.

In this example, the clause-initial position is occupied by the adverbial *everywhere* and the learner has used *do*-support (a reflex of verb raising) so as to conform to the verb-second constraint.

As Lardiere points out, Eubank's theory depends on a strong hypothesis about the direction of causality between the acquisition of verb morphology and the projection and feature specification of Agr features in the syntax. Before verbal morphology has been acquired, the abstract feature [+ tense] is inert and will not support categorical verb raising. This hypothesis has been dubbed the 'Impaired Representation Hypothesis' (IRH) (Prévost and White, this issue). Both Lardiere (1998) and Prévost and White (this issue), following Haznedar and Schwartz (1997), argue against the IRH on both empirical and theoretical grounds. The theoretical argument is that a more parsimonious theory would be based on the assumption that the representation of functional categories in the interlanguage grammar of the second language (L2) learner is retained from the L1 grammar (and hence unimpaired), and that the learner's difficulties with verb movement are due to a failure in the mapping between the inflected verb form and the abstract functional features in the interlanguage grammar. As we shall see, the data from the present study support such a view, although in different syntactic circumstances.

Most of the examples of optionality which are discussed in the literature concern the link between verb-raising and the richness of verbal morphology. There are other examples of apparent optionality, however, which are unrelated to the verb phrase, but which merit investigation. One such example is the persistent failure of Chinese learners of English (and learners with

typologically related L1s) to make use of the indefinite and definite articles where they are required in English. This failure manifests itself as an apparent optionality in the use of the definite and indefinite article in the spoken and written English of Chinese learners of English at all levels.

In Singaporean English, for example, omission of both the definite and indefinite articles is common, as in the following examples (from Platt, 1977: 26):

- 3) a. My paren' have flat in Geylang.
- b. Usually I take bus.
- c. You see green shop house over t'here?

Platt's data show that the average 'accuracy'<sup>3</sup> rate of use of the definite article by a sample of 20 Singapore English speakers was 87.9%, and for the indefinite article 71.7%. Similar percentages for the 'accurate' use of articles are reported by Huebner (1983; 1985) in his study of a Hmong speaker acquiring English in naturalistic circumstances in Hawaii, and by Parrish (1987), in her study of the speech of Mari, a Japanese woman acquiring English. Both Hmong and Japanese share with Chinese the lack of articles. There is thus plenty of observational evidence for the variable use of articles by learners whose L1 lacks them, but there are few experimental studies relating to this topic reported in the literature (however, for an interesting study of the use/nonuse of articles in English by six native speakers of Czech and Slovak, see Young, 1996). This study represents an initial attempt to fill the gap.

### **III The NP in Chinese**

In this section we provide a sketch of the grammar of the noun phrase in Chinese, particularly with respect to the marking of definiteness and indefiniteness. Our account is based on the very clear and accessible treatment of the grammar of the noun phrase in Li and Thompson (1981); unless otherwise specified, all the examples in this section are taken from this work.

Mandarin Chinese does not have a system of articles such as exists in English. Definiteness is marked on the noun phrase, when it is marked at all, through the use of word order or through the use of demonstratives. We consider first the use of word order to

<sup>3</sup> 'Accuracy' in this context means suppliance in obligatory contexts of use, where obligatory contexts of use are defined in relation to standard (British) norms. It is relevant to point out that standard English forms part of the Singapore English continuum, so these speakers would have had access to standard English, particularly through their contact with the education system.

mark definiteness. Mandarin is a topic-prominent language; the sentence is constructed around the two-part division of topic and comment rather than subject and predicate as in English and most other European languages. The topic represents given information, i.e., information that is known to the speaker and assumed by the speaker to be known to the hearer. Since indefinite NPs are necessarily not given information, indefinite noun phrases cannot occupy the pre-verbal topic position; moreover, since the unmarked position for the subject is pre-verbal, post-verbal subjects will almost invariably be indefinite. Thus the word *rén* in (4a), which is the subject and occupies the topic position, is interpreted as definite, whereas in (4b) it is interpreted as indefinite since it occurs after the verb (Li and Thompson, 1981: 20).

- 4) a. *rén lái le*  
 person come PFV/CRS<sup>4</sup>  
 'The person(s) has/have come.'  
 b. *lái-le rén le*  
 come-PFV person CRS  
 'Some person(s) has/have come.'

Similar considerations govern the interpretation of object NPs. The unmarked position for the object NP is after the verb (5a). The object may also, however, be marked with the particle *ba*, in which case it comes before the verb (5b). If the speaker wishes to emphasize that the object NP is definite (i.e. known to the speaker and the hearer), it may be placed in the preverbal topic position; see (5c) and (5d):

- 5) a. *wǒ zài mǎi shū le*  
 I DUR buy book CRS  
 'I am buying a book.'  
 b. *wǒ bǎ shū mǎi le*  
 I BA book buy PFV/CRS  
 'I bought the book.'  
 c. *shū wǒ mǎi le*  
 book I buy PFV/CRS  
 'The book, I bought it.' (topic, contrastive)  
 d. *wǒ shū mǎi le*  
 I book buy PFV/CRS  
 'I bought the book.' (contrastive)

<sup>4</sup>The following abbreviations are used in examples: ASSOC associative (-*de*); BA *bā*; CL classifier; CRS Currently Relevant State (*le*); DUR durative aspect (-*zhe*, *zài*); EXP experiential aspect (-*guo*); GEN genitive (-*de*); PFV perfective aspect (-*le*); PL plural (-*men*, -*xie*); 3sg third person singular pronoun.



Although it is true that Mandarin Chinese has no system of articles equivalent to the article system in English, there is widespread use of determiners which function in part to signify definiteness and indefiniteness. In particular, the demonstratives *zhèi* ‘this’ and *nèi*- ‘that’ are used to signify definiteness and *yī*- ‘one’ is used to signify indefiniteness. An unmarked NP in topic position can be interpreted as definite or generic (6a), whereas an NP premodified with a demonstrative must be interpreted as definite (6b). An NP premodified with *yī* ‘one’ is indefinite and therefore cannot occur in topic position (6c):

- 6) a. gǒu wǒ yǐjīng kàn-guo le  
dog I already see-EXP CRS  
‘Dogs/The dog I have already seen.’  
b. nèi-zhī gǒu wǒ yǐjīng kàn-guo le  
that-CL dog I already see-EXP CRS  
‘That dog I have already seen.’  
c. \* yī-zhī gǒu wǒ yǐjīng kàn-guo le  
one-CL dog I already see-EXP CRS

(Li and Thompson, 1981: 86)

At this point, we make a distinction between definiteness and referentiality (Li and Thompson, 1981: 126). Simplifying considerably, a definite NP is one that is known to the speaker and the hearer, while, by definition, a referential NP is one that refers. As Li and Thompson point out, only referential noun phrases can be definite or indefinite and the ‘question of definiteness does not arise for nonreferential noun phrases’ (Li and Thompson, 1981: 129). It follows that NPs which are marked for indefiniteness are referring expressions :

- 7) mén-kǒu zuò-zhe yī-ge nǚ-háizi  
door-mouth sit-DUR one-CL female-child  
‘In the doorway was sitting a girl.’  
8) tā yǒu yī-ge fāngfǎ zhuàn-qian  
3sg exist one-CL method earn-money  
‘S/he has an idea for making money.’

(Li and Thompson 1981: 126)

Objects of verbs are often non-referential:

- 9) nèi-ge shānggrén mài shuǐguǒ  
that-CL merchant sell fruit  
‘That merchant sells fruit.’



- 10) tāmen tōu zìxíngchē  
 they steal bicycle  
 'They steal bicycles.'

In Mandarin there is an interaction between referentiality and the use of nominal classifiers. Li and Thompson (1981: 130) point out that nonreferential NPs never take classifier phrases. It follows that a noun phrase with a classifier phrase must be referential. Furthermore, if the classifier phrase includes a demonstrative (i.e. *zhèi* 'this' or *nèi* 'that'), then the NP must be definite.

