A STUDY OF THE ARTICLE SYSTEM IN ENGLISH

BY

Pi-fen Liu Chen

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Linguistics
and Germanic, Slavic, Asian, and African Languages

1988

Abstract

A STUDY OF THE ARTICLE SYSTEM IN ENGLISH

By

Pi-fen Liu Chen

This dissertation aims to answer the following questions frequently asked by adult second language learners of English: (a) when do we use *the*? (b) when do we use *a(n)*? and (c) when do we use neither *the* nor *a(n)*? This study discusses mass and count nouns in English, and what makes an NP definite and what makes it indefinite. It also discusses the generic use of English articles. It is argued that not every mass noun can be converted into a count noun and vice versa. Four principles are given for mass/count conversion. For (in)definiteness, three requirements-- existence, uniqueness, and familiarity-- are posited for the use of *the*. Subtle differences among the generic use of *the*, *a(n)* and Ø, the zero article, are discussed and their respective distributions and restrictions are presented. An over-all system of article usage is presented for second language learning.

Dedicated to

My teacher, Dr. Barbara Abbott

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to Dr. Barbara Abbott, my dissertation director, for her teaching and various tremendous help in the past five years. I am particularly indebted to her for being my most frequently consulted informant. Her speedy and helpful comments on my dissertation drafts have led to considerable improvements in the final version. I am grateful to her for answering my never-ending questions. Her generosity in lending me books and articles related to my topic is also greatly appreciated.

I also wish to extend my appreciation to the other members of my committee. My thanks go to Dr. Ruth Brend for her numerous comments on my draft and for providing contexts for sentences about which I did not have good intuitions. I owe my thanks to Dr. Grover Hudson for his comments and corrections. I am grateful to Professor James Wang for his generous support and encouragement throughout my graduate career at Michigan State University. I would like to express my special thanks to Dr. Marcellette Williams for serving as college representative at my oral defense and for her comments and corrections.

Those who kindly answered my questionnaire deserve my special gratitude, too. I am particularly grateful to

Rebecca Smith and Kathleen Smith for their generous help. This study was supported in part by a grant from P.E.O. International Peace Scholarship Fund. I am grateful for this grant and for P.E.O. members' friendship.

Finally, I wish to thank my husband, Tung-jung, for his support during my study and my two daughters, Shih-wen and Hsiao-wen, for their intuitions.

TABLE OF CONTENTS

Chapter I

Introduction

The purpose of this study is to try to answer the following questions frequently asked by adult second language learners of English: (a) when do we use *the*? (b) when do we use *a/an*? and (c) when do we use neither *the* nor *a/an*? The choice of the definite article, *the*, the indefinite article *a/an* or the zero article, Ø, has long been a great problem for non-native speakers of English. This persistent problem can be seen in numerous studies on errors committed by adult second language learners of English with different language backgrounds.

I will mention only a few of these studies. Agnihotri, Khanna, and Mukherjee (1984) reported that Hindi/Punjabi-speaking undergraduates of the University of Delhi, after seven years of studying, in a test of insertion of missing articles, only 33% of the time correctly inserted the definite article in simple cases such as "*the* door of a bank", "*the* son of a rich man", and "*the* counter marked 'Accountant'". Another study by Kharma (1981) shows that Arabic-speaking students, after 12 years of studying, with the final 3-4 years spent in intensive study of English language and literature at Kuwait University, scored only as high as 71.2% on a test of articles which did not in fact

incorporate some of the most difficult uses. A similar result was reported by Yamada and Matsuura (1982). Their study shows that Japanese students majoring in English at Hiroshima University, who were in their seventh to ninth year of learning English, scored about 70% in an article insertion test.

There are probably various reasons for the failure of second language learners of English to make the right choice of articles after numerous years spent learning the language. It might be that some of them simply do not pay attention to the usage of articles in the course of their study. It might be the teachers' fault; they do not emphasize the importance of articles. Or more fundamentally, it might be due to a lack of good available descriptions of the English article system.

To see how well the system is described, I now turn to a review of some teaching grammars on English articles. In an article entitled "Rules in the Teaching of the English Articles", Lacey (1977) introduces an "over-neat" (his own word) system of English articles. This system involves three notions: generality, definiteness and countability. In selecting a correct article for a given noun, first of all, Lacey says, one needs to ask the question: "Are we speaking of all occurrences of what this noun refers to or not?" (p. 34). If the answer is yes, the noun carries the feature [+all]; if no, it is [-all]. For a noun which is [-all], we have a second question to ask: "Do we know this noun already?" (p. 34). If we do, the noun carries the

feature [+definite]; if we don't, it is [-definite]. A third question is: "Is this a countable noun?" (p. 34). Here we get the feature [+count] or [-count]. For [+count] nouns, we have a last question to ask: "Is the noun plural or not?" (p. 34). Here we get the feature [+plural] or [-plural].

Lacey gives the following chart as a summary of his system: (p. 34)

+definite -count	+definite +plural	+definite -plural
the + N	the + N+s	the + N
-definite -count	**-definite +plural**	**-definite -plural**
Ø + N	Ø + N+s	a + N
+all -count	**+all +plural**	**+all -plural**
Ø + N	Ø +N+s	a + N the + N

It seems that we have a simple and clear-cut system here. There are, however, at least three problems. All of them are related to the notions behind the features. First, we don't know exactly what [+definite] or [-definite] means, and hence, we don't know when to apply one or the other to a given noun. Lacey's definition of this feature is as follows. "Do we know this noun already? (By 'know' I mean it has occurred in the text of speech before or it is known by implication or deduction when it has not so occurred)"

(p. 34). Such a definition is not very useful because it is really hard, in many cases, to determine whether a given noun should be [+definite] or [-definite]. For example, such a determination is difficult in cases like

(1)a. Despite the protest of his family and his neighbors, John was not intimidated.
b. Despite protest from his family and his neighbors, John was not intimidated.

Let us take (1) as a situation where the noun *protest* has not occurred in the text of speech before. If in (1a) the noun *protest* is known by implication or deduction and hence it is [+definite], why not in (1b)? We can infer what protest John met with in (1b) as in (1a). Why does *protest* remain [-definite]?

Secondly, there are problems with the feature [+count] or [-count], too. One problem is that "many English nouns can happily occur as either " (p. 35). Take the phrase *the text of speech* for example. Both *text* and *speech* are labelled as [U] (uncountable) and [C] (countable) in *The Advanced Learner's Dictionary of Current English* (1948). To make things worse, a most common count noun like *apple* can be readily converted into a non-count noun as in

(2) He often puts apple in his salad.

Similarly, an abstract non-count noun like *excess* is readily used with the indefinite article as in

(3) An excess of imports over exports will surely lead to a trade deficit.

