

A Preliminary Study of Acquisition of English DP by Chinese EFL Learners in Taiwan

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Abstract

We explored the interlanguage variations and development by Chinese EFL learners of their acquisition of determiner phrases (DP) in the argument position in an English sentence of four types – definite, specific, indefinite and generic references. Ninety subjects, classified according to their proficiency in English at four levels based on their duration of learning English, participated in this project. They were guided to complete a task of inserting a DP into a sentence, and data were then gathered for quantitative analysis. According to a cross-linguistic comparison of the reference systems and their representations in these two languages, we found that acquisition errors basically derive initially from the discrepant representing systems between the languages, and from a lack of attention to the contextual information and requirement of syntactic agreement in the target language in subsequent stages. Interlanguage development reveals that L1 transfer exists at the initial stage and gradually shifts to development errors such as overuse of articles *a* and *the*. The order of acquisition of DP of the four types is roughly definite > [signifying before] specific > indefinite > generic; this acquisition follows an ascending curve rising steeply at the beginning and then gradually leveling.

Keywords: DP acquisition, argument, definiteness, referential system, article

1 Introduction

Much evidence indicates that Chinese learners have problems with English articles; these difficulties might derive from the fact that the Chinese language lacks functional equivalents of English definite and indefinite articles. By clarifying the distinctions of the reference systems and the types of determiners in the argument determiner phrases (DP) of the two languages, we might improve recognition of and predict precisely the causes of errors that learners make, and subsequently discover a solution to aid Chinese learners with English argument DP.

Most preceding researchers attributed the learning problems of Chinese learners to the lack of articles in the Chinese linguistic system, and suggested that bare nouns are thus wrongly utilized in DP of other references. Observations of interlanguage development by Chinese learners reveal, however, that, in addition to the errors of a bare noun phrase (NP), errors arise of other types such as an incorrect exchange of two articles – that is, *a* for *the* or *the* for *a* – and the overuse of articles, especially definite article *the*. How can one take account of these errors if errors are mainly from the absence of articles in Chinese?

Similarly to English, Chinese argument DP have four references -- definite, indefinite, specific and generic. As these references are universal and necessary in linguistic systems, the cause of learning errors might be not necessarily the lack of articles in the target language but something more conceptual. In this project we sought to inquire into the reference systems and their forms of representation in Chinese and English, for the purpose of a cross-linguistic comparison of basic views regarding the various DP.

Our objective was to probe the interlanguage variations and development by Chinese L2 learners of the use of English articles in referring to argument DP in a sentence, and to investigate whether the varied uses are systematic, the causes of the variations, and whether their performance in use of English articles increases and improves with their level of proficiency.

The nominal phrase in sentences was recognized as a noun phrase (NP) until Longobardi (1994) proposed that referential NP in sentences are determiner phrases (DP) in all languages. The determiner head such as English articles takes a NP as its complement and by so doing specifies its reference type and thus decides the referent of the NP in the discourse. In this study, we regard all nominal arguments in English to be DP and aim to diagnose how Chinese EFL learners distinguish an English DP in relation to its articles. Demonstratives such as *this* and *that*, or possessives such as *my* and *John's* are also determiners, and are associated with the definite reference. Since the semantics and obvious definiteness of these determiners make the DP reference transparent and thus would not be too difficult for L2 learners, DP of these types are

excluded from the current work, of which the focus is mainly on English articles, including the zero article \emptyset , before the NP in interpreting the English DP types.

2 Literature Review

2.1 English reference system

The system of articles in English is deemed a major difficulty for an ESL/EFL learner, especially one whose native language employs no article or article-like morpheme, such as Mandarin Chinese (Bataineh, 2005). Because the Chinese language lacks functional equivalents of English definite and indefinite articles, much observational evidence shows that Chinese learners have difficulty with the article system in English. In particular, Robertson (2000) found that these learners have a marked tendency to omit an article in instances in which a native speaker of English would use one. Researchers (Master, 1997; Parrish, 1987; Ekiert, 2004) reported that, for learners whose native languages lack articles, the zero article typically dominates in all environments for articles at the initial stages of language learning. Parrish (1987) observed that the order of acquisition of English articles is the zero article, the definite article, and the indefinite article consecutively. Butler (2002) claimed that part of the complexity of use of articles in English might be attributed to the fact that the system of English articles does not consist of one-to-one relations between form and meaning; this complexity poses multiple challenges for L2 learners of English.

Several authors (Huebner, 1985; Parrish, 1987; Thomas, 1989; Chaudron and Parker, 1990) found an overuse of the definite article by L2 learners, but learners of greater proficiency improved in accuracy with indefinite *a*. Although both Master (1997) and Huebner (1983) referred to a phenomenon ‘*the*-flooding’ in which *the* is overgeneralized with a greatly increased usage, Thomas (1989) found that the *zero* article overgeneralized across proficiency levels (Bataineh, 2005).

The use of an article is determined by the category of the NP that accepts it. In his model of a semantic wheel, Huebner (1983, 1985) classified English NP according to two features of referentiality—a specific reference [+/-SR] and a hearer’s knowledge [+/-HK]. These two aspects of referentiality thus produce four basic NP contexts that determine the use of an article. According to their findings of the overuse of *the*, Huebner (1983, 1985) and Master (1987, 1988) suggested that L2 learners initially might associate *the* with feature [+HK], whereas Thomas (1989) proposed that L2 learners associate *the* initially with feature [+SR] (Butler, 2002).