All the examples below are definite (Li and Thompson, 1981: 130):

- 11) a. zhèi-ge rén  
       this-CL person  
       'this person'  
       b. nài-xiē yǐzi  
       that-PL chair  
       'those chairs'  
       c. nài-zhāng zhǐ  
       that-CL paper  
       'that sheet of paper'

If a classifier phrase includes a numeral but no demonstrative, then it is necessarily indefinite:

- 12) a. yī-kē shù  
       one-CL tree  
       'a tree'  
       b. liǎng pén shuǐ  
       two bowl water  
       'two bowls of water'

Referential noun phrases may also occur without a classifier phrase. In these cases the interpretation of the noun phrase as definite or indefinite depends on the context. For example, a subject NP following the existential verb *yǒu* 'exist' is generally indefinite:

- 13) yǒu rén gěi nǐ dǎ-diànhuà  
       exist person to you hit-telephone  
       'Someone telephoned you.'

In the following example, the interpretation of the NP depends on the context:

- 14) wǒ mǎi-le shuǐguǒ le  
       I buy-PFV fruit CRS  
       'I have bought the fruit/some fruit.'

The word *shuǐguǒ* ‘fruit’ is interpreted as definite if it can be so understood in the context; if this interpretation is not possible, it will be interpreted as indefinite.

An additional factor which is relevant for the analysis of our data is that the distal demonstrative *nèi*- ‘that’ and the numeral *yī* ‘one’ in cases in which they are unstressed, are beginning to take on some of the functions of the definite and indefinite articles *the* and *a* in English respectively (Li and Thompson, 1981: 132; Huang, 1999):

- 15) a. nǐ    rènshi    bù   rènshi   nèi-ge   rén?  
       You know no know that-CL person  
       ‘Do you know the/that person?’  
       b. tā    mǎi-le    yī-ge    màozi  
       3sg buy-PFV one-CL hat  
       ‘S/he bought a/one hat.’

Another feature of the grammar of the noun phrase in Mandarin that is relevant to our data is the structure of partitive expressions corresponding to phrases such as ‘the edge of the paper’, ‘the centre of the circle’ in English. Li and Thompson (1981: 113) refer to such phrases in Mandarin as ‘associative phrases’. An associative phrase is one where two noun phrases are linked by the particle *-de*. ‘The first noun phrase together with the particle *-de* is the associative phrase. The second noun phrase is the head noun being modified’ (p. 113). The nature of the association conveyed by *-de* is variable. Most obviously, the use of *-de* conveys possession (glossed here as GEN):

- 16) a. wǒ-de    chènshān  
       I-GEN shirt  
       ‘my shirt’  
       b. tāmen-de    jiā  
       they-GEN home  
       ‘their home’

The particle *-de* can convey a range of meanings beyond that of possession, as we see from the following examples:

- 17) a. nèi-ge    fàndiàn-de                      cài  
       that-CL restaurant-ASSOC food  
       ‘the food of that restaurant’  
       b. Táiwān-huà-de                      yǔfǎ  
       Taiwan-speech-ASSOC grammar  
       ‘(the) grammar of Taiwanese’

#### IV Definiteness and indefiniteness in English

In order to understand the use and non-use of the definite and indefinite article in the interlanguage of Chinese learners of English, it is important to look at the semantic properties and the pragmatic function of the NPs in our corpus. To this end, we have developed a taxonomy for the categorization of NPs in the corpus which is based on a combination of the semantic and pragmatic properties of the environment in which the NP occurs. Our taxonomy is closely based on the work of Hawkins (1978) on definiteness and indefiniteness in English. For each category in the taxonomy, we provide a definition and examples from the corpus.

##### 1 The definite article

Our first category of definite NP environments, which we refer to as the ‘anaphoric use’, involves the repetition of an NP which has earlier been introduced for the first time in the discourse with an indefinite NP. In our data, this category is one of the most common. The following example is typical (here, and throughout, the relevant phrase is given in *italics*):

- 18) 9 A: And then after that you draw a square with the red . . .  
 10 B: Square?  
 11 A: Yeah, a square.  
 12 B: What does *the square* draw like?

Notice that a demonstrative (*this square*) would be perfectly acceptable in this context, although perhaps the definite article would be preferred.

The second category, ‘immediate situation use’, is identified by the fact that the object referred to is present in the immediate situation and is not visible to both speakers, but its existence is known to (or can be inferred by) both speaker and hearer. In our situation, the universe of discourse is narrowly confined, and there are only four objects which can be referred to in this way: *the red pen*, *the blue pen*, *the ruler* and *the (piece of) paper*. Examples, both with (19) and without (20) the definite article, are common in our data:

- 19) 87 B: Am I to use the blue, blue . . . ?  
 88 A: No, no, no, no, no, *the red pen*.  
 20) 3 A: And second is to draw a separate one, is a square, er, using the blue line + + + + + and after that draw a horizontal line with *red pen*.

As Hawkins (1978: 112) indicates, a demonstrative may be used in this kind of situation, but only if the object being referred to is one of a set of similar objects, at least two of which are visible to both participants. Neither of these two criteria apply in our situation, since all four objects are unique and can't be confused with other similar objects, and none of the objects is visible to both speakers (for a description of the experimental procedure, see Section V).

Our third category, which, following Hawkins, we call 'larger situation uses', is characterized by the fact that the NP referred to can be uniquely identified on the basis of knowledge which is shared by the speaker and hearer, but which does not derive from the immediate situation. In our data, this category is exemplified by expressions such as *the left-hand side*, *the middle*, i.e. typically spatial locations within the frame of the paper.

- 21) 25 A: On, on the::, on *the right hand side*. It's blue + + and . . .
- 22) 3 A: Left and upper, upper half of the, of the, er, of the paper spread wide (okay). Okay, towards *the centre*, *top centre* . . .
- 4 B: *Top centre*, *top centre*.

Hawkins proposes that all the three uses we have identified to this point have in common the fact that the speaker instructs the hearer to identify a set of objects and then to 'locate' the referent in that shared set of objects. What differentiates these three uses are the different pragmatic strategies that are used to accomplish these two objectives.

The category of larger situation use is closely related to our fourth category, the 'associative clause use' (Hawkins, 1978: 138).<sup>5</sup> An associative clause consists of two NPs joined by the preposition *of* such as *the bottom of the sea*, *the front of the house*. Successful use of such clauses depends on knowledge of a conventional association between the two NPs. In our data, this category is exemplified by examples such as the following:

- 23) 30 A: We use the triangle red line as *the bottom* of another square.
- 24) 35 B: *The left side* of the blue square.

The four categories that we have identified to this point are by far the most common of the definite NP environments in our data. There are three additional categories that are needed to make the taxonomy comprehensive. First, there is the '“establishing” relative

<sup>5</sup> We follow Hawkins' terminology, although we recognize that his use of the word 'clause' here is unorthodox; it would be more accurate to refer to these as 'associative phrases'.

clause', where the definiteness of the NP is established through the use of a post-modifying relative clause:

- 25) 41 A: The square box, the length of the square box is double the length of the, the underline, *the line that you drew, the first line that you drew.*

Second, there are so-called 'unexplanatory' uses of the definite article – as in phrases such as *the same N*, *the first N*, *the best N* – and, third, there is the use of the definite article with 'nominal modifiers' such as *the letter A*, *the number 3* (Hawkins, 1978: 146).

## 2 Demonstratives

As Hawkins points out, the use of a demonstrative is often accompanied by pointing or some other gesture which serves to help the hearer to 'match' the referring expression with the intended referent. The essential difference between the definite article and the demonstrative is that the use of the definite article carries an assumption that the entity referred to is unique within a set of such objects which both speaker and hearer have knowledge of; the use of the demonstrative carries no such assumption of uniqueness. The use of the demonstrative is, in effect, an instruction to match the referring expression with one of a shared set. Hawkins (1978: 115) describes this 'matching constraint' in the following terms: 'The demonstrative instructs [the hearer] to identify the object itself, and thus it actually has a visibility requirement built into it as part of its meaning.'

In contrast, the use of the determiner is an instruction to 'locate' the referent within a shared set. The identification of the shared set and the location of the referent within that set are not dependent on a visibility requirement, but rather on the ability of the speaker and hearer to exploit their shared knowledge of the world and the situation. The use of the definite article therefore opens up a far wider range of possibilities for successful reference than is available through the use of demonstratives.

This point is of some importance because, as we have seen, there is evidence that the demonstratives *zhèi* ('this') and *nèi*- ('that') are beginning to take on some of the functions in modern Chinese that the definite and indefinite articles play in English (Li and Thompson, 1981; Huang, 1999). In this respect, the Chinese language may be following a path which is prefigured in the development of English. As Hawkins points out, the definite article derives historically from demonstratives *this* and *that* through the

omission of the final consonant and the weakening of the vowel. In the historical development of English, once the matching constraint on the use of the definite article had been abandoned, the way was open for the article to acquire a range of functions which had been ruled out by the matching constraint.