Besides the definiteness and countability problems, lastly, there is a problem of generalizing with Lacey's system. In his article system, only when we speak of "all occurrences" of what a noun refers to, does the feature [+all] apply. I am not sure about what counts as all occurrences. In cases like

(4)a. The dog is a friendly animal.
b. The tiger lives in the jungle.

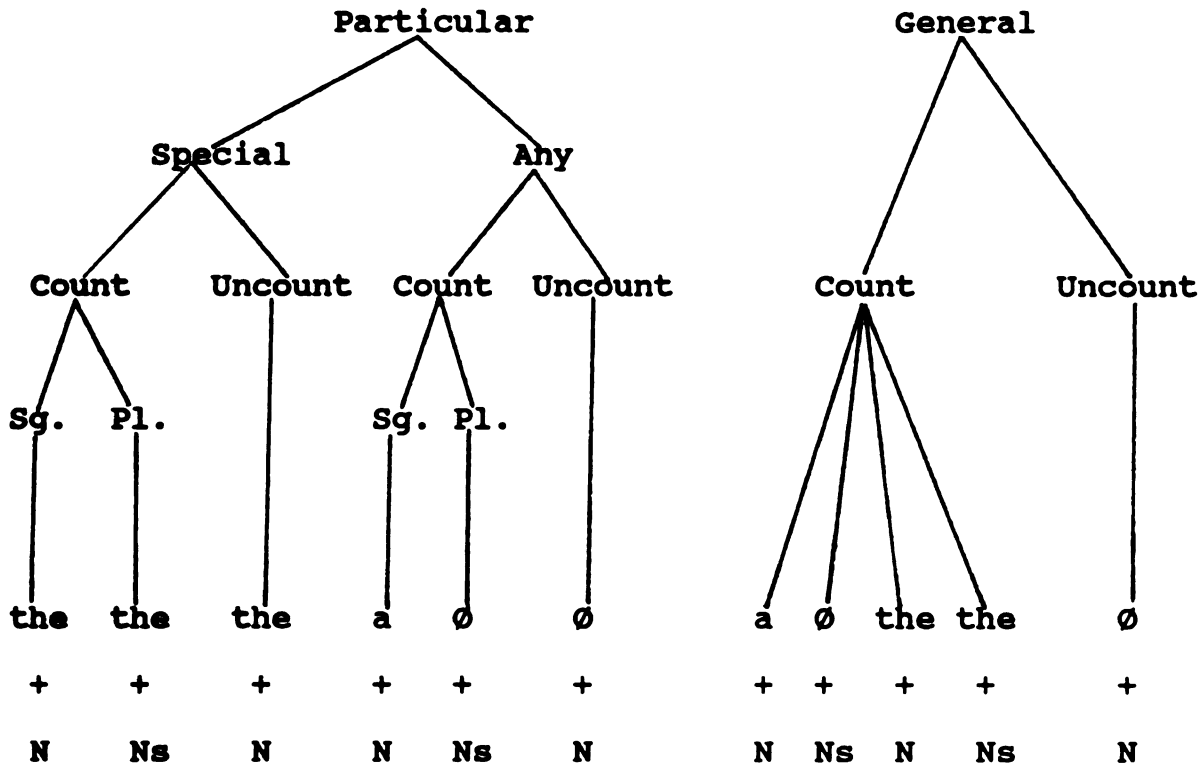
apparently not each and every dog is friendly; neither is it true that each and every tiger lives in the jungle. In other words, strictly speaking, in (4), we are not speaking of all occurrences of what the given nouns "dog" and "tiger" refer to. But on the generic reading, the use of the definite article in both cases seems to be a result of applying the feature [+all] in Lacey's system. Further, we make generalizations such as:

(5)a. Candy is bad for *the teeth.*
b. Iron is good for *the blood.*
(Bolinger, 1975, p. 181)

In (5a), we have a plural noun *teeth* co-occurring with *the*. But in Lacey's chart we do not find the form "*the* + N + s" for [+all] NP's. Similarly, in (5b), we have a non-count noun *blood* co-occurring with *the*. But in the chart, we find only "Ø + N" for [+all] [-count] nouns.

A similar system is presented in another article entitled "A Teaching Grammar of the English Article System" by Patricia McEldowney (1977). She says, "The presence or

absence of *a*, *the* or "-s" in various combinations in noun phrases communicates four main types of meaning: i) general or particular, ii) any or special, iii) countable or uncountable, and iv) singular or plural" (pp. 96-98). She presents English article usage as follows: (p. 99)



If we compare this chart with Lacey's system, we find that "Particular" is equivalent to [-all], "General" to [+all], "Special" to [+definite], and "Any" to [-definite]. From this chart we see that in a general statement, the Special/Any distinction disappears and we can use either the singular or plural form of a count noun to make generalizations. Hence for a count noun, there are four

ways to express a general statement, singular or plural, and definite or indefinite. For a non-count noun, of course the plural is impossible; however, the definite is not impossible, as shown in (5b) above. But it is missing in McEldowney's system.

How do ESL (English as a Second Language) textbooks present English article usage? In an article entitled "The Article in American English: What the Textbooks Don't Tell Us", Pica (1983) summarizes five rules that most ESL textbooks have in common and interestingly enough, she gives what she calls a "counterexample" to each of these five rules (pp. 223-24). In the following, one by one I will present each of Pica's rules and its counterexample and then make comments.

Rule 1: *a* for introductory usage of an item, followed by *the* for second mention of the item, e.g.:

(6) His car struck a tree; you can see the mark on the tree.

Counterexample to Rule 1 (second mention):

(7) His car struck a tree. He was surprised to see how much damage a car could do to a tree.

Strictly speaking, (7) is not a counterexample to Rule 1. In (6), we have a second mention of the same tree; whereas in (7), what we have is a second use of the same word *tree*, which does not refer to the same tree. In (7), in the complement *how much damage a car could do to a tree*, the two NPs *a car* and *a tree* become generic because of

the word *could*. Hence a real problem with Rule 1 is its wording, but not its content.

Rule 2: *the* implies uniqueness, e.g.:

(8) The sun and the planets remain a mystery.

Counterexample to Rule 2 (uniqueness):

(9) A sun and some planets were sighted by a group of astronauts during a recent space probe.

Rule 2 itself seems to be right. What might go wrong is the application of the rule. In (8) we are talking about the sun, the only sun that we know of, the sun that has been sighted for billions of years; whereas in (9), we are speaking of a new group of heavenly bodies, not the unique sun and the planets in our shared knowledge and hence *the* is inappropriate.

Rule 3: *a* for typicality or representativeness, e.g.:

(10) A man and a boy are on a bus.

Counterexample to Rule 3 (typicality):

(11) A man named Higgenbottom and a boy with seven fingers are on a bus.