In addition to the binary features of referentiality, noun countability is suggested to be an important component in determining which article to use. The failure to detect successfully the countability of a reference has been found also to be a major

problem for some L2 learners (Butler, 2002). Celce-Murcia and Larsen-Freeman (1999) claimed that problems of the use of articles lie partly in the non-corresponding countability of lexical classification between the native and target languages. This mismatch might add to the complexity of the learner's task, for he or she must learn both the article system and other noun distinctions (Bataineh, 2005).

In contrast with the above researchers, Hakuta (1976), in observing L1 Japanese young learners acquiring L2 English, adopted Brown's method of analysis: one category for articles (making no distinction between definite, indefinite and zero), but, in addition, a separate score for what he called errors of commission (supplying articles in nonobligatory contexts), as opposed to errors of omission (not supplying articles in obligatory contexts). In his analysis he found errors of commission to be preponderant. This finding indicates that a learner might recognize the form of an article before recognizing its function (Parrish, 1987).

2.2 Chinese reference system

Mandarin is a language oriented to topics. A sentence comprises two parts – topic and comment, rather than subject and predicate as in English. 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. Topics (or subjects) are thus invariably not indefinite. Li and Thompson (1981) stated that definiteness of NP in Chinese is marked in the noun phrase, and its markedness is manifested through the use of word order or demonstratives (Robertson, 2000). These authors claimed that definiteness is partially signaled by the preverbal position of topics, subjects and sometimes objects. Because topics must not be indefinite, they are invariably preverbal, but subjects and objects might be either pre- or post-verbal. Hsin (2002, 2003) and Tsai (2001) recorded similar observations about the specificity of subjects and preverbal objects.

The notion of definiteness involves the notion of reference. According to Li and Thompson (1981), a NP might be either referential or non-referential.¹ A noun phrase is referential when it is used to refer to an entity that might be physical or conceptual, real or hypothetical, singular or plural. Only referential nouns can be definite or indefinite. This situation is depicted in the diagram of Fig 1.

Based on Li and Thompson, nonreferential NP can occur in several sentence positions in Chinese: object of a verb as in (1a), object component of a verb-object compound as in (1b), noun complement of a copula verb as in (1c), NP within the

¹ Nominal phrases in a sentence were previously all referred to as noun phrases, but based on Longobardi's (1994) work, argument NP with reference are DP in nature; the NP mentioned by Li and Thompson are hence what we call DP.

scope of a negation as in (1d), or NP in the topic position as in (1e). A definite NP is generally preceded by a demonstrative and a quantifier phrase with classifier as in (2a) or is simply a bare N as in (2b). The indefinite NP can be a bare N as in (3a) or a quantifier phrase with classifier as in (3b) or a bare N preceded by an existential *you* in the subject position as in (3c).

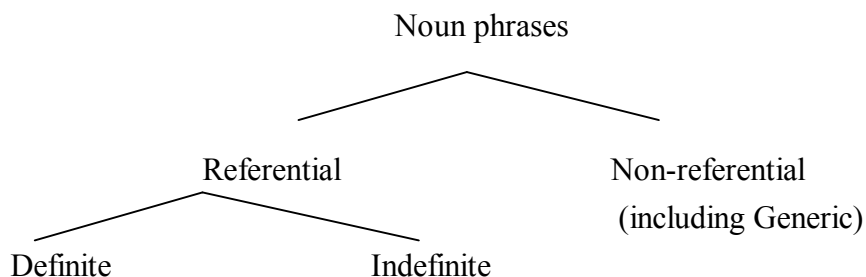


Figure 1. Referential categorizations of NP by Li and Thompson (1981:129)

- 1a. wo²¹⁴men⁰ zhong⁵¹ hua⁵⁵-sheng⁵⁵. (object of a verb)
 we grow peanut
 We grow peanuts.
- 1b. ta⁵⁵ hui⁵¹ chang⁵¹-ge⁵⁵. (object of a V-O compound)
 he can sing-song
 He can sing.
- 1c. Xin⁵¹mei²¹⁴ shi⁵¹ gong⁵⁵cheng³⁵shi⁵⁵. (N complement of a copula)
 Xinmei (name) be engineer
 Xinmei is an engineer.
- 1d. Wo²¹⁴ mei³⁵ jian⁵¹-guo⁵¹ jing⁵⁵yu³⁵. (NP within the scope of a negation)
 I not see-EXP whale
 I have never seen a whale.
- 1e. mao⁵⁵ xi²¹⁴-huan⁵⁵ he⁵⁵ niu³⁵nai²¹⁴. (Topic NP as Generic reading)
 cat like drink milk
 Cats like to drink milk.
- 2a. zhei⁵¹-(san⁵⁵)-tiao³⁵ xiang⁵⁵jiao⁵⁵ wo²¹⁴ chi⁵⁵-bu³⁵-xia⁵¹. (demonstrative+NumP)
 this-(three)-CL banana I eat-not-descend
 This banana I can't eat./ I can't eat this banana.
- 2b. xiang⁵⁵jiao⁵⁵ lan⁵¹-diao⁵¹ le⁰. (bare N)
 banana rotten-PHASE particle.
 The banana is rotten already.