As we shall see later, there is evidence in our corpus that Chinese learners of English use the demonstratives *this* and *that* and the numeral *one* as markers of definiteness and indefiniteness where a native speaker of English would use a definite or an indefinite article. It seems that the interlanguage development of these learners is mimicking a parallel process in the development of English and an ongoing process in the development of the Chinese language.

### 3 *The indefinite article*

In our taxonomy of NP environments we distinguish between three indefinite NP environments. First, there is the 'existential use' of an NP, where the existence of the NP is asserted in an existential predication. Examples in our data are typically introduced by the phrases *there is*, *there are*, or through the use of the verbs *have* or *got*, as in the following examples:

- 26) 1 A: All right, erm, at the top right hand corner of the paper *there's a number three*. Oka::y.
- 27) 94 A: Okay. Then + + + mm ((exhales)), then *you have a point*, have a point at, er, er, okay, then *you have a point* up to the red square.

We include existential uses of the verb *have* in this category because the Chinese equivalent of the verb *have* (*yǒu* 'exist') is also used to express existential predications, and *have* and *got* are used in this way in our data.

The second indefinite environment is where an object is introduced into the universe of discourse as:

- 1) the object of a transitive verb such as *draw*, *put*; or
- 2) as the complement in a copulative construction (30).

There are examples of (1) both with (28) and without (29) articles. In use (2) we also include occurrences of bare NPs, often in 'echo' environments, where the copula is not present (31).

- 28) 71 A: Then you draw *a horizontal line* using your blue pen.
- 29) 5 A: Draw, er, use, use *blue line*, blue pen.

- 30) 14 B: Is it *big one*?
- 31) 56 B: Roun, roun, is it round?  
57 A: Yeah, *a circle*.

The third category of indefinite environments is where the NP has ‘generic reference’:

- 32) 16 B: What do you mean by the square?  
17 A: ((Laughs)) Square, like *a floor*, you know?

These three indefinite environments between them account for all environments in our data where an indefinite article would normally be required in English. In addition, there is also a significant use of the numeral ‘one’, in environments where a native speaker might be expected to use the indefinite article. There are examples in the corpus which parallel the ‘existential’ (33) and the ‘object of NP’ (34) indefinite article environments.

- 33) 37 A: ((Laughs)) Okay. Then, then, er, under the red line got *one small rectangular*.
- 34) 43 A: And then, er, you write, you draw *one circle*, a big circle.

#### 4 Summary of the descriptive scheme

Table 1 provides a summary of the taxonomy of definite and indefinite environments which we find in our corpus. The taxonomy proposed here is very similar to the taxonomy (deriving from work by Bickerton, 1981) used in a number of other studies of the

**Table 1** Summary of definite and indefinite NP environments in the corpus

| Code                              | Category                                                                        |
|-----------------------------------|---------------------------------------------------------------------------------|
| <i>Definite NP environments</i>   |                                                                                 |
| D1                                | Anaphoric use of referring NP                                                   |
| D2                                | Immediate situation use of referring NP                                         |
| D3                                | Larger situation use of referring NP                                            |
| D4                                | Head noun of an associative clause NP                                           |
| D5                                | Unexplanatory use of definite NP                                                |
| D6                                | NP with nominal modifier                                                        |
| D7                                | NP with establishing relative clause                                            |
| <i>Indefinite NP environments</i> |                                                                                 |
| I1                                | Use of NP in existential predication                                            |
| I2                                | Use of NP as object of transitive verb or complement of copulative construction |
| I3                                | Generic use of singular NP                                                      |



**Table 2** Huebner's (1983) taxonomy of noun phrase reference (after Bickerton, 1981)

---

|    |                                                                                |
|----|--------------------------------------------------------------------------------|
| 1) | [– Specific Referent, + Assumed Known to the Hearer]: Generics                 |
| 2) | [+ Specific Reference, + Assumed known to the Hearer]: Referential Definites   |
|    | a. Unique or conventionally assumed unique referent                            |
|    | b. Referent physically present                                                 |
|    | c. Referent previously mentioned in discourse                                  |
|    | d. Specific referent otherwise assumed common knowledge                        |
| 3) | [+ Specific Reference, – Assumed Known to the Hearer]: Referential Indefinites |
|    | First mention of NP [+ SR] in a discourse and assumed not common knowledge     |
| 4) | [– Specific Referent, – Assumed Known to the Hearer]: Non-Referentials         |
|    | a. Equative noun phrases                                                       |
|    | b. Noun phrases in the scope of negation                                       |
|    | c. Noun phrases in scope of questions, irrealis mode                           |

---

acquisition of articles in English (Huebner, 1983; Parrish, 1987; Tarone and Parrish, 1988; Young, 1996). Bickerton's taxonomy depends on two basic distinctions: [ $\pm$ specific reference] and [ $\pm$ hearer knowledge] which together define four categories, as indicated in Table 2. The particular advantage of Hawkins' scheme for our purposes is that it highlights the similarities and differences in the function of the definite article and demonstratives.

## V Method

### 1 Materials

The task that was used in this study is based on a task originally designed by Gillian Brown and her colleagues in Edinburgh in the 1970s (for an extended discussion of some aspects of this work, see Brown, 1995). The task was used in a large-scale investigation into the use of spoken language by Scottish school children and undergraduates while engaged in collaborative problem-solving exercises. The advantage of this task for our present purposes is that it provides a high degree of control over the input, and results in language which is rich in the occurrence of referential expressions.

The version of the task that was used for this study involved two subjects, a Speaker and a Hearer. The Speaker had a sheet of A4 paper with a diagram drawn on it in two colours, blue and red. The Hearer had a blank sheet of A4 paper, a red pen and a blue pen and a six-inch ruler. The participants were required to collaborate so that the Hearer could reproduce the diagram on the Speaker's sheet of paper as accurately as possible. The participants sat facing one another at a table, with a screen between them. The height of

the screen was such that the participants could see each other's faces but not their pieces of paper. Nine pairs of subjects were tested, and each pair took part in four dialogues, two in English and two in Chinese.

## 2 Subjects

In total, 18 speakers of Chinese origin were used, all of whom were postgraduate students at Leicester University. Details of the country of origin and the mother tongue spoken by each subject are given in Table 3. The largest groups are those from Taiwan and P.R. China, with 7 each. Several of the Taiwanese claim to speak both Mandarin and Taiwanese as their mother tongue. There is also one speaker whose mother tongue is Korean, not Mandarin Chinese; this speaker was included in the study because, although his first language was not Mandarin Chinese, he spoke the language effectively as a native speaker. In spite of these variations in the language background of the speakers, they all used Mandarin when taking part in the communication task, and we shall not consider the possible effect of dialectal differences in the analysis of the data. This must be a subject of future research. As we have indicated, all the experimental subjects were recruited from the postgraduate student body at a British university, and thus can be assumed to have attained a level of proficiency equivalent to at least the minimum level required for admission to a postgraduate degree at

**Table 3** Country of origin and mother tongue of subjects

| ID | Sex | Mother tongue        | Country of origin |
|----|-----|----------------------|-------------------|
| A  | F   | Mandarin             | Malaysia          |
| B  | M   | Mandarin             | Malaysia          |
| C  | M   | Mandarin + Hokkien   | Malaysia          |
| D  | M   | Mandarin             | Malaysia          |
| E  | F   | Mandarin             | Taiwan            |
| F  | F   | Mandarin + Taiwanese | Taiwan            |
| G  | F   | Mandarin + Taiwanese | Taiwan            |
| H  | F   | Mandarin             | P.R. China        |
| I  | M   | Mandarin             | P.R. China        |
| J  | M   | Korean               | P.R. China        |
| K  | M   | Mandarin + Taiwanese | Taiwan            |
| L  | M   | Mandarin             | P.R. China        |
| M  | M   | Mandarin             | P.R. China        |
| N  | M   | Mandarin             | P.R. China        |
| O  | M   | Mandarin + Taiwanese | Taiwan            |
| P  | F   | Mandarin + Taiwanese | Taiwan            |
| Q  | M   | Mandarin             | Singapore         |
| R  | M   | Mandarin             | Singapore         |

**Table 4**    Experimental design

|             | Task 1  | Task 2  | Task 3  | Task 4  |
|-------------|---------|---------|---------|---------|
| Condition 1 | Chinese | English | English | Chinese |
| Condition 2 | English | Chinese | Chinese | English |

a British university, i.e., a score of 6.5 on the IELTS<sup>6</sup> Test, which is judged to be equivalent to a score of 575 on the TOEFL test.