Rule 3 as it stands is too narrow and is easily subject to objections. In fact it may well be covered by the first part of Rule 1, which says: *a* for introductory usage of an item. Then both (10) and (11) can be covered by this usage.

Rule 4: ***the*** **is used with nouns preceded by ordinals and superlatives, e.g.:**

(12) Which country of the world has *the* most famous art collection?

Counterexample to Rule 4 (superlative):

(13) Our university library has *a* most famous art collection.

Here again, strictly speaking, (13) is not a counterexample to the superlative rule because in (13), the word "most" is not a superlative, but an ordinary adverb meaning "very".

Rule 5: ***the*** **can be used with a first mention item if the item is familiar or identifiable to both speaker and listener, e.g.:**

(14) Where did you park the car?

Counterexample to Rule 5 (familiarity/identifiability):

(15) A book on Mr. Allen's desk is yellow.

Even if (15) is a case where the book in question is identifiable to both speaker and listener, it is not a counterexample to Rule 5, which says: "the" *can be* used... Notice that the rule does not say: "the" *should be* or *must be* used. The real problem with the familiarity/identifiability rule is that in many cases a first mention item is not familiar or identifiable to either the speaker or listener, but *the* is used. For example:

(16) John read a book about Chomsky and wrote to the author.

(16) can be uttered in a context where the author of the book is familiar or identifiable to neither speaker nor listener.

Probably it is not fair to criticize ESL textbooks which do not aim to give detailed discussion of English article usage. Nor is it fair to criticize articles which devote only a few pages to a rather complicated issue such as the English article system, as I did Lacey's and McEldowney's. But how about a reference grammar which devotes an entire book to discussing the issue? I now turn to a review of *The Use of Articles in Contemporary English* written by Henryk Kaluza (1981). It is claimed in the introduction that "there must be [a] few very simple rules governing the whole usage [of the English articles]." The aim of his book is to formulate these rules and show how they work.

The overall system is presented as follows in the conclusion (p. 83).

> The articles *a*, *the*, Ø, and the nouns C, U form combinations with the following specifying and generalizing meanings:

specifying	generalizing
a C (specific, introductory)	a C (concept)
the C (specific, referential)	the C (object)
the Cs (specific, referential)	the Cs (homogeneous class)
	Ø Cs ("more than one"
the U (specific, referential)	Ø U (mass, abstractness)

[C stands for "countable noun" and U for "uncountable noun".]

This chart takes some explanation. For specifying *a C*, Kaluza says, "When we have in mind a specific entity of a class paraphrasable by 'a certain' or 'a particular' not yet expressed or implied, we commonly introduce it by means of *a*" (p. 23). This leaves out a whole range of non-specific uses of *a*, as exemplified in

(17)a. Mary wants to marry a Norwegian.
b. John wants to buy a house.

(17a) has a reading according to which Mary wants to marry a person from Norway, but she does not have a particular Norwegian in mind. Similarly, (17b) has a non-specific reading according to which John wants to buy a building to live in, but he does not have a certain house in mind.

For the generalizing uses of *the*, *a* and Ø, Kaluza bases all his discussions on Burton-Roberts' (1976) work, which I will discuss in due course. I now turn to the itemized rules Kaluza presents. One of the rules that he gives is this: "Practically every U can be converted into a C with one of the following meanings: a) a unit of, b) a kind of, and c) an instance of" (p. 10). For example, we say "two coffees" meaning "two cups of coffee", "two different wines" meaning "two different kinds of wine" and "many small kindnesses" meaning "many small instances of kindness". He says that "a C sense is often indicated by means of a restrictive modifier" (p. 10). Among others he gives the following sentence as an example:

(18) Jerseys give *a* very rich milk. (p. 18)

This sentence might be acceptable, but how about a sentence such as

(19) ?We've not had *a* stormy weather like this for a long time.

I think in (19), the use of *a* will probably be considered bad by most people. However, according to Kaluza's rule, it should be acceptable because conceptually, we can argue that "stormy", "sunny", "cloudy", "rainy", etc. constitute different kinds of weather. Why, then, in (19), does the modifier *stormy* fail to bring out a count sense ("a kind of") of the uncountable *weather*?

Besides saying that "restrictive modifiers change Ø U into *a* C (with the article *a*) when they bring out the sense of 'a unit of', 'a kind of', or 'an instance of' of uncountable mass or abstractness", Kaluza goes on to say that "the restrictives also cause the use of *the* [with a first-mention item] if they answer the question 'which one(s)?' Otherwise, restrictive modifiers narrow down the meanings of their heads without affecting article usage" (p. 84). For example, we say "*a* man who writes novels", but we say "*the* man who wrote this novel". In the former case, the question "which one?" is not answered by the restrictive modifier because presumably there is more than one person in the world who writes novels. In the latter case, however, the question is answered by the restrictive relative because there is normally one and only one person who wrote a particular novel.

This rule works with simple cases like the examples given above; however, it does not work well with more complicated cases. Consider:

(20) Mary has a dog whose name is Coco.

Is the question "which one?" answered by the restrictive relative in (20)? Apparently, yes, because we can answer, "the one whose name is Coco". Nevertheless, the use of *the* in this context is not appropriate. Besides, for abstract nouns, in cases like

(21)a. The early arrival of Santa Claus that cheered up everybody was itself a nice present for them.
b. The importance of style that stylists emphasize a great deal is overlooked by a lot of people.

the is obligatory in both (21a) and (21b), but the restrictive modifiers do not answer the question "which one?". In fact, the question itself does not arise for abstract nouns because we do not identify the denotation of an abstract noun by picking out an individuated entity.

To give a brief summary of what we have discussed so far, we note that we have three kinds of problems to solve. First, what is involved in converting non-count nouns into count nouns and vice versa? Second, what makes an NP definite and what makes it indefinite? Third, what are the generic uses of English articles? To make a correct choice of English articles, a second language learner needs to

consider the following properties of the NP in question: i) countability, ii) definiteness, and iii) genericness. This dissertation will discuss these three topics and in that order.

The choice of *the*, *a/an* or Ø is a tough one for non-native speakers of English. In sharp contrast, it is not a problem at all for native speakers. If the system underlying native speakers' usage can be described adequately, non-native speakers will have good guidelines in making the choice. The problems to be addressed are among the factors affecting the choice. This dissertation will conclude with a set of principles for the choice of articles and a short discussion of the pitfalls of rule application by second language learners.

Chapter II

Mass and Count Nouns

2.0 INTRODUCTION

This chapter is concerned with the countness of nouns. For L2 (second language) learners, in making the choice of *a*, *the* or the zero article, a question to ask is, "Is this a count noun?" For a count noun, the choice of articles is *a/the* (+ N) or Ø/*the* (+ Ns); for a non-count noun, the choice is Ø/*the* (+ N). This correlation of count and non-count nouns with articles is illustrated in the following examples:

(1)a. I have a/*Ø book on fish.
   b. I have *a/Ø books on fish.
   c. The book/books I bought today was/were on fish.