- 3a. wo₂₁₄ mai₂₁₄-le₀ shui₂₁₄guo₂₁₄ le₀. (bare N)
 I buy-PFV fruit CRS
 I have bought some fruit.
- 3b. ta₅₅ zhong₅₁-le₀ yi₅₁-ke₅₅ shu₅₁ zai₅₁ men₃₅-kou₂₁₄. (NumP)
 he plant-PFV one-CL tree at door-mouth
 He planted a tree at the door.
- 3c. you₂₁₄ ren₃₅ gei₂₁₄ ni₂₁₄ da₂₁₄-dian₅₁hua₅₁. (you+bare N)
 exist person to you hit-telephone.
 Someone telephoned you.

As Li and Thompson did not distinguish specific from indefinite NP, Tang (1988b) added a further classification of noun phrases: he categorized a NP as determinate or indeterminate. A determinate noun phrase is further classified into three types --definite, generic and specific. A determinate NP refers to old information that can be a topic, whereas an indeterminate NP refers to new information that can be no topic. This situation is depicted as follows in Figure 2. The purpose of such distinction has a reason. A specific NP with a structure you+NumP can, whereas an indefinite NP with a structure you+N can not, appear as the topic of a Chinese sentence, as illustrated in (4). Moreover, the generic NP is not totally non-referential but determinate in some way, as the generic NP can appear in the topic and subject positions, which are normally only for referential and definite NPs in Chinese.

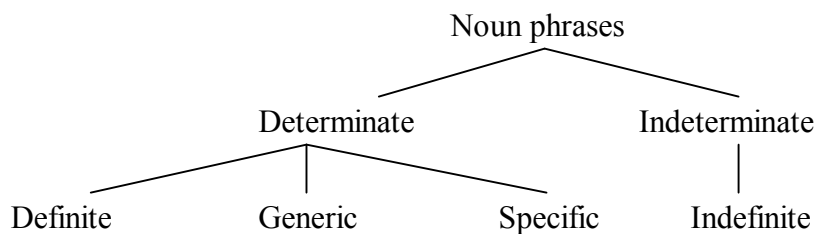


Figure 2. Referential system of NP by Tang (1988b)

- 4a. you₂₁₄ yi₃₅-wei₅₁ zuo₅₁jia₅₅, wo₂₁₄men₀ dou₅₅ hen₂₁₄ xi₂₁₄huan₅₅
 exist one-CL writer we DIS very like
 One writer, we are all very fond of.
- 4b. *you₂₁₄ zuo₅₁-jia₅₅, wo₂₁₄men₀ dou₅₅ hen₂₁₄ xi₂₁₄-huan₅₅
 exist writer we DIS very like
 (*There is/are writer(s), we are all very fond of.)

2.3 Cross-linguistic comparison between Chinese and English

Longobardi (1994) proposed that every NP in the argument position in a sentence is a DP. The reference types are basically similar universally. In this research, I adopted Huebner's model to classify English argument DP in various contexts and Tang's (1988a) model to classify Chinese DP; I then undertook some adjustment to create a corresponding usage between English and Chinese in the four specified NP environments. Through such a comparison, we improve our perception of how the languages differ in their referential system and the expressions of argument DP.

Table 1 below presents a cross-linguistic contrast between English and Chinese of the possible forms of argument DP in a sentence. In both languages, the referential system and the argument DP forms display relations of one to many and many to one. For instance, in English, the generic reference is expressible by DPs of four forms – a N, the N, Ns[C] and bare N[U] – and concurrently the 'a N' form serves to display generic, specific and indefinite references. Chinese has similar situations. A bare N has the most prevalent use and serves to express generic, definite and indefinite references. At the same time, a specific reference can be represented by a NP in two forms – 'Num+Cl+N' (i.e. NumP) in a postverbal situation and 'you Num+Cl+N' in a preverbal situation. The distinction between definite and non-definite in the referential system and the corresponding argument DP forms are cognitively similar in the two languages: both use determiners plus nouns (Chinese with additional classifiers before nouns) to refer to definite entities, and plural nouns or indefinite article *a* plus noun (Chinese with the classifier and the empty number *one* before nouns) to refer to indefinite entities. Furthermore, the semantic association between specific and indefinite references and their similar syntactic DP forms are alike in both systems, but the two languages use separate means to clarify the ambiguities of one to many and many to one. In Chinese, one tries to make the reference form a one-to-one relation in using the sentence positions, such as preverbal and postverbal, and by using sentences of separate types, such as stative and eventive. In contrast, in English one uses a more semantic way, which thus becomes confusing for a Chinese EFL/ESL learner. At the initial stage such a learner might overuse English bare nouns in improper sentence positions for definite or indefinite references; errors of this type gradually diminish with the input of positive evidence from increasing English exposure. A more advanced Chinese EFL/ESL learner might confront a problem of which form to choose between two forms *Ns* and *a N* for specific or indefinite reference and among three forms *Ns*, *a N* and *the N* for generic reference.

In this project we sought to explore the most prevalent article errors and the interlanguage variations in English argument DP acquisition for Chinese EFL/ESL learners. Our research questions follow.