*3 Experimental design*

Four diagrams of varying complexity were used so as to be able to estimate the effect of the difficulty of the task on the accuracy of the language used. The order in which the four tasks was presented was the same for all sessions. The pairs were allocated to two conditions in respect of the language used in each task, as shown in Table 4.

The participants changed role from Speaker to Hearer or vice versa after finishing Task 2. This arrangement ensured that each task was recorded the same number of times in both languages, and that each participant took part twice as Speaker and twice as Hearer, and in each role once in Chinese and once in English. The order of the tasks was not varied because it was not possible to do this systematically with a small sample. With a larger sample the order of the tasks would be varied systematically in order to eliminate as far as possible any practice effects on the difficulty of the task. In this article we are not concerned with the Chinese data and no further mention will be made of this aspect of the study.

**VI Results**

In this section we present an analysis of the results of the study. In the analysis our strategy was to categorize the noun phrases in the data according to the functional taxonomy that we have outlined in Section IV and to compare the frequency of different forms in each functional environment. The analysis will be guided by the assumption that omission of the articles by these learners is systematic. We shall attempt to account for the omission of articles by appeal to general linguistic principles. Where we can find no evidence for systematicity, then we shall conclude that the remaining cases of omission are evidence for a default zero article in the interlanguage grammar of these learners.

<sup>6</sup>International English Language Testing Service, administered by the University of Cambridge Local Examinations Syndicate (UCLES).

The corpus consists of 18 dialogues produced by 9 pairs of speakers. The dialogues vary in length from a minimum of 2–3 minutes to a maximum of about 10 minutes, with an average of about 4 minutes. In total, 1884 noun phrases were coded, in four categories. The categories and the distribution of the coded NPs are given in Table 5. It should be noted that, contrary to the practice of other researchers who have conducted frequency counts of the use of articles in spoken data (e.g. Huebner, 1979; Parrish, 1987), we have not excluded reformulations and repetitions from our frequency counts, since, as will become apparent, the use and nonuse of articles in these contexts is significant for our analysis.

Definite and indefinite contexts are defined as contexts requiring the definite or indefinite article in English respectively. Demonstratives were defined as *this*, *that*, *these* and *those*. Table 6 shows the frequency of occurrence of each type of NP in the taxonomy.

**Table 5** Distribution of coded NPs in the corpus

| Category            | Frequency |
|---------------------|-----------|
| Definite contexts   | 1411      |
| Demonstratives      | 92        |
| Indefinite contexts | 373       |
| The quantifier one  | 18        |
| Total               | 1884      |

**Table 6** Categories of definite and indefinite contexts and their frequencies in the corpus

| Code  | Category                                                                          | Frequency |
|-------|-----------------------------------------------------------------------------------|-----------|
| D1    | Anaphoric use of definite NP                                                      | 598       |
| D2    | Immediate situation use of referring NP                                           | 74        |
| D3    | Larger situation use of referring NP                                              | 430       |
| D4    | Head noun of an associative clause NP                                             | 228       |
| D5    | Unexplanatory use of definite NP                                                  | 71        |
| D6    | NP with nominal modifier                                                          | 16        |
| D7    | NP with establishing relative clause                                              | 9         |
| Total |                                                                                   | 1411      |
| I1    | Use of NP in existential predication                                              | 57        |
| I2    | Use of NP as object of transitive verb or complement of a copulative construction | 283       |
| I3    | Generic use of singular NP                                                        | 33        |
| Total |                                                                                   | 373       |

*1 Individual accuracy rates*

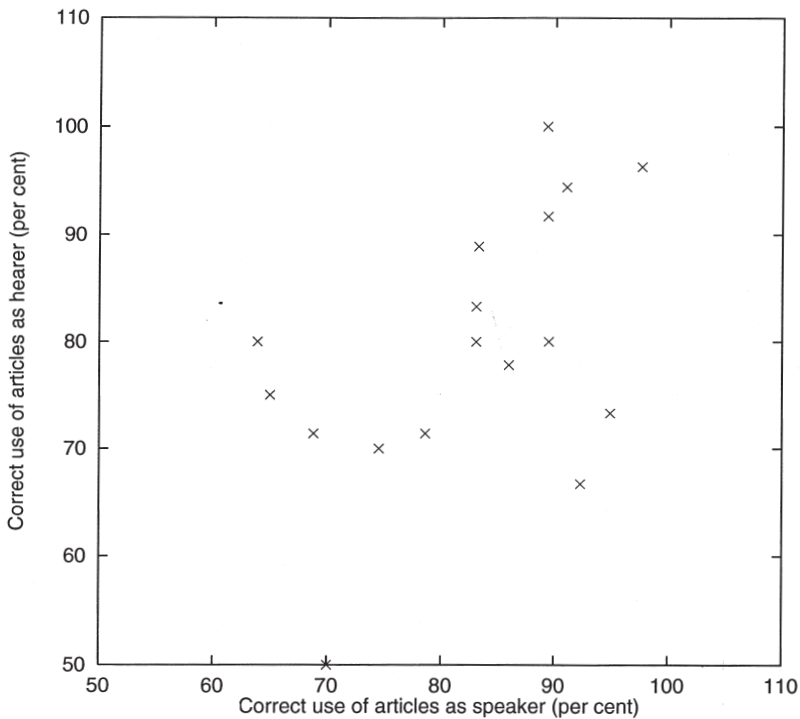
In the analysis we are primarily concerned with the use and non-use of articles in contexts where a native speaker would use an article; that is, we are interested in the accuracy of the use by these learners of the article system in English. We define 'accuracy' as the number of NPs with articles supplied which occur in contexts where an article is required in English, expressed as a percentage of all such contexts. Using this measure we consider first the accuracy rates of individual subjects (see Table 7).

One of the subjects (subject M) is near-native-like in his use of articles since his accuracy rate approaches 100%; however, there are several whose accuracy rates are less than 70%, indicating clearly that we are dealing with non-native-like usage. One interesting question that arises in this context is whether accuracy varies with the role as Speaker or Hearer. As we shall see later, this is in fact the case if we consider all environments together, since the accuracy rate in so-called 'echo' contexts (see Section 3, page 157) is markedly lower than in non-echo contexts, and the Hearer has more echo turns than the Speaker. In order to discount this effect, we looked at the accuracy rate of each speaker in both roles (as Speaker and Hearer) in non-echo contexts. If article omission were completely random, we would expect that there would be no correlation between the accuracy rates in the two tasks. In fact, accuracy rates are fairly consistent within subjects and across tasks,

**Table 7** Individual accuracy rates in all contexts, sorted in descending order of accuracy (given as frequency, with percentage in brackets)

| No | Subject id | [- article] | [+ article] | Total |
|----|------------|-------------|-------------|-------|
| 1  | M          | 2 (2.9)     | 66 (97.1)   | 68    |
| 2  | P          | 8 (8.3)     | 88 (91.7)   | 97    |
| 3  | B          | 4 (9.5)     | 38 (90.5)   | 42    |
| 4  | O          | 14 (9.9)    | 128 (90.1)  | 42    |
| 5  | L          | 8 (10.4)    | 69 (89.6)   | 77    |
| 6  | H          | 6 (11.1)    | 48 (88.9)   | 54    |
| 7  | R          | 15 (11.2)   | 119 (88.8)  | 134   |
| 8  | K          | 8 (12.1)    | 57 (86.4)   | 66    |
| 9  | J          | 22 (16.3)   | 114 (83.8)  | 136   |
| 10 | F          | 12 (16.9)   | 59 (83.1)   | 71    |
| 11 | N          | 15 (17.4)   | 71 (82.6)   | 86    |
| 12 | D          | 5 (32.0)    | 16 (76.2)   | 21    |
| 13 | Q          | 16 (24.6)   | 49 (75.4)   | 65    |
| 14 | G          | 11 (26.8)   | 30 (73.2)   | 41    |
| 15 | A          | 7 (30.4)    | 16 (69.6)   | 23    |
| 16 | C          | 7 (31.8)    | 15 (68.2)   | 22    |
| 17 | E          | 15 (32.6)   | 31 (67.4)   | 46    |
| 18 | I          | 43 (32.6)   | 89 (67.4)   | 132   |

as we can see from the scatter plot of the two sets of accuracy scores (see Figure 1<sup>7</sup>). As the plot shows (with one or two exceptions) subjects who are accurate in the role of Speaker also tend to be accurate in the role of Hearer and, similarly, those who have low accuracy rates as Speaker also have low accuracy rates as Hearer. The association is statistically significant (Pearsons'  $r = .506$ ,  $p = 0.038$ ). Assuming that the roles of Speaker and Hearer are pragmatically differentiated, this is clear evidence that the frequency rate of article use is a relatively stable characteristic of the individual and not dependent on the nature of the task or the occasion, although as we shall see, the frequency of use in any particular case is sensitive to the linguistic and pragmatic context.