(2)a. I'm looking for *a gold.
   b. I'm looking for gold/*golds.
   c. The gold/*golds I found is/*are worth millions of dollars.

(1) shows that a count noun like *book*, if singular, must co-occur with *a* as in (1a), or with *the* as in (1c); if plural, it cannot co-occur with *a*, as in (1b). A plural count noun must co-occur with either *the*, as in (1c), or the zero article, as in (1b). (2) shows that a non-count noun like *gold* cannot co-occur with the plural morpheme "-s" nor with *a*, but it can co-occur either with the zero article or *the*.

Because of these systematic co-occurrence restrictions, L2 learners can narrow down their choices of articles if they can decide whether the noun in question is count or non-count. To better understand what is involved in determining whether a noun is count or non-count, we need to know the semantic distinctions between these two kinds of nouns, and understand the switching back and forth between count and non-count meanings of the same noun.

It is concluded in this chapter that if L2 learners know the distinctions between count and non-count nouns, they do not have to learn separately for each noun whether it is count or non-count. Instead, what they have to learn is only two types of nouns. The first type is always non-count. The second type is always count. The rest of the nouns can be used either as count or non-count, depending on context. Here the semantic count/non-count distinction can be of help to the L2 learner in deciding when a noun is to be used in a count sense and when to be used in a non-count sense. Principles for the conversion of count nouns into non-count nouns and also the opposite are offered as guideposts for L2 learners.

Section 2.1 addresses the count/non-count distinction. Section 2.2 deals with the degrees of countability. Section 2.3 is about count/non-count conversion. Finally, section 2.4 discusses some implications for L2 learners.

2.1 The MASS/COUNT DISTINCTION

Jespersen (1924, p. 198) called non-count nouns "mass words" and he gave them this definition:

> There are many words which do not call up the idea of some definite thing with a certain shape or precise limits. I call these "mass words": they may be either material, in which case they denote some substance in itself independent of form, such as *silver*, *quicksilver*, *water*, *butter*, *gas*, *air*, etc., or else immaterial, such as *leisure*, *music*, *traffic*, *success*...

Jespersen's definition of mass words seems to be vague because we can never know for sure what idea is called up in the mind of a speaker of a language. Further, there are things which come in similar shapes, but the nouns which denote them are of different status. One may be a count noun and another a mass noun. As Barbara Abbott has pointed out to me, asparagus and carrots are an example of this kind. They come in similar shapes, but the noun *asparagus* is a mass word and the noun *carrot* is a count noun. Given the fact that they are similar in shape, we are not sure whether or not the two words will call up different ideas about their shapes in the mind of language speakers just because one is count and the other is mass. That is, will *asparagus*, being a mass noun, fail to call up the idea of something with a certain shape or precise limits? In a broader sense, we are not sure whether or not language affects the way we see the world. This is another difficulty that Jespersen's definition of mass words encounters.

Jespersen was not the only one who assumed that the mass/count distinction is simply in the nature of the things referred to. Whorf was another one who held

basically the same position. Whorf (1956) divides nouns denoting physical things into two categories: individual nouns and mass nouns. His remarks on the distinction between the two are: "Individual nouns denote bodies with definite outlines...Mass nouns denote homogeneous continua without implied boundaries" (p. 140). To explicate his point, he gave the following example. When we want to talk about only a certain portion of the homogeneous continuum of a mass noun, say *milk*, *water*, or *sugar*, we have to individuate the mass noun by an individual noun like *bottle*, *cup* and *lump*, as in *a bottle of milk*, *a cup of water*, *a lump of sugar*, etc.

Whorf's remarks on the mass/count distinction, like Jespersen's, are subject to attack. If the distinction is simply in the things referred to, a noun which refers to an identical entity through different times should be always mass or always count. The development of the English language, however, shows that there are nouns which were mass earlier in history but later became count. As Barbara Abbott pointed out to me, *pea* and *cherry* are two historical examples. The former comes from *pease* and the latter from *cherise*. Both *pease* and *cherise* were mass, but because they sounded like a plural, people took *pea* as the singular of *pease* and *cherry* the singular of *cherise*. Thus *pea* and *cherry* became count nouns. For nouns like these two, being count is nothing but a historical accident.

Are there better theories for the mass/count distinction? Quine (1960, p. 91) claimed that *shoe*,

pair of shoes [count] and *footwear* [mass] refer to basically the same stuff, and are different from one another solely in how they divide their reference. Both *shoe* and *pair of shoes* divide their reference, differently. But *footwear* does not at all. Quine claimed that the mass/count distinction lies in the words themselves and not in the stuff they name. Count nouns individuate their reference, but mass nouns do not.

McCawley (1975) illuminated this distinction further by arguing that "the meaning of a count noun specifies an individuation, whereas the meaning of a mass noun is neutral as to individuation" (p. 314). One of his examples is *cold* and *flu*. The following facts are given to support his contention: (p. 317)

(3)a. I have a cold.
   b. I have a case of the flu.

(4)a. Do you have the same cold/*flu that you had last week?
   b. Do you have the same case of the flu that you had last week?

He says that "a cold is a 'case' of a particular infection" (p. 317), and argues that the countness of *cold* can be attributed to an individuation specified in its meaning. In contrast, the word *flu* does not individuate its referent, and hence when we are talking about a particular case, we cannot say "I have a flu"; instead we have to say (3b), using an additional unit word like *case*.

In sum, according to Quine and McCawley, count nouns

differ from mass nouns in that the former, but not the latter, include an individuation in their meaning. This theory does not have the shortcomings of Jespersen's or Whorf's. If the mass/count distinction lies in word meaning, and not simply in the nature of the things referred to, the historical development of *pea* and *cherry* can be explained as a change in word meaning. We can say that an individuation for their reference was added to their word meaning at a certain point in history. And for the question why *carrots* is count and *asparagus* is mass, we can say that it is because the former includes an individuation in its meaning, but not the latter. It has to be admitted, however, that the correspondence between form and meaning is arbitrary. That is, we still cannot explain why the word *carrot*, and not the word *asparagus*, includes an individuation in its meaning.

This mass/count distinction explains why two words like *surgery* and *operation*, although similar in meaning, can be different in countness. To most native speakers of English, the word *surgery* denotes the treatment of injuries and diseases by operations and hence in this usage, it is a mass noun; whereas *operation* denotes the act performed by a surgeon and hence it is a count noun. Note that acts are relatively easier to individuate than treatment. Many Chinese learners of English do not know that *surgery* is a mass noun because when they are learning this word, they fail to learn its exact meaning, which does not include an individuation for its reference.