Table 1: Comparison of forms of argument NP between English and Chinese in four contexts

Type	Feature	Mandarin	English
1. Generic	[-SR, +HK]	1. bare N	1. a N[C] 2. the N[C] 3. Ns[C] 4. bare N[U];
2. Definite	[+SR, +HK]	1. bare N, 2. Det+Num+Cl+N	1. Det N
3. Specific	[+SR, -HK]	1. Postverbal: Num+Cl+N 2. Preverbal: <i>you</i> +Num+Cl+N	1. a N[C] 2. Ns[C] 3. bare N[U];
4. Indefinite/ Indeterminate	[-SR, -HK]	1. Postverbal: bare N; (one)+Cl+N 2. Preverbal: <i>you</i> +bare N	1. a N[C] 2. Ns[C] 3. bare N[U];

N: noun

SR: specific reference

[U]: non-count noun

Det: determiner

Num: number

Ns: plural noun

HK: hearer's knowledge

[C]: count noun

Cl: classifier

you: existential verb *have*

1. Does the interlanguage vary without a pattern, or does it improve gradually with the level of English proficiency of subjects?

We expect learners to improve as their general English proficiency increases, but we intend to know whether the improvement arises from general accuracy of all DPs or from corrections of DP of one or two particular types.

2. Among DP of four types, what is the order of acquisition for Chinese EFL learners?

We propose the order of acquisition to be somewhat like definite >(before) generic > indefinite > specific. Based on Huebner's binary system, [+SR, +HK] is most salient, and there is only one form *the* for definite DP in English (other determiners such as demonstratives and possessives are not considered here); a definite DP is thus expected to be acquired first. A generic DP with [-SR, +HK] is next, as a hearer's knowledge is conceptually clearer than specific reference and a generic DP with +HK, though -SR, should be easier to acquire. In addition, four

forms are available in English, which seems to imply that whatever form one chooses is correct. Indefinite and specific DPs are indecisive because they are similar in semantics and because both have three varied forms in English. Even so, we predict an indefinite DP to be more easily acquired than a specific DP because an indefinite DP with [-SR, -HK] is conceptually universal and the forms are related to numbers or indefinite markers such as English *a* across languages.

3. What are the errors of common types for Chinese learners and what are the causes?

As English is an article language and Chinese a classifier language, the function of DP might be manifested in two distinct conceptual systems; Chinese EFL learners might be able to use the forms but might still not quite understand the underlying functions of English articles. If Chinese nouns are all countable mass nouns as Cheng and Sybesma (1999) propose, the countability of English nouns would be a major problem for Chinese learners and thus a cause of errors to distinguish DP types as singular vs. plural is the main distinction in DP forms in English.

4. Do beginning learners and advanced learners have disparate error patterns? If so, how do the error patterns differ?

As L1 transfer is unavoidable in adult L2 acquisition, we expect errors of negative L1 transfer common for beginning learners and that is bare N for definite and indefinite DPs. For more advanced learners, overgeneralization and analogy might be useful learning strategies; such Chinese learners might overuse articles, either definite *the* or indefinite *a*, as they might overgeneralize that every DP needs an article in an article language such as English.

3 Method

3.1 Subjects

In total, ninety students participated in this project; they constitute four proficiency groups based on their lengths of learning English. Group 1 (G1), having the greatest proficiency, comprised eight graduate students with English as major subject. Group 2 (G2) comprised eighteen college students of third year, whose major subject was other than English but who studied English as their second professional specialty. Group 3 (G3) comprised thirty-one pupils in the second year of senior high school. Group 4 was composed of thirty-two pupils in second year of junior high school.

3.2 Procedures

In a questionnaire (see Appendix I) containing sixteen English sentences, four questions of each DP type were listed. All 90 subjects were asked to complete the DP

test without Chinese translation. In the questionnaire, the head nouns were given within parentheses as the only clue to the answers. Each participant was asked to insert either a bare NP (singular or plural) or a noun with an appropriate article based on his or her own knowledge of English. To prevent fortuitous guesses, the participants were required also to provide grammatical information appropriate to the situation. For instance, if the required NP were the subject of a sentence in present tense, a participant had also to circle the corresponding verb between two options provided.

The data gathered from the questionnaire were graded either correct or incorrect, corresponding to values 1 and 0, respectively, in the statistics software (SPSS). A statistical comparison of acquisition of English articles among the four Chinese L2 groups was conducted to discover whether significant differences exist among the groups of English proficiency at various levels.

4 Results and Data Analysis

We present the results of the experiment and base our discussion on the order of the research questions presented at the end of section two.

4.1 Interlanguage variation and performance among four groups

The performance results on the DP test by four groups with varied English proficiency are shown in Figure 3. The average test scores increase with the proficiency of English of the subjects: the graduate group had an accuracy rate 88.45%, the undergraduate group 74.225%, the senior high-school group 56.425%, and the junior high-school group 38.175%. Although the improvement intervals seem almost equal, we conducted a statistical comparison among the four groups with varied English proficiency at varied levels; the results are illustrated in Table 2. The discrepancies among the four groups are all significant except between graduate and undergraduate groups. The performance difference between students of junior and senior high schools also attained a significance level 0.05. These observations exhibit that article acquisition has the greatest improvement between junior and senior high-school years, then gradually levels off to an insignificant difference from undergraduate to graduate years.