**Figure 1** Accuracy of article use in Speaker and Hearer roles

<sup>7</sup>Subject G is omitted from this plot because she used no NPs in nonecho environments in her role as Hearer.

**Table 8** Overall accuracy rates: echo and nonecho contexts (percentage in brackets)

|            | Nonecho contexts |                | Echo-contexts |              | All contexts  |                |
|------------|------------------|----------------|---------------|--------------|---------------|----------------|
|            | [- article]      | [+ article]    | [- article]   | [+ article]  | [- article]   | [+ article]    |
| Definite   | 226<br>(16.6)    | 1117<br>(83.2) | 59<br>(72.0)  | 23<br>(28.0) | 287<br>(20.3) | 1124<br>(79.7) |
| Indefinite | 71<br>(22.1)     | 250<br>(77.9)  | 33<br>(63.5)  | 19<br>(36.5) | 104<br>(27.9) | 269<br>(72.1)  |
| Total      | 297<br>(17.8)    | 1367<br>(82.2) | 92<br>(68.7)  | 42<br>(31.3) | 391<br>(21.9) | 1393<br>(78.1) |

## 2 Accuracy in different linguistic and pragmatic contexts

We consider now how accuracy varies according to the linguistic and pragmatic context. Table 8 provides an overview of the data. Two distinctions are embodied in the table: the linguistic distinction between definite and indefinite contexts, and a pragmatic distinction between ‘echo’ and ‘non-echo’ contexts.

We define an echo context as a context where two coreferential NPs with the same head noun occur separated by a turn-boundary, and where the second occurrence of the NP functions as a comprehension check; typically the second occurrence occurs as an isolated NP, not as part of a predication. This definition allows us to include in the ‘echo’ category instances where the second occurrence of the NP (the echo) is not identical in form to the first (which we shall refer to as the ‘prompt’ NP), but where the echo is clearly functioning as a comprehension check. The following is an example:

35) 31 A: Okay? + + + er, under, un, under the blue line, go(t) *one box, rectangular.*

32 B: *Rectangular box.*

33 A: Er, red colour, rectangular.

What is interesting about this example is that the echo is a reformulation of the prompt NP, and, as such, can be taken as more directly reflecting the speaker’s interlanguage grammar than if it had been a true echo (i.e., identical in form to the prompt). Furthermore, the reformulation omits the determiner (the numeral *one*) which is used as a determiner in the prompt NP. If this example is typical of this learner, then it provides clear evidence for systematic use of the zero article in indefinite contexts in this speaker’s interlanguage grammar. There are two broad



generalizations which emerge from Table 8. First, we note that accuracy is higher in definite contexts (79.7%) than in indefinite contexts (72.1%,  $\chi^2 = 9.37$ ,  $p < 0.01$ ). It is a common finding in studies of article use that accuracy rates are lower for indefinite contexts than for definite contexts (Platt, 1977; Huebner, 1985; Parrish, 1987: 376). In Huebner's data the indefinite article is acquired very late, primarily as a marker of referential indefinite noun phrases (Huebner, 1985: 151); the explanation offered is that the learner's need to refer to indefinites is low. Secondly, and most strikingly, accuracy in echo contexts is markedly lower than it is in non-echo contexts. We consider the significance of this result in the following section.

### 3 *Echo contexts*

Echo contexts are particularly important in our analysis because the omission of the article is more frequent in echo contexts than in other contexts. Additionally, the omission of the article in this context may be a function of the interaction rather than direct evidence of optionality in the interlanguage grammar of the second speakers.

As we have noted, the accuracy rate in both definite and indefinite echo contexts is markedly lower than in nonecho contexts. In order to understand the reasons for this, we take a closer look at the use of articles in echo contexts. First, we look at accuracy rates in the different categories in echo contexts (see Table 9). The lowest accuracy rates in the definite echo contexts are in categories D2 ('Immediate situation use'), where the accuracy is nil, and D4 ('Associative clause use'), where the accuracy is only 14.3%. The percentages are based on low numbers so we should be cautious in interpreting these figures, but it is perhaps not coincidental that both of these contexts are contexts where the recoverability of the information encoded in the article is high. In immediate situation uses, as we have seen, there are four NPs which can be appealed to with the use of the definite article as being 'given's of the situation: *the red pen*, *the blue pen*, *the ruler* and *the (piece of) paper*. In each case, the definite article is pragmatically redundant since reference to any of these four objects, with or without a definite or indefinite article, is sufficient in the context to identify it unambiguously.

Recall that category D4 (the 'associative clause' use) refers to the use of the article to modify the head NP in NPs where the head N is post-modified by a PP 'of' phrase, as in '*the* left-hand side of the paper', '*the* centre of the blue circle'. Here again, it is clear that the

**Table 9** Frequency distribution of NPs with and without articles in echo contexts (given as a frequency, with percentage in brackets)

|                                 | [– article] |         | [ + article] |        | Total |
|---------------------------------|-------------|---------|--------------|--------|-------|
| <i>Definite echo contexts</i>   |             |         |              |        |       |
| D1                              | 15          | (62.5)  | 9            | (37.5) | 24    |
| D2                              | 8           | (100.0) | –            |        | 8     |
| D3                              | 27          | (69.2)  | 12           | (30.8) | 39    |
| D4                              | 6           | (85.7)  | 1            | (14.3) | 7     |
| D5                              | 2           | (66.7)  | 1            | (33.3) | 3     |
| D6                              | 1           | (100.0) | –            |        | 1     |
| D7                              | –           |         | –            |        | –     |
| Total                           | 59          | (72.0)  | 23           | (28.0) | 82    |
| <i>Indefinite echo contexts</i> |             |         |              |        |       |
| I1                              | 5           | (62.5)  | 3            | (37.5) | 8     |
| I2                              | 25          | (61.0)  | 16           | (39.0) | 41    |
| I3                              | 3           | (100.0) | –            |        | 3     |
| Total                           | 33          | (63.5)  | 19           | (36.5) | 52    |

definite article is effectively redundant, since the information encoded by the article can easily be recovered from the context; the blue circle has only one centre and the paper has only one left-hand side.

The generalization that emerges from this discussion is that where the use of the definite article is pragmatically redundant, it is more likely to be omitted (cf. Littlewood, 1981; Tarone and Parrish, 1988). This is reminiscent of a general characteristic of so-called ‘discourse-oriented’ languages (Huang, 1982) such as Chinese, where subject and object pronouns can be omitted if they are pragmatically redundant, or, more formally, if they are coreferential with the topic (which may be overt or null). We suggest that this principle can be extended and generalized to include the use of determiners in noun phrases in the early interlanguage grammar: where the information encoded in the article of the native speaker’s grammar can be recovered from the context, the article may not be used in the interlanguage grammar. There is, however, one important difference between this principle and the operation of the rule of pro-drop in Chinese: where the criteria for use of the zero article are satisfied, article use remains possible rather than being prohibited. In other words, this is a dynamic principle of the interlanguage grammar, which in a given individual is subject to change under the influence of the linguistic and pragmatic context and of interlanguage development.

We look now at echo contexts from a pragmatic point of view.

In principle, there are four possible combinations of these two NPs with regard to article use:

- 1) neither speaker uses an article;
- 2) the first speaker doesn't use an article but the second speaker does;
- 3) the first speaker uses an article but the second doesn't; and
- 4) both speakers use an article.