For abstract entities such as surgery and operations, L2 learners cannot decide whether the nouns which denote them are count or mass simply by logical reasoning. However, for nouns which refer to physical objects, there is a relatively reliable tendency. If a noun refers to a discrete object, i.e. an object with definite outlines or a certain shape, it tends to be a count noun. Things like cars, houses, chairs and tables are discrete and countable and hence the nouns refer to them tend to be count. On the other hand, if a noun refers to an object without a natural boundary such as water, air, milk, cotton, and sand, it tends to be mass. Here, we see that Jespersen and Whorf are not totally wrong.

Yet in English, we do have nouns which do not follow this tendency. *Asparagus* is such a word. McCawley (1975) gave us some more examples of this kind:

Count	Mass
noodles	spaghetti
onions	garlic
beans	rice
chairs	furniture

McCawley pointed out that rice comes in grains, which are countable; nevertheless the word *rice* is a non-count noun. Similarly, there is no physical reason why *noodle* is count and not *spaghetti*.

Nevertheless, an explanation was given by Markman

(1985) as to why words such as *furniture* which apparently refer to discrete objects are non-count. Markman explained why many superordinate category terms, i.e. category terms of relatively high levels (e.g. *furniture*, *jewelry*, *money*), are mass nouns although conceptually they refer to diverse, discrete, countable objects. Let me take *money* as an example. Although we say, as many fairy tales go, "The king is counting his money in the palace", the word *money* is itself a non-count noun. If we can count money, *money* must refer to countable objects. Why is it a mass noun?

Markman's explanation was that mass nouns have the property of being a compromise between "collections" and "classes" and this property helps children to learn superordinate category terms. "Classes" have an inclusion structure; for example, all roses are flowers, but not all flowers are roses. The inclusion structure expresses the "is a" relation. A rose is a flower. A doll is a toy. In contrast, "collections" have a part-whole structure; for example, a tree is a part of a forest, but itself is not a forest.

Markman said that studies showed that children find it simpler to learn the part-whole structure than the inclusion relation. But collective nouns (e.g. *family*, *army*), said Markman, cannot be superordinate category terms because they do not express the inclusion relation. A soldier is a part of an army, but himself is not an army. However, a chair itself is furniture. A coin itself is money. Superordinate category terms like *furniture* and

money need to express the "is a" relation. Markman argued that mass nouns can be viewed as a compromise between part-whole and inclusion relations. A piece of clay is part of the whole mass of clay and each piece of clay is itself clay.

Markman's studies showed that children, at the age of 4, were better able to learn a new category such as "vehicle" if they heard "A car is a piece of vehicle" rather than "A car is a vehicle" (p. 31). Markman's conclusion was that "languages tend to use mass nouns to refer to superordinate categories because it helps children to learn them" (p. 51).

If Markman is right, L2 learners can expect English to evolve in the direction of regularizing all English category terms of relatively high levels to be mass nouns. Thus the learner would have a good rule to follow.

To sum up this section, the mass/count distinction lies in the meanings of mass and count words themselves: the latter specifies an individuation, but not the former. As a consequence, count nouns normally denote entities with a certain shape or precise limits; whereas the reference of a mass noun is normally a homogeneous continuum and not individuated. Being mass or count is part of the meaning of a word.

2.2 COUNTNESS OF NOUNS

Although traditionally nouns are classified into two types, count and mass, there are complications in that the

distinction between the two is not a simple binary one. In the very beginning of this chapter, it was noted that count nouns admit the singular article *a(n)*, but mass nouns do not. Yet it is found that there are mass words which nevertheless allow *a(n)* and there are count words which do not allow *a(n)*.

Allan (1980) challenges the traditional binary-feature notion of countness, which assigns either [+count] or [-count] to a given noun. He claims that instead of two, there are eight levels of countability: (p. 563)

REPRESENTATIVE	PERCENTAGE	LEVEL
car	100	7
oak	82	6
cattle	50	5
Himalayas	44	4
scissors	40	3
mankind	26	2
admiration	14	1
equipment	0	0

This chart indicates that a word like *car* is 100% countable, a word like *oak* is 82% countable, and a word like *equipment* is 0% countable. If a word is 0% countable, it is on the lowest countability level, 0. In contrast, if a word is 100% countable, it is on the highest countability level, 7.

Allan computes the countability of words by trying them

against four tests. In the following, I will take as examples five words from the above chart, *car*, *oak*, *cattle*, *mankind* and *equipment* to illustrate what Allan's countability tests are and how these five nouns behave in different environments.

(i) A + N Test: to see if the form "*a/an* + N" is grammatical or not, e.g.:

(5)a. *A car* is a convenient vehicle for transportation.
b. *An oak* is a tree.
c. *I saw *a cattle* in the field.
d. I'd like to see *a mankind* full of charity and sweetness.
e. **An equipment* in our lab was destroyed by the fire.

(ii) F(uzzy) + Ns Test: to see if a noun can be preceded by a fuzzy denumerator such as *several*, *many*, *about fifty*, e.g.:

(6)a. *Several cars* were crushed in the accident.
b. *Many oaks* were chopped down by the boy.
c. I saw *about fifty cattle* in the field.
d. *I have met with *several mankinds* and they are all different.
e. **Several equipments* in our lab were destroyed by the fire.

From (5) and (6) we see that *car* and *oak* pass both (i) and (ii) tests. On the other hand, *equipment* fails in both tests. In (5c) we see that *cattle* fails in the A + N Test, but in (6c) we see that it passes the F + Ns Test. Conversely, *mankind* passes the A + N Test, as shown in (5d), but fails the F + Ns Test, as shown in (6d).

(iii) EX(ternal)-PL(ural) Test: to see if an NP governs plural NP-external number registration, e.g.:

(7)a. *Those cars are* wonderful and I like *them* all.
b. *Oaks are* deciduous, aren't *they*?
c. *Those cattle are* dying for lack of water, aren't *they*?
d. *Mankind are* expected to give an account of *themselves* before God, aren't *they*?
e. **Equipment(s) are* essential, aren't *they*?

(7) shows that all the five words except *equipment* pass the EX-PL Test.

(iv) All + N Test: to see if the form "*all* + N + $V_{singular}$" is grammatical or not, e. g.:

(8)a. **All car is* convenient vehicle for transportation.
b. *All oak is* flammable.
c. **All cattle is* dying for lack of water.
d. *All mankind is* rational.
e. *All equipment* in our lab *was* destroyed by the fire.

(8) shows that *oak*, *mankind* and *equipment* pass the All + N Test; whereas *car* and *cattle* fail in this test.