Table 3 shows the mean scores of the four subject groups in the four DP types. The definite and specific DPs began with a high score, as indicated in G4-definite 0.406 and G4-specific 0.461. As both definite and specific DP are [+SR], this result might indicate that a DP with a specific reference is easier for Chinese EFL learners initially, but definite and indefinite DP had a high score at the final stage, as indicated in G1-definite 0.983 and G1-indefinite 0.906. The improvement of DP acquisitions is

unequal among the four types and the major improvements lie mainly on the great leaps of definite DP (0.577) and indefinite DP (0.617), as indicated by the differences between G1 and G4 in the two categories in Table 3.

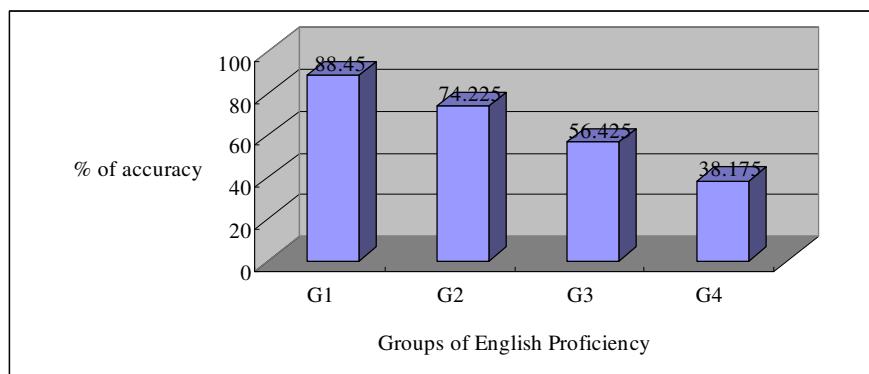


Figure 3: Rate of Accuracy of Subjects in Four Groups

Table 2: Statistical Comparisons between Subjects in Four Groups

Multiple Comparisons

Dependent Variable: general article performance
Scheffe

(I) subject level	(J) subject level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
graduate	undergraduate	.5493	.3513	.489	-.4524	1.5511
	senior high	1.3044*	.3305	.002	.3619	2.2470
	junior high	2.0820*	.3295	.000	1.1425	3.0216
undergraduate	graduate	-.5493	.3513	.489	-1.5511	.4524
	senior high	.7551*	.2429	.027	6.257E-02	1.4476
	junior high	1.5327*	.2414	.000	.8443	2.2211
senior high	graduate	-1.3044*	.3305	.002	-2.2470	-.3619
	undergraduate	-.7551*	.2429	.027	-1.4476	-6.2565E-02
	junior high	.7776*	.2101	.005	.1786	1.3766
junior high	graduate	-2.0820*	.3295	.000	-3.0216	-1.1425
	undergraduate	-1.5327*	.2414	.000	-2.2211	-.8443
	senior high	-.7776*	.2101	.005	-1.3766	-.1786

Based on observed means.

*. The mean difference is significant at the .05 level.

Table 3. Means of Four Groups in Four DP types

Group	Gen	Def	Spe	Ind	Total
G1	0.813	0.983	0.881	0.906	0.88
G2	0.684	0.763	0.759	0.763	0.74
G3	0.508	0.661	0.556	0.532	0.56
G4	0.371	0.406	0.461	0.289	0.38
Improvement G1-G4	0.442	0.577	0.42	0.617	0.50

4.2 Order of acquisition of four DP types

Among the DP environments of four types, the similarity in language use between English and Chinese varies. The differences in order of acquisition order are shown in Figure 4.

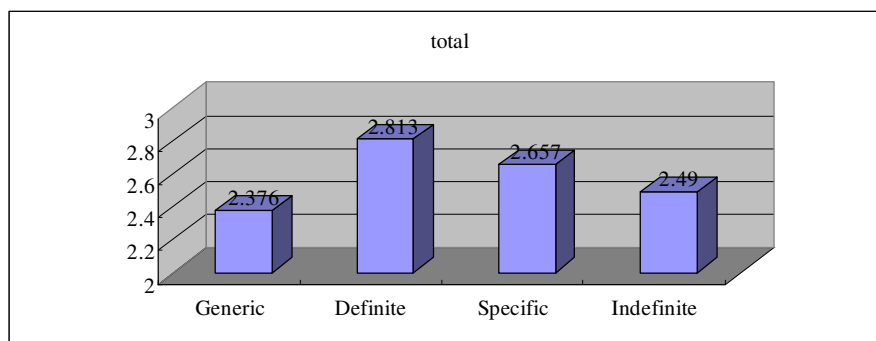


Figure 4: Total Accuracy in DP Contexts of Four Types

Based on the mean accuracy of DP of four types, subjects fared best in the definite type, followed by the specific, the indefinite, and last – to our astonishment – the generic type; that is Def > Spec > Ind > Gen in order of acquisition, with “>” denoting “has a greater rate of accuracy” or “before.” Not all four subject groups, however, follow this order. The varied orders of acquisition for the four groups are listed in Table 4.