The distribution of definite article contexts in these four combinations is shown in Table 10. Perhaps not surprisingly, the number of echo contexts where the speaker fails to use an article but the hearer does use one are virtually nil (only one example out of a total of 131 echo tokens). This particular example is, however, of some interest since it is an example of the persistence of article omission by one speaker in the face of what may be interpreted as 'repair' by the other speaker:

- 36) 66 A: ... in a, left hand side.  
 67 B: The left hand side.  
 68 A: Yeah, left hand side. And, er, the distance between blue square to red square is about five cm. And, er ...

The example suggests that Speaker A is particularly prone to omit the article because he persists in doing so even in the face of implicit

**Table 10** Distribution of definite and indefinite article echo contexts according to the use of articles by the Speaker and Hearer (given as frequency, with percentage in brackets)

| Speaker                            | [- article] | [- article] | [+ article] | [+ article] |       |
|------------------------------------|-------------|-------------|-------------|-------------|-------|
| Hearer                             | [- article] | [+ article] | [- article] | [+ article] | Total |
| <i>Definite article contexts</i>   |             |             |             |             |       |
| D1                                 | 6 (25.0)    | –           | 9 (37.5)    | 9 (37.5)    | 24    |
| D2                                 | 2 (25.0)    | –           | 6 (75.0)    | –           | 8     |
| D3                                 | 14 (35.9)   | 1 (2.6)     | 13 (33.3)   | 11 (28.2)   | 39    |
| D4                                 | 4 (57.1)    | –           | 2 (28.6)    | 1 (14.3)    | 7     |
| D5                                 | 2 (50.0)    | –           | –           | 2 (50.0)    | 4     |
| D6                                 | 1 (100.0)   | –           | –           | –           | 1     |
| Total                              | 29 (34.9)   | 1 (1.2)     | 30 (36.1)   | 23 (27.7)   | 83    |
| <i>Indefinite article contexts</i> |             |             |             |             |       |
| I1                                 | 1 (16.7)    | –           | 4 (66.7)    | 1 (16.7)    | 6     |
| I2                                 | 10 (25.6)   | –           | 15 (38.5)   | 14 (35.9)   | 39    |
| I3                                 | 1 (33.3)    | –           | 2 (66.7)    | –           | 3     |
| Total                              | 12 (25.0)   | –           | 21 (43.7)   | 15 (31.3)   | 48    |
| <i>Total for all contexts</i>      |             |             |             |             |       |
|                                    | 41 (31.3)   | 1 (0.8)     | 51 (38.9)   | 38 (29.0)   | 131   |

correction from Speaker B. This is confirmed by the fact that Speaker A has the lowest overall accuracy rate in non-echo contexts (at 67.4%) of all 18 speakers (see Table 7 above, page 154).

Consider now situations (1) and (4) above – situations that we might refer to as ‘genuine echo’ contexts, since both speakers either omit the article (situation (1) or use it (situation (4)). Situation (1) is of more interest, since the omission of articles is involved. The following are typical examples:

- 37) 10 B: Is top left, top right?  
 11 A: *Top right*.  
 12 B: Top right, but near the middle?
- 38) 58 B: A circle, a round circle.  
 59 A: Yeah, a circle.  
 60 B: Okay, is it . . .  
 61 A: Blue pen.  
 62 B: *Blue pen*. Is it big?  
 63 A: Yeah, its . . .
- 39) 11 A: But, er, the right, right + one, right line you should use blue pen and left, left line is red.  
 12 B: *Left line* is red?  
 13 A: Yes. Right triangle, but without bottom.

The point of interest in these examples is the possibility that the second speaker may be omitting the article as an act of accommodation to the speech of the first speaker (Beebe and Zuengler, 1983; Beebe and Giles, 1984). The most compelling evidence for such accommodation would be where the second speaker’s omission of the article was uncharacteristic. This is not in fact the case in either of these examples since all three speakers (Speaker A in example 37, Speaker B in example 38 and Speaker B in example 39) have low overall accuracy rates, so we have no basis on which to conclude that accommodation is a factor here; we leave this possibility open.

We turn now to situation (3), the most common echo situation, where the first speaker uses an article but the second speaker does not. The following examples are typical:

- 40) 5 A: Centre and top of the paper, er, you draw a triangle.  
 6 B: *Triangle*?  
 7 A: A big triangle. Us, using the blue pen.
- 41) 25 A: Inside the blue triangle, use, using the red pen.  
 26 B: *Red pen*. It’s opposite?  
 27 A: Yeah, opposite + + + + + +.

In example (40) Speaker A confirms Speaker B's query 'Triangle?' with the phrase 'A big triangle', using the indefinite article, as he had in his first mention of the NP. Here we see evidence that the choice as to whether to use an article may be influenced more by the individual speaker's interlanguage grammar than by interaction with the other speaker. Speaker A could have accommodated his speech in turn 7 to that of Speaker B, but he chose not to.

As a general hypothesis, we might suppose that in echo contexts there are three factors which, in combination, will influence the likelihood of whether the second speaker uses an article. First, there is the form of the NP used by the first speaker; second, there is the natural tendency in spoken interaction to accommodate to the speech of the interlocutor; and third, there is the strength of the article rule in the speaker's interlanguage grammar. We suggest that where a speaker has a categorical rule of article use in contexts requiring the use of an article, this will override the influence of the first two factors. If this suggestion is valid, then we may take it that in instances like example (40) above, where Speaker A persists in using the article in spite of Speaker B's omission of it, the speaker has a categorical rule for the use of the article in his interlanguage grammar. This supposition is confirmed by the fact that Speaker A has one of the highest accuracy rates (90.5%) of all 18 speakers; Speaker B, in contrast, has one of the lowest accuracy rates (69.6%). A corollary of this hypothesis is that where the speaker does not have a categorical rule of article use, the speaker's use of articles in echo contexts will be determined by the first two factors (as well as others unknown).

Consider now example (41), which is typical of the category of definite echo context. There is no question of accommodation here, but there may be factors relating to the interaction and the linguistic context. I suggest that where the first speaker in an echo context uses the article, the scope of the article extends to include the second mention of the article by the second speaker. This suggestion is reminiscent of the idea of the empty topic in Chinese. Where sentences have an empty topic, and the empty topic is coreferential with an object pronoun, the object pronoun can be omitted (Huang, 1982; Rizzi, 1986). Since the topic is a discourse feature, topic chains can be established across two or more turns, so the empty topic of one speaker can be coreferential with the overt topic supplied by an earlier speaker.

Analogously, I suggest that in the interlanguage grammar of Chinese learners of English, the scope of a determiner can extend across speakers to form a chain of coreferential NPs such that the determiner governs second and subsequent NPs in the chain if they

are coreferential with the NP at the head of the chain. By way of illustration, the following examples are typical:

- 42) 74 A: Okay. Finish it? Then, er, under *this blue square* . . .  
 75 B: Under *blue square*?  
 76 A: Yeah + + + + have, er, have four cm.
- 43) 25 A: Inside the blue triangle, use, using *the red pen*.  
 26 B: *Red pen*. It's opposite?  
 27 A: Yeah, opposite + + + + + +.

An interesting example, providing evidence of within-speaker variability, is where the second speaker omits the article in an echo but then immediately effects a self-repair:

- 44) 82 A: A line start from the centre of the blue circle.  
 83 B: *Centre? From the centre?*  
 84 A: Yes.

I have suggested that omission of the article in echo contexts may be systematic in the sense of being permitted by a discourse-based principle of 'determiner-drop', where the determiner of the second and subsequent NPs in a chain of coreferential NPs may be omitted because it is within the scope of the determiner governing the first NP. Further evidence in support of this idea comes from examples in the data where we find chains of coreferential NPs within one turn. In these data it is common to find that second and subsequent occurrences of coreferential NPs often lack articles where the first mention has an article. The examples below are representative:

- 45) 1 A: Woan Chin, now I want you to write a line, *horizontal line*, using the red + colour pen. A short horizontal line.
- 46) 7 A: You can ei, you can either wait to draw it, er, first you draw the short red line (yeah), *horizontal red line* . . .
- 47) 16 A: A straight line, *straight, horizontal line*.