Among the four tests, the All + N environment (Test (iv) above) is an uncountable one whereas the other three are countable. To compute the countness of nouns, Allan gives a plus to a noun if it passes a count test (Tests (i-iii) and he also gives a plus when a noun fails the non-count test (Test (iv)). *Equipment* fails in all the three count tests, and passes the non-count one. Hence it receives no plus and is 0% countable. For nouns of this category, there is no problem for us to assign the feature [-count] to them. However, words on Level 6, like *oak*, pass all of the count tests and also the non-count one. In terms of feature assignment, which

feature, [+count] or [-count], shall we give to them?

The four countability tests show that words on level 2, like *mankind*, pass the All + N Test and thus are non-count, but they admit the indefinite article, which non-count nouns normally do not. And they pass the EX-PL Test (i.e. take a plural verb or plural pronoun), which again non-count nouns normally will fail. Are they count or mass? The reader might suggest that we can treat words like *mankind* as either mass or count. Yet this treatment cannot rule out bad forms like *several mankinds*.

On the other hand, although words on level 5, like *cattle*, fail the uncountable All + N Test and thus they are not non-count nouns, they do not admit the indefinite article, which count nouns normally do. We cannot simply assign [+count] to them. We have to say, in addition, that they never take the indefinite article.

Being the opposite of words on level 5 (e.g. *cattle*), words on level 1, like *admiration*, *heat*, *sincerity*, *darkness* (derived nominals), and *physics* (names of subjects for study) pass the uncountable All + N Test and hence are non-count. Like typical mass nouns, nouns of this category do not admit fuzzy denumerators; nor do they govern plural NP-external number registration. However, unlike typical mass nouns, they admit the indefinite article. Some examples are as follows:

(9)a. *A physics* in which energy is lost rather than transferred is quite inconceivable; where would the energy go to?
b. *There are *several physics*: geophysics,

astrophysics, nuclear physics- and I don't know what else.

(Allan, 1980, p. 550)

c. **Those physics are* all difficult to study, aren't *they*?

For (9b), if we say "several types/kinds of physics" instead of "several physics", the sentence will become well-formed. Similarly, in (9a), *a physics* means 'a kind of physics', but the indefinite article itself without *kind of* does the job. Here we see a difference between the indefinite article and fuzzy denumerators.

Derived nominals like *heat* and *darkness* behave similarly.

(10) *A dry heat* is so much more bearable than *a damp heat*.

(11)a. *We got up in *a darkness*.
b. We got up in *a pitchy darkness*.
c. *An oppressive darkness* hung all around us.

(Allan, 1980, p. 559)

In (11a) we see that *darkness* does not behave like an ordinary count noun since it cannot co-occur with the indefinite article. However, in (11b) and (11c) we see that with a modifier, *pitchy* and *oppressive* respectively, the indefinite article becomes acceptable. Similarly, in (10), the two occurrences of the non-count noun *heat*, with the modifiers *dry* and *damp* respectively, become countable. Allan describes this kind of usage as "referring to instances or occasions of particular note" (p. 559).

The preceding usage of *a* was treated as one of the important functions of English articles in Frank's (1972)

exercises for non-native speakers. She comments on this as follows: (p. 160)

> In some sentences, noncountable abstract nouns with adjective modifiers may be used with *a*. In many such sentences *a* is the equivalent of *a kind of*.

If we use *a kind of* instead of *a* in (10) and (11b-c), we get:

(12) A dry kind of heat is so much more bearable than a damp kind of heat.

(13)a. We got up in a pitchy kind of darkness.
b. An oppressive kind of darkness hung all around us.

Does this mean that *a kind of* is a reliable test for using *a* with abstract mass nouns modified by adjectives or relative clauses? Consider:

(14)a. He provided us with a kind of information that only insiders can.
b. This is a kind of evidence that could be used to persuade people to believe in God.

If we delete *kind of*, both (14a) and (14b) become ungrammatical, as shown in (15):

(15)a. *He provided us with an information that only insiders can.
b. *This is an evidence that could be used to persuade people to believe in God.

Frank's rule does not tell us when *a* can replace *a kind of*; Allan's eight levels of countability tell us that this occurs when the noun in question is on level 1 (e.g. *darkness*, *heat*). Words on level 0, like *information* and

evidence, can never be used with *a*.

Notice that we can drop the indefinite article in both (10) and (11) and we get:

(10′) *Dry heat* is so much more bearable than *damp heat*.

(11′)a. We got up in *darkness*.
b. We got up in *pitchy darkness*.
c. *Oppressive darkness* hung all around us.

In (10′) and (11′) we see that after the dropping of the indefinite article, all the grammatical sentences remain well-formed and the ungrammatical one, (11a), becomes acceptable. Nevertheless, if we have restrictive relative clauses modify the underlined NP's, the indefinite article has to be put back again. Take (11′) for example:

(16)a. We got up in a/*Ø darkness that was really scary.
b. We got up in a/*Ø pitchy darkness that was really scary.
c. An/*Ø oppressive darkness that was really scary hung all around us.

Restrictive relative clauses seem to have a stronger effect on individuating the whole mass of darkness into different types than prenominal adjectives. Perhaps this is why the indefinite article is obligatory in (16), but optional in (11b) and (11c).

Besides derived nominals like *darkness*, and *heat*, and names of subjects for study like *physics*, Allan gives *English*, as a name for a language, as an example of words on level 1, i.e., abstract mass nouns that admit *a*:

(17) He speaks *an English* that I can barely

understand at all; and I was born in London.
(p. 558)

Some native speakers find (17), with the proper name *English* turned into a count noun, not acceptable. There is definitely no problem if, instead of (17), we say

(18) He speaks *a kind of English* that I can barely understand at all; and I was born in London.

This indicates that a language change, moving *English* from level 0, where mass nouns can never be used countably, to level 1, where mass nouns with modifiers can co-occur with *a*, is not yet complete.

To sum up this section, Allan's discussion shows that the grammatical correlates of the mass/count distinction are complicated by the fact that this distinction is not a simple binary one. There are words like *cattle* which are [+count] except that they do not admit the singular indefinite article *a(n)*. There are words like *heat* which are [-count] except that they admit *a(n)* under certain circumstances. Further, there are words like *oak* which are either [+count] or [-count]. Allan's four tests of countability, however, are of little help to L2 learners because the grammaticality judgements are exactly what is in question. Further it would be a great burden for L2 learners to learn which word falls on which level, so the existence of the levels is of little help. In the next section, I will discuss an alternative to the solution to the complications of the mass/count distinction offered

by Allan.

2.3 MASS/COUNT CONVERSION

The mass/count distinction, as has long been observed in the literature, is better taken as a distinction among word-senses, or ways of using words, rather than a distinction among words themselves. A good illustration of this point is found in nouns which denote either the animal or its flesh as food. For example:

(19)a. I don't eat chicken because I like chickens.
b. Lamb is delicious and lambs are lovely, too.