Table 4: Order of Acquisition in Four Groups

Group	Order of acquisition of DP of four types
G1	Def > Ind > Spe > Gen
G2	Def > Ind = Spe > Gen
G3	Def > Spe > Ind > Gen
G4	Spe > Def > Gen > Ind

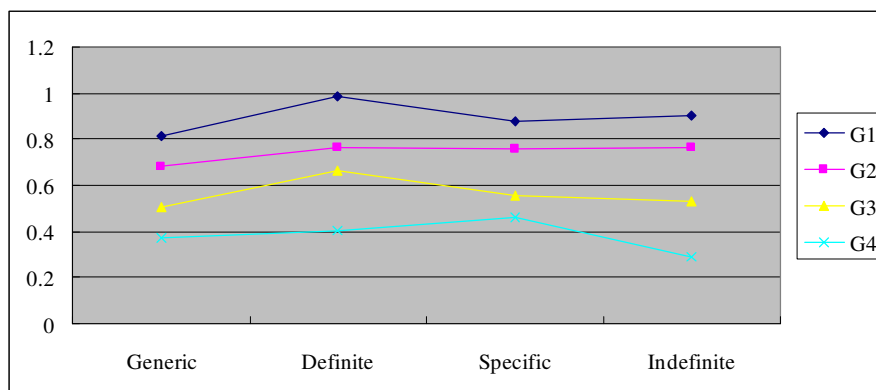
“>” denotes “has a greater rate of accuracy than”

The order patterns for G1, G2 and G3 are similar, with a difference only in the order of specific and indefinite DP. G4 shows a dissimilar pattern, with the specific DP best and indefinite DP worst. We might thus assume that G4 is the initial state and G1-3 attain a stable state in acquiring articles. A careful observation of this interlanguage development reveals also that the learning of indefinite DP has the greatest advance, from being the most difficult at the initial stage to becoming second easiest at the stable stage. This result is within our previous prediction because an indefinite DP has the least salient [-SR, -HK] features and is thus difficult at the initial

stage, but its forms are conceptually similar cross-linguistically with indefinite NumP. A definite DP is easy at both initial and final stages, as previously predicted because of the most salient [+SR, +HK] features and similar concepts and forms in L1 and L2. A specific DP displays the opposite development in interlanguage, being easy initially but becoming more difficult than a Definite or Indefinite DP in subsequent stages. This order might reflect its [+SR] feature, which makes it easily understandable at the beginning for learners but confusing at subsequent stages when it becomes mixed with a definite DP in concept or with an indefinite DP in forms.

A generic DP, to our astonishment, appears to be most difficult and advances least in acquisition. As a generic reference exists in all languages and is not conceptually difficult to acquire, this difficulty might arise from an uncertain choice of the four generic forms available. Take the two generic sentences in (5) as an example. Sentence (5a) can have only a singular NP, definite or indefinite, as its answer, and sentence (5b) can have only a bare N (for an uncountable noun) as its answer. Consequently, although four forms are at hand for the generic DP, only some, not all, forms are considered correct.

- 5 a. _____ (bat) is/are a mammal.
 b. _____ (language) is/are a great invention of mankind.



Group	Generic	Definite	Specific	Indefinite
G1	0.813	0.983	0.881	0.906
G2	0.684	0.763	0.759	0.763
G3	0.508	0.661	0.556	0.532
G4	0.371	0.406	0.461	0.289
Total	2.376	2.813	2.657	2.49

Figure 5: Means of DP of four Types among the Groups

Figure 5 lists the means of DP of four types among the four proficiency groups.

Whereas for generic and specific DPs there is a gradual improvement, for definite and indefinite DPs there is a substantial advance in acquisition accuracy. We conclude that the major improvement in Chinese L2 learners in acquiring English DP results mainly from major progress in the indefinite and definite DPs. This phenomenon might indicate that a DP with both positive or both negative [SR, HK] features is more easily acquired as it is conceptually simple and consistent in forms cross-linguistically.

4.3 Types and causes of errors in various DP

Table 5 presents the rates of error for each question and the average sum of each DP type. We conducted a detailed examination of errors within each particular DP type with a focus on those sentences with error at large rates. To investigate the possible causes of errors, we undertook a cross-linguistic comparison of the reference systems between English and Chinese.

Table 5: Average rates of error of test questions

DP type	Gen. sum	Q-3	Q-6	Q-8	Q-15
rate of error	48.75%	53%	50%	29%	63%
bare NP error		14%		11%	30%
other major error			the/a N		Ns
DP type	Def. sum	Q-1	Q-4	Q-10	Q-11
rate of error	38.5%	27%	62%	39%	26%
bare NP error		21%	22%	21%	14%
other major error			a N		
DP type	Spe. sum	Q-2	Q-7	Q-12	Q-13
rate of error	41%	63%	26%	23%	52%
bare NP error		17%	14%	11%	10%
other major error		a/the N			the N
DP type	Ind. sum	Q-5	Q-9	Q-14	Q-16
rate of error	47.25%	44%	49%	29%	67%
bare NP error		11%	24%	14%	23%
other major error		a/the N	the N		Ns; the N

4.3.1 Errors in DP of the generic type

Chinese learners have the greatest rate of error in DP of the generic type, which refers to a generic and unspecifiable argument DP and is characterized with the feature [-SR, +HK]. In Mandarin, only the bare NP is used for a DP of this type, whereas, in English, four forms (c.f. Table 1) are usable, but not in free variation. The

concept of dividing nouns into countable and uncountable categories is a major barrier for Chinese learners because Mandarin has almost no plural suffices to mark the plurality of a noun, except “men”(們) for [+human] nouns; this major reason reflects the distinct concepts in distinguishing nouns in the two languages. Regular nouns are regarded as individual items in their terms in English, but Chinese nouns are countable mass nouns unless they are preceded by a classifier and henceforth become individualized. Chinese EFL/ESL learners must learn to alter from their Chinese system to the English system to master the English language. The large rate of error in Question 6 (Q6, henceforth) is a representation of the problem of distinction between countable and uncountable nouns. The major type of errors in Q6 is the inappropriate plural form made mainly by the senior high-school group. Other errors, such as an abstract noun preceded by article *a* or *the*, are made by the junior high-school group.