Another apparently similar phenomenon is where, in a chain of coreferential NPs within one turn, the first NP does not have an article and the second and/or subsequent occurrences do. I would argue, however, that these cases are quite different. The second, correctly marked NP, is evidence for the operation of a 'self-repair' strategy operating in these learners. The following examples are typical:

- 48) 37 A: Between three number, this number and, er, square, *this square* . . .
- 49) 3 A: Yes. Top right corner + + under three, this number, have a + + blue colour square.  
 4 B: Blue?  
 5 A: Blue colour.  
 6 B: Blue colour square?  
 7 A: Yes, square. You, you need to draw *a square*.
- 50) 13 A: Middle. From *the middle*.
- 51) 16 A: Okay. Upper, up to red square (yes) three cm, then, then from *the red square* \* \* \* left hand side, the right hand side, right?
- 52) 25 B: With side, with side of, with, with *a side* of three centimetre.

These examples are evidence for within-speaker variability in the use of articles. We suggest, however, that this variability can be explained as being the result of a self-repair strategy. Note that these examples are also strongly suggestive of an accommodation strategy at work in some of these speakers. Example (49) provides what is perhaps the clearest evidence for this: Speaker A introduces the blue colour square with the existential ‘Have a blue colour square’, using the indefinite article correctly. Then in turn 7, she uses the bare noun ‘square’ in an echo context, perhaps under the influence of Speaker B, who omits the article. But A then picks up her own mistake and corrects it in her next utterance ‘You, you need to draw a square’.

#### 4 *Echo contexts: summary*

Recall that our strategy is to assume that article omission in these data is systematic, except where there is no evidence to support such an assumption. We have attempted to show that there are general principles at work in echo contexts which can be invoked to explain at least some of the article omissions in these contexts. The evidence suggests that there are three such principles:

- 1) a ‘pragmatic recoverability’ principle, to the effect that the article may be dropped if the information it encodes is recoverable from the context;
- 2) a linguistic ‘determiner drop’ principle, analogous to the ‘pro-drop’ principle, whereby the article may be dropped if it is within the scope of the determiner of an immediately preceding and coreferential NP; and



- 3) the familiar socio-pragmatic principle of accommodation in interaction.

All of these conditions may be invoked to explain instances of the omission of articles in echo contexts. As we have seen, the accuracy rate in echo contexts is markedly lower than it is in nonecho contexts, and it is perhaps not therefore surprising that we should have been able to find evidence of systematicity in the omission of articles in these contexts.

### 5 *Nonecho contexts*

We consider now the omission of articles in nonecho contexts, where the principles we have invoked above may not apply so readily. The distribution of NPs with and without articles in nonecho contexts is given in Table 11. First we note that the accuracy rates of Speaker and Hearer, for both definite and indefinite contexts, are comparable. The differences in rates are not statistically significant, and this provides additional evidence to confirm the hypothesis we mention above (subsection 1, 'Individual accuracy rates', above) that the frequency of article use is relatively stable within speakers and across pragmatic roles.

If we look at the distribution of tokens with and without articles in the definite contexts, we note that in fact the lowest accuracy rate occurs in category D2 'Immediate situation use' (i.e., references to NPs of which Speaker and Hearer have shared knowledge by virtue of what they know of the situation). We note that the accuracy rate for the Hearer is markedly lower (60%) than that for the Speaker (76.3%), and that the overall accuracy rate for this category (including Speaker and Hearer) is 73%, the lowest rate in the seven definite contexts. We suggest that the same principle of 'recoverability from context' is operating here that we noted with this category in the echo contexts. That is, given that mention of any of the four objects which constitute the mutual knowledge of the situation before the task begins is sufficient to identify the object, regardless of whether it is modified by an article or not, we can explain the low accuracy rate in this context as being due to the recoverability principle.

Once we have invoked this principle, however, there remains a substantial number of definite NP tokens without articles for which we are unable to offer a principled explanation. Excluding category D2, there are 92 such tokens in category D1, 65 in category D3, 32 in category D4 and 17 in the remaining D categories, making a total of 206 out of 1268 (a percentage of 16.2%). There appears to be no

straightforward explanation in terms of general linguistic principles that can account for these omissions.<sup>8</sup> The examples below will

**Table 11** Accuracy rates of speaker and hearer in nonecho contexts (given as frequency, with percentages in brackets)

|                            | Speaker       |               |       | Hearer       |               |       | Total         |                |       |
|----------------------------|---------------|---------------|-------|--------------|---------------|-------|---------------|----------------|-------|
|                            | [– art]       | [+ art]       | Total | [– art]      | [+ art]       | Total | [– art]       | [+ art]        | Total |
| <i>Definite contexts</i>   |               |               |       |              |               |       |               |                |       |
| D1                         | 76<br>(17.8)  | 351<br>(82.2) | 427   | 16<br>(11.7) | 121<br>(88.3) | 137   | 92<br>(16.3)  | 472<br>(83.7)  | 564   |
| D2                         | 14<br>(23.7)  | 45<br>(76.3)  | 59    | 6<br>(40.0)  | 9<br>(60.0)   | 15    | 20<br>(27.0)  | 54<br>(73.0)   | 74    |
| D3                         | 46<br>(15.6)  | 248<br>(84.4) | 294   | 19<br>(19.6) | 78<br>(80.4)  | 97    | 65<br>(16.6)  | 326<br>(83.4)  | 391   |
| D4                         | 24<br>(13.1)  | 159<br>(86.9) | 183   | 8<br>(21.1)  | 30<br>(78.9)  | 38    | 32<br>(14.5)  | 189<br>(85.5)  | 221   |
| D5                         | 9<br>(18.0)   | 41<br>(82.0)  | 50    | 5<br>(27.8)  | 13<br>(72.2)  | 18    | 14<br>(20.6)  | 54<br>(79.4)   | 68    |
| D6                         | 3<br>(25.0)   | 9<br>(75.0)   | 12    | –            | 3<br>(100.0)  | 3     | 3<br>(20.0)   | 12<br>(80.0)   | 15    |
| D7                         | –             | 7<br>(100.0)  | 7     | –            | 2<br>(100.0)  | 2     | –             | 9<br>(100.0)   | 9     |
| Total                      | 172<br>(16.7) | 860<br>(83.3) | 1032  | 54<br>(17.4) | 256<br>(82.6) | 310   | 226<br>(16.8) | 1116<br>(83.2) | 1342  |
| <i>Indefinite contexts</i> |               |               |       |              |               |       |               |                |       |
| I1                         | 2<br>(4.9)    | 39<br>(95.1)  | 41    | 3<br>(37.5)  | 5<br>(62.5)   | 8     | 5<br>(10.2)   | 44<br>(89.8)   | 49    |
| I2                         | 46<br>(23.8)  | 147<br>(76.2) | 193   | 10<br>(20.4) | 39<br>(79.6)  | 49    | 56<br>(23.1)  | 186<br>(76.9)  | 242   |
| I3                         | 10<br>(40.0)  | 15<br>(60.0)  | 25    | –            | 5<br>(100.0)  | 5     | 10<br>(33.3)  | 20<br>(66.7)   | 30    |
| Total                      | 58<br>(22.3)  | 201<br>(77.6) | 259   | 13<br>(21.0) | 49<br>(79.0)  | 62    | 71<br>(22.1)  | 250<br>(77.9)  | 321   |

<sup>8</sup> A reviewer suggests, in relation to this passage and elsewhere, that the comparative fallacy (Bley-Vroman, 1983) is being committed. It is true that the analytic strategy we have adopted in this article has been to assume that what needs to be explained was not the Chinese learners' use of the article, but rather their failure to use it. This has been the basis of the charge of having committed the comparative fallacy. However, the evidence shows quite clearly that these learners already know that English noun phrases require articles in many contexts, and that they use the articles in all contexts with an accuracy rate of between 67 and 97%. There is therefore no justification for assuming, as the reviewer suggests, that these learners have a grammar which assumes no articles. Whatever is assumed about the status of articles in the interlanguage grammar, there is evidence of unsystematic variability in some contexts. Where articles are used (correctly) in these contexts, the explanation is straightforward, since there is plenty of positive evidence in the input for the occurrence of articles in English; it is therefore the omission of articles in these same contexts that requires explanation, and which provides evidence for optionality. The strength of the defence against the charge of having committed the comparative fallacy rests on the strength of the evidence for unsystematic variability in the grammar.

illustrate the difficulty of supplying explanations for these omissions:

- 53) 11 A: But, er, the right, right + one, right line, you should use blue pen and *left*, *left line* is red.  
 12 B: Left line is red?  
 13 A: Yes. *Right triangle*, but without *bottom*.
- 54) 115 B: So *distance* from the:: left side, left line of, er . . .
- 55) 53 A: When you draw, you touch the centre of *triangle*, draw two circle.
- 56) 129 A: The, the, the, the centre point of (yeah) this, this, er, red circle is about, erm, five, five cm to each side of *blue line*.