The singularity and plurality of *chicken* and *lamb* in (19) are determined by the different senses of the same words; and in turn, the grammatical correlates reveal the different senses of the words. When referring to the animal, *chicken* or *lamb* denotes a discrete countable object, and hence it is used as a count noun and thus has to take the form "*a/the* + N" or "Ø/*the* + Ns". In contrast, when referring to the flesh of the animal as food, *lamb* or *chicken* becomes non-count and thus has to take the form "Ø/*the* + N".

Besides the above animal/meat example, we have a lot more instances of shifts in sense leading to shifts in countness. Jespersen (1924, p. 199) gives us the following examples:

a parcel in brown *paper*	state *papers*
little *talent*	few *talents*
it is hard as *iron*	*a* hot *iron* (flat iron)

Ware (1979) in "Some bits and pieces" gives more examples of this kind:

(20)a. His *politics are* atrocious.
b. *Politics is* not his bag.
(p. 16)

(21)a. His *faculties* are intact.
b. how much *faculty* he has for the project
(p. 20)

(22) Many *glasses* do not have any *glass* in them.
(p. 17)

From these examples we see that many English nouns have both mass and count meanings. According to Allan's computation, these words, like *oak* (wood/tree), will fall on Level 6, with 82% countability. They pass all the three countable tests and also pass the uncountable test. In other words, they are either [+count] or [-count]. It is suggested here that words like these be treated as two words instead of one. Take the mass/count--meat/animal words as an example. *Chicken* is a name for both the animal and the meat. Yet as in the case of pork/pig or mutton/sheep, it could have been the case that for chicken too the animal and the meat were named by two different words. The word that named the animal, a discrete object, would be a count noun and the word that named the meat would be a mass noun.

Another example is found in the language/people words such as *Chinese*, *Italian*, and *Greek*. When referring to the people, the noun is count and when referring to the language, it is mass. Words such as *authority* (quality/person) constitute still another example of this

kind. The word *authority* has two distinct senses. When we are talking about special knowledge as in *write with authority* it is non-count; whereas when we are talking about a person with such knowledge as in *an authority on nuclear physics*, it is count.

In sum, ambiguities between a mass and a count meaning are likely to be found in wood/tree, meat/animal, language/people, and quality/person words. The same noun can be treated as two words. One that denotes the discrete object is count and the other that denotes the constituent substance or a peculiar quality of the discrete object is mass.

Words such as those we discussed above are clearly ambiguous between two distinct meanings. Other words may not involve an ambiguity, but they have both the count and the mass use. *Candy*, *hair*, *stone*, and *wine* are some examples. When we are talking about the substance or material, they are mass; whereas when we are referring to shaped pieces (instances) or kinds of the substance, they are count. For example:

(23)a. Do you want a candy?
b. Candy is bad for your teeth.

(24)a. I found a hair in my soup.
b. The cat has a fine coat of hair.

(25)a. The box is filled with heavy stones.
b. The wall was made of stone.

(26)a. This is a French wine.
b. I do not drink wine.

We have identified two groups of words which can be

readily used either in a count or a mass sense. Let us state this fact in the form of a conversion principle:

Principle 1:

Mass ~ Count: If a noun is used to denote a discrete entity, it is count; if it is used to denote the material content or a particular quality of the discrete entity, it is non-count.

On the other hand, there are many words like *car* and *book* which we believe behave only as count nouns. Notice that these words are 100% countable according to Allan's computation. But some linguists point out that given the right context, they can be used as non-count. For example, Gleason (1965) asks us to imagine an animal story "featuring a mother termite concerned over her child: 'Johnny is very choosey about his food. He will eat book, but he won't touch shelf'" (pp. 136-37). In this context, the mother termite is talking about the material constituents of books and shelves, but not the discrete objects themselves. Thus *book* and *shelf* become mass nouns. Conversely, a word like *ice cream* which we think behaves typically as a mass noun can be used countably. Gleason says, "...a customer, unable to choose between two brands, might say: 'I don't care; one ice cream is as good as another'" (p. 136). Here *ice cream* is used as a count noun. He concludes that "every noun, given the right context, can occur in either type of usage, count or mass" (p. 137).

Is it true that every mass noun can be used as a count noun and every count noun can be used as a mass

noun? Different linguists (or philosophers) hold different positions. Pelletier (1979, p. 5) says:

> I think that reflection on the example of above, [How many oatmeals are in your kitchen?] provides convincing evidence that every word which would normally be called a mass noun can be given a perfectly clear count sense.

Pelletier, like Gleason, holds that every mass noun can be converted into a count noun and also the opposite. He describes a thought experiment to persuade people that all count nouns can be given a mass sense. He asks us to imagine a machine, the Universal Grinder. The machine can chop and grind anything, say dogs, cats, cars, or men. Put whatever object you wish to, say a porcupine, into one end of the grinder. After the grinder chops the porcupine and grinds it up into a homogeneous mass and spews it onto the floor from the other end of the grinder, ask what is on the floor. The answer: "There is porcupine all over the floor". In real life, we do see porcupines, raccoons, and squirrels smashed by cars.

Pelletier is aware that his machine can only grind physical objects, and that there remains a problem for those count nouns which denote non-physical things. Nevertheless, he argues that the thing to be put into the grinder does not have to be grindable. If a normal sentence can use a count noun in a mass sense, his theory holds. His example is the word *number*. He uses this count noun in a mass sense in the following sentence: (p. 6)

(27) If numbers were physical objects, and if we were to put one into the grinder, there would be *number* all over the floor.

I will leave this issue to philosophers. I think that it is reasonable to say that practically every count noun which denotes an object with material content can be used in a mass sense, given the right context, that is, when we use the word to refer to the material constituent or the mass of the object, and not to the discrete object itself. I agree with Ware's (1979, p. 19) position:

> I do not think that all homophones with count occurrences have mass occurrences and vice versa. Words for orifices seem to have count but not mass occurrences, e.g. *opening*, *hole*, *mouth*.

Obviously there is no mass of openings or holes to be talked about. Furthermore, some nouns that denote abstract entities like *idea*, *trick*, and *characteristic*, do not seem to have mass occurrences.

To L2 learners, the conversion of count nouns into mass nouns causes fewer troubles, because after all cases like

(28)a. The scrapyard is full of *smashed car* awaiting recycling.
b. Emmy finds *squashed spider* more nauseous than the thing alive.
(Allan, 1980, p. 547)

are unusual and if the count nouns remain count, as shown in (29):

(29)a. The scrapyard is full of smashed *cars* awaiting recycling.
b. Emmy finds *a* squashed *spider* more nauseous than the thing alive.

the sentences still are well-formed. In other cases like *There was cat all over the road* describing, e.g. a poor cat smashed by a car, failure to convert the count noun into a mass noun, as in *There was a cat all over the road*, might lead to a semantic anomaly. However, if we state the conversion principle as follows:

> Principle 2:
>
> Count --> Mass: When we are talking about the undifferentiated mass of a physical object, but not the discrete object itself, the count noun denoting that physical object should be converted into a mass noun.

since the principle is well-defined, it will not cause too much confusion for L2 learners.