The countable nouns in generic DP were originally considered of less problem because any form of the three – a N, the N, or Ns – is correct. Because Chinese can use a bare noun to express a generic noun, the most common errors for Chinese learners involve the incorrect use of a bare noun in generic DP. In addition, among the three acceptable forms, the plural form is the most used, indicating that a generic noun is like a mass noun in English according to the Chinese manner of thinking. Errors are also distinct in the various proficiency groups. In the high proficiency groups, the errors derive from the misuse of article *the* before a plural noun or misspelling of a plural form, whereas, in the low proficiency groups, the errors are bare nouns or a mismatch between two corresponding generic DPs in the same sentence, as in Q8.

4.3.2 Errors in DP of the definite type

A DP of the definite type refers to a noun of a definite reference, which is characterized with the feature [+SR, +HK]. Although Mandarin has no article system, a bare noun preceded by personal possessives or by demonstratives and classifiers can have functions similar to that of an English article. That Chinese learners have the least problems with DP of this type is not astonishing because English has basically one form, whereas Chinese has definite expression in two forms. Among the four test sentences testing a definite DP, Q4 and Q10 have rates of error greater than the others because Chinese EFL learners are insensitive to the information given in the context or assumed in the background knowledge. In Q4, when the pen is mentioned the second time, this information is old and hence should be referred to as a definite object. In Q10, the sun as a unique object in the universe carries a definite reference. When expressions are fixed such as a definite article before an ordinal number, errors rarely occur, probably due to much classroom instruction and simplicity in concept.

Among the types of error in the definite DP, a bare noun is prevalent because it is a definite reference in Chinese. We perceive here evidence of L1 transfer especially among groups of low English proficiency. Groups with proficient English made few mistakes in DP of this type, with occasional misjudgment of the semantic context and hence a replacement of indefinite article *a* with definite article *the*.

4.3.3 Errors in DP of specific type

A DP of the specific type refers to a referential indefinite noun, or first mentioned NP, which is characterized with the feature [+SR, -HK]. Whereas English distinguishes the singular and plural form in a specific DP, Chinese distinguishes the preverbal and postverbal forms. Both English and Chinese use indefinite NumP, such as [a + singular noun]/[Ns] in English and [Num + Cl + noun] in Chinese, as the default structure to refer to a specific DP. Because Chinese allows no indefinite NP in the subject position (Hsin 2002, 2003), NumP must have an existential marker *you* to license this indefinite NumP, whereas English lacks this restriction. Carrying this semantic restriction in L1, Chinese learners tend not to have the indefinite DP form and hence choose the definite DP for a specific-referenced subject NP, as illustrated in the large rate of error for Q13.

Error from another source emanates from the necessary discernment of a singular or plural form in English. In Q2, the semantics of the sentence (from *keeps sending* in this case) requires a plural expression of the specific DP, but Chinese learners were insensitive to this context agreement and erred by providing either a singular form or a definite DP.

Except the preceding two examples, Chinese performed satisfactorily on the specific DP, but a replacement of a bare noun with a correct answer is common for Chinese learners, especially groups of poor English proficiency. For advanced English groups the errors tend to arise on substituting a definite DP for a specific DP. Chinese seem to tend to take the NP with feature [+SR] as a clue to a definite environment causing overuse of definite article *the*.

4.3.4 Errors in DP of indefinite type

A DP of indefinite type refers to an indefinite, or indeterminate, NP, which is characterized with the feature [-SR, -HK]. Similar to DP of the specific type, English use either a singular or plural noun for countable nouns and a bare noun for uncountable nouns, whereas Chinese use bare nouns postverbally, or bare nouns preceded by an existential verb *you* preverbally. As two possible forms exist for countable nouns, the difficulty for Chinese learners would lie in the choice of form. The context normally provides clues for a particular form, such as a singular noun in

Q16 but a plural noun in Q5. Chinese EFL learners are insensitive to the information in the context and thus make errors when choosing the other form. Bare nouns remain errors of a common type in this case, especially among groups of poor English proficiency. The Definite NP (i.e. the N) is an error of another type made by Chinese subjects with intermediate English proficiency.

Upon scrutiny of the interlanguage development, we found that Chinese learners seem to take the DP of indefinite type as the generic one, in which countable nouns of three forms are all acceptable. Bare nouns are used at the earliest stage from their L1 transfer. The-N erroneous form also exists at an initial stage of the interlanguage before evolution into a more advanced stage of two potential forms of the indefinite DP. When a learner can discern the two forms from information of the context, he or she has acquired the indefinite type of DP, as shown in the greatly improved performance of advanced learners.