We are not able to identify any systematicity in the patterns of non-suppliance of articles in these examples, and we conclude that these examples provide the strongest evidence for non-systematic variability in the use of articles by these learners. The explanation which we favour for the lack of systematicity in the use of articles in these examples is very much in line with the proposals of Haznedar and Schwartz (1997), Lardiere (1998) and Prévost and White (this issue), namely that these learners are having difficulty mapping the surface forms (*the*, *a* and the zero article  $\emptyset$ ) onto the abstract features of the DP ( $[\pm \text{number}]$ ,  $[\pm \text{definite}]$ ). The article system is a notorious source of difficulty to all non-native speakers of English, largely because it is based on a complex set of abstract distinctions which are, to some extent, arbitrarily mapped on to the surface forms. It is not therefore surprising that we should find some evidence of failure to acquire this complex mapping in our subjects.

## 6 Indefinite *nonecho* contexts

We consider now the distribution of articles in indefinite *nonecho* contexts (see Table 11). We note first of all that the highest accuracy rate (95.1%) is in the existential sentences. The following examples are illustrative:

- 57) 4 B: Top centre, top centre, okay.  
 5 A: *There's a circle*.
- 58) 2 B: Top right?  
 3 A: Yes. Top right corner + + under three, this number, *have a + + blue colour square*.

- 59) 93 B: Finished.  
94 A: Okay. Then + + + mm, then you have a point, *have a point* at, er, er, okay, then you have a point up to the red square.
- 60) 79 B: Under, under the s . . .  
80 A: Under the square.  
81 B: . . . *has a, has a, one line.*  
82 A: Yeah, one line.

As Table 10 makes clear, there are only 5 omissions of articles in a total of 49 nonecho existential contexts. We can invoke our ‘recoverability principle’ to account for this high accuracy rate. The NP introduced by an existential sentence is, by definition, a new entity in the universe of discourse which has had no prior mention and which the hearer has no prior knowledge of. In such cases the indefinite article carries important pragmatic information which the recoverability principle suggests must result in a low probability of the article being omitted.

These existential sentences are of interest for a number of reasons. First, as we have already indicated, the English verb 'have' tends to be used by Chinese learners of English to express an existential predication, reflecting the fact that the word for 'exist' and 'have' are the same in Chinese (*yǒu*). Secondly, as example (60) shows, there is a tendency to use the numeral 'one' as a determiner where an English native speaker would use the indefinite article. As we have noted (page 144), there is evidence that Chinese is beginning to acquire a system of articles, with the demonstratives *zhèi* 'this' and *nèi* 'that' taking on some of the functions of *the* in English (Huang, 1999), and the numeral *yī* 'one' taking on some of the functions of the indefinite article in English. This tendency is clearly in evidence in the interlanguage of these learners, where we have examples of demonstratives *this*, *that*, *these* and *those* used in contexts where a native speaker of English would use a definite article. The following examples are illustrative of this use of demonstratives:

- 61) 12 B: What does square draw like?  
13 A: Like a book. How you, er + + + + + + + + + + + + + +  
+ + + *this square, this square* line is, er, you look from, from the  
sky view, you know, just a square line.
- 62) 23 A: *This square size* is eight cm, er . . .
- 63) 74 A: Okay. Finish it? Then, er, under *this blue square* . . .  
75 B: Under blue square?

- 64) 29 B: Sorry, I don't understand.  
 30 A: Erm . . . , okay. Er, there's a, in *this triangle*, there's a + in the two,  
 two line, two . . . you know, er, this triangle . . .

And the following illustrate the use of one as a marker of indefiniteness:

- 65) 42 B: Okay. And then?  
 43 A: And then, er, you write, you draw *one circle*, a big circle . . .
- 66) 4 A: Then, on top they got *one* 'A'.
- 67) 51 A: So what you are supposed to have overall, you are supposed to  
 have a letter three at the top right hand corner. *One line* . . .  
 52 B: One line . . .  
 53 A: . . . followed by *one square box* (box), followed by *one line*.  
 54 B: *One line*, yeah.

There is one very common context where the article is omitted which may be susceptible of explanation using the principle of discourse scope that we invoked earlier. We have suggested that the scope of a determiner, or more particularly of a definite or indefinite article, may extend beyond the noun which it is most immediately modifying to include subsequent nouns which are coreferential and which are not part of a different predication. We invoked this principle to account for the omission of articles in echo contexts, but the principle may apply equally to omission of articles within one turn. The following examples are clear illustrations of the point:

- 68) 1 A: Woan Chin, now I want you to write a line, *horizontal line*, using the red + colour pen. A short horizontal line.
- 69) 35 A: The, the lines connect to the, er, connect to the right, right hand side + + + + *right hand side* of the, the rectangular box, the red box.
- 70) 41 A: After the small rectangular, draw an 'L', *equal* 'L'.

It is debatable whether these examples should be treated as examples where the article is omitted, since it is conceivable that a native speaker would omit the article also in such contexts. Ideally we should have native speaker data with which to compare the data that we have so as to settle this point, but since this is not available we have to rely on our judgement. Intuition suggests that a native speaker would not have omitted the article in any of these three contexts (given in italics in the examples above), except perhaps for

example (69). Given this uncertainty, it is not clear whether omission of the article in contexts such as these should be counted as a feature of the interlanguage or whether it is a natural feature of the interaction.

## VII Summary and conclusions

Recall that our strategy in the analysis was to search for evidence of systematicity in the data and to account for this systematicity by appeal to general linguistic principles; whatever residual optimality was left unexplained would then be ascribed to indeterminacy in the interlanguage grammar. If our analysis is on the right lines, we have identified three principles that can be used to explain the omission of articles by these learners. First, we have identified a syntactic principle of ‘determiner drop’, analogous to ‘pro-drop’, whereby an NP with definite or indefinite reference need not be overtly marked for [ $\pm$  definiteness] if it is included in the scope of the determiner of a preceding NP. We noted that this ‘extended determiner scope’ condition is satisfied if the second NP (and subsequent NPs) in the chain are coreferential with the head NP of the chain and if they are part of the same predication. We also noted that in our data this condition is satisfied both within turns and across turn boundaries.

Secondly, we have made use of a ‘recoverability’ principle, the pragmatic equivalent of the ‘determiner drop’ principle, whereby an NP need not be marked for [ $\pm$  definiteness] if the information encoded in this feature is recoverable from the context. Thirdly, we have identified a ‘lexical transfer principle’, whereby some of these learners are using demonstratives (particularly *this*) and the numeral *one* as markers of definiteness and indefiniteness respectively, i.e., they are using these words to perform the function of marking definiteness and indefiniteness which the equivalent words (*zhèi* ‘this’, *nèi* ‘that’ and *yì* ‘one’) perform in Chinese.

We can attempt to unify these principles under the umbrella of a ‘remapping’ principle, whereby all of these principles can be seen as reflexes of the need for the Chinese learner of English to move from a grammar which is ‘discourse-oriented’ to one which is ‘syntax-oriented’. The distinctive characteristic of a discourse-oriented grammar is that grammatical features (definiteness, person, number and tense) are not marked through the use of overt morphosyntactic features unless the information carried by these features cannot be recovered from the context. In a syntax-oriented language like English, in contrast, these grammatical features must

receive overt morphosyntactic realization, whether the information conveyed by these features is recoverable from the context or not.

The task for the Chinese learner of English, then, is to learn that many of the grammatical features which are absent from his or her language are obligatory in English, and to effect an adjustment of the mapping between these semantic and pragmatic features and the syntactic and lexical resources of the target language. This is precisely what happens under the process of grammaticalization, and it should not surprise us that interlanguage development mimics processes which are well documented in the diachronic literature. Grammaticalization and interlanguage development are both constrained by Universal Grammar, and they are both subject to variability within these constraints. Fundamental to an understanding of the similarities between interlanguage development and diachronic change is a recognition that the mapping between semantic and pragmatic features and the syntactic and lexical resources of any particular language is subject to variability. It is this inherent variability in the mapping between meaning and form which is exploited in such strikingly similar ways in interlanguage development and diachronic change.

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