4.4 Error patterns for learners at varied stages

We find learners from disparate levels of English proficiency have distinct patterns of errors. For beginning learners, most errors arose from an incorrect use of bare N in DP of all types, but mainly a definite and indefinite DP. This result reflects mainly L1 transfer as a bare N is a common form in definite and indefinite DPs in Chinese.

For more advanced learners, the error of bare N is gradually reduced to its minimum and major error arises from an incorrect choice from several possible forms of generic or indefinite DP, especially in the distinction of countable or uncountable nouns such as in Q6, or in the choice of a singular form for a plural form, or the opposite, such as in Q5 and Q16. Since nouns in Chinese are mass nouns in nature and no countability feature is required, the distinction of countable and uncountable nouns in English is a constant learning problem for Chinese EFL/ESL learners. Specific, generic, and indefinite DPs all have multiple forms to express and the decisive hint or clue is the context information and the countability feature of the noun. Chinese learners are deficient in both areas. For this reason DPs of these three types are more difficult.

In sum, except uncountable nouns, bare nouns are never a correct form for a DP in English, but the most prevalent error made by Chinese learners is the bare noun. Errors of more advanced learners arise basically from incorrect choices of multiple options in English because of their insensitivity to the information provided in the context. We conclude hence that Chinese interlanguage begins with a L1 reference system and gradually evolves into the L2 system, finally developing other syntactic or morphological knowledge to incorporate with the reference system and to make a

correct choice when multiple options are possible.

5 Conclusion

We explored the order of acquisition by Chinese L2 learners and causes of errors of DP of four types in English. Previous researchers focused on the absence of articles in Chinese, but our work shows that the problem derives from the discrepancies of the forms that the two languages use in the reference system more than from the superficial article problem.

A Chinese noun is conceptually a mass noun; unless individuality is required, it is regarded as a whole element, and a bare noun is generally used for a definite, generic and indefinite reference. A classifier emerges when an individual concept or particular number is mentioned. The most important syntactic restriction is the necessity of an existence verb marker *you* for preverbal indefinite references; otherwise, all preverbal DP are considered definite. With such a prevalence of bare nouns, the common error of a bare noun in substituting English DP of all types is understandable. Because bare nouns are rarely an acceptable form in English DP reference, this substitution phenomenon occurs only at an initial stage at which a learner is under the influence of the L1 reference system, which is inconsistent with the finding of Thomas (1989) that the *zero* article overgeneralized across proficiency levels. Errors at subsequent stages arise mainly from an inability to select the correct form when English allows several options for DP of a particular type. According to our research, Chinese learners are insensitive to the context information or restriction on syntactic agreement within the sentence and thus make mistakes, in agreement with Butler's (2002) claim that the English article system does not consist of a one-to-one relation between form and meaning, thus imposing complexity and challenges for Chinese L2 learners of English.

The results of this work also show the acquisition order of DP of four types to be Def > Spec > Ind > Gen. A definite DP is easiest because it is most salient in both features of [SR, HK] and there is basically one form to represent it, whereas the generic DP is most difficult because of four possible forms and selecting the correct one requires years of experience for Chinese learners. The indefinite DP is also a difficult type at an initial stage because of discrepancies in the forms that the two languages use and multiple forms from which to choose in English, but this type has the greatest improvement probably because both negative features in [-SR, -HK] make it simple in concept to acquire and because the forms are basically similar cross-linguistically.

In general, the accuracy of acquisition increases with the level of proficiency. The means of correct answers of the four subject groups show clearly that learners

improve with their duration of learning English and with more input of English. The major improvement falls between the groups of students of junior and senior high schools. A significant difference is observed also between senior high-school students and undergraduate students with English as major subject, but not between undergraduate and graduate students of English. We therefore assume that interlanguage development conforms to a curve with a steep ascent at the beginning and a subsequent gradual leveling.

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APPENDIX I

Questionnaire

I. Personal information:

You are currently a (graduate / undergraduate / senior high / junior high) student

Grade: ____

II. Questions:

Please fill in the blank with an appropriate noun phrase (with or without an article, in a singular or plural noun) following the indication of the noun within the parentheses, and circle the corresponding verb when needed. An example is provided in the following:

請於空格中，填入一適當的名詞片語（可能需要冠詞，也可能不需要；名詞可為單數或複數），若該名詞片語為主詞，尚需圈出適當的動詞。例句如下：

e.g. The hero (hero) was/were killed at the end.

Once upon a time, there was a hero (hero) in a remote village.

Heroes (hero) usually die/dies hard.

1. I won a million-dollar lottery. _____ (news) spread all over school quickly.
2. Mike keeps sending _____ (letter) to her.
3. _____ (mouse) like/likes cheeses.
4. John saw a pen on the desk. He said to Mary, "Please pass me _____ (pen)."
5. I enjoy reading _____ (novel).
6. _____ (language) is/are a great invention of humankind.
7. I saw _____ (strange man) walking upstairs.
8. _____ (woman) live/lives longer than _____ (man) in general.
9. In general, Taiwanese are friendly to _____ (foreigner).
10. There are nine planets traveling around _____ (sun).
11. _____ (first man) to jump into the pool was John.
12. Steve met _____ (beautiful girl) yesterday.
13. _____ (man) called you this morning.
14. She used to be _____ (nurse).
15. _____ (bat) is/are a mammal.
16. Everyone has _____ (chance) to perform in this drama.