The conversion of mass nouns into count nouns, on the other hand, is much more troublesome. First of all, is it true that every mass noun can be used as a count noun? Recall the Universal Grinder that turns count nouns into mass terms. Bach (1986, p. 10) suggests an opposite switch, a machine called the Universal Packager that is capable of packing all substances into precise units and hence converting mass nouns into count nouns. In the mass/count conversion, the Universal Packager is supposed to have the same function as the Universal Grinder, though working in the opposite direction. However, it turns out to be not so plausible.

Since every concrete count noun denotes something with certain material content, when we want to talk about the

mass instead of the form denoted by a count noun, the right context arises for the mass use of the count noun. On the other hand, in a hypothetical world, we can have each and every substance denoted, e.g. by *water*, *milk* and *gold*, whatever you wish, packed by the Universal Packager. When the new product, say milk, comes out of the packager, what will be the answer to the question, "What is on the floor?" Will we answer "There is a milk on the floor" (or "There are milks on the floor")? Probably not; instead, the answer most likely will be "There is an X of milk on the floor" (or "There are Xs of milk on the floor"). A unit word X, e.g. *bottle*, *glass*, is still needed.

Why would the Universal Packager fail to convert mass nouns into count nouns? If we do not take *milk* as denoting a bounded and discrete object, we will not use it as a count noun. The Universal Packager can pack everything in natural units, but our intuition about word meaning does not change accordingly.

Although the Universal Packager fails to convert mass nouns into count nouns, the real world packaging does create some conversions. Jespersen (1924) claims that "in English, *bread* is only a mass-word" (p. 200). In the twenties, probably it is true that *bread* was used only as a mass-word, but it is no longer true now. We find a lot of occurrences of *bread* as a count noun. To cite only a few of them:

(30)a. coarse whole grains blended in *a* light brown *bread* (American Meal Bread ad)

b. For many years, so-called "diet" *breads* attempted to create the illusion... (Story of Less, Schafer's Less ad)
c. Try the other delicious Country Hearth *Breads*. Look for the Country Hearth family of quality variety *breads*... (Country Hearth ad)
d. The Mackinaw Milling Co. family of *breads* are all made with...to create a line of *breads* which can please...Whichever variety you choose, feel confident you're serving *a bread* which... (Mackinaw Milling Co. ad)

From the occurrences of *bread* in singular and plural forms in (30), it might be inferred that bread manufactures perceive the different kinds of bread they produce as well-defined, individuated objects, and the word *bread* is used countably to denote one "kind" of the mass.

Bread makers use *a bread* to denote a kind of bread and *breads* for different kinds of bread. L2 learners, however, cannot jump to the conclusion that all instances of "X kind(s) of bread" can be reduced to "X bread(s)", as in

(31) I went to Shop-Rite today. ?I bought two breads.

To some people, (31) is just ungrammatical. To some, at best *two breads* can be taken as "two loaves of bread", but not "two kinds of bread".

Bread denotes something edible and it can be packed into discrete units. Words denoting abstract entities such as *surgery* also can gain an individuation in their meaning and eventually gain a count sense. As I mentioned in section 2.1, *surgery* as opposed to *operation* is a non-count noun. However, in a survey that I did in which 50 subjects were asked to choose the one they preferred in the following

pair of sentences:

(32)a. I had a CHOLELITHOTOMY, which is surgery, and it was covered under surgical expense benefits.
b. I had a CHOLELITHOTOMY, which is a surgery, and it was covered under surgical expense benefits.

25 subjects chose (a) and 25 chose (b). In random interviews following the survey, one subject said that the reason he chose (a) was that *surgery* is basically a mass noun. Another subject said that he chose (b) because *CHOLELITHOTOMY* is not a term for surgery in general. Still another one said that although he chose (a), (b) was possible. A last one said that he chose (a), but he preferred *a form of surgery* than *surgery* alone. From this equal split of 25 to 25 and the comments made by the subjects, I conclude that *surgery* is undergoing a semantic change, moving from being mass to count.

In fact, a health insurance company worker, while she was explaining that different types of surgery are covered under different policies, did say this to me: "If you have *another surgery*...". Non-medical people probably would say, "If you have surgery again..." in this case. I think to health insurance workers, the word *surgery* has gained a discrete reference through constant application of the word to well-defined categories of surgery, exactly like the word *bread* to bread manufacturers.

In addition to *bread* and *surgery*, the real world "packaging" has brought about other count uses of mass nouns. In restaurant orders, we have occurrences of "a large coke",

"a small coffee", or simply "two coffees", "three cokes", etc. This is because in such places as fast food stands or stores, these drinks typically come in cups. Instead of saying "two cups of coffee" or "three cups of coke", the elliptical forms, "two coffees" or "three cokes" are used. However, when we are at an American friend's house, the host/hostess will not ask, "Would you like *a coffee*?" (meaning "Would you like a cup of coffee?"); nor will we answer, "Yes, a small coffee, please". The elliptical forms presumably are not used in these contexts because these drinks are not packed in some standard containers at home.

Summarizing the above discussion of *bread*, *surgery*, *coke* and *coffee*, let us state another conversion principle:

Principle 3:

Mass -- > Count: In commercial contexts, a mass noun, through constant application of the noun to well-divided instances of the referent, can gain an individuation for its reference and thus can be used as a count noun.

In this section, the complications of the binary mass/count distinction are resolved by treating the uses of a noun and not the noun itself as being mass or count. In contrast to Allan's approach, the countness of a noun is not treated as a question of percentage of countability. Instead, a noun is taken as being basically count (e.g. *book*, *car*) or mass (e.g. *bread*, *surgery*) or both (e.g. *chicken*, *authority*), and then a conversion principle is offered to account for its converse use. Three such

principles have been offered.

In the preceding section, it was noted that Allan identified a group of abstract nouns (e.g. *sincerity*) which are basically mass, but admit the singular article *a(n)* when they co-occur with a restrictive modifier. Let us state this in the form of a conversion principle:

Principle 4:

Mass -- > ?Count: Abstract non-count nouns such as a derived nominal or a name of a subject for study, when modified by a restrictive modifier, admit *a(n)*, which is the equivalent of *a kind of* in this context.

2.4 IMPLICATIONS FOR L2 LEARNERS

What implications does the preceding discussion have for L2 learners in their choice of English articles? In English, there is a systematic distinction in the choice of articles between two classes of nouns, count and mass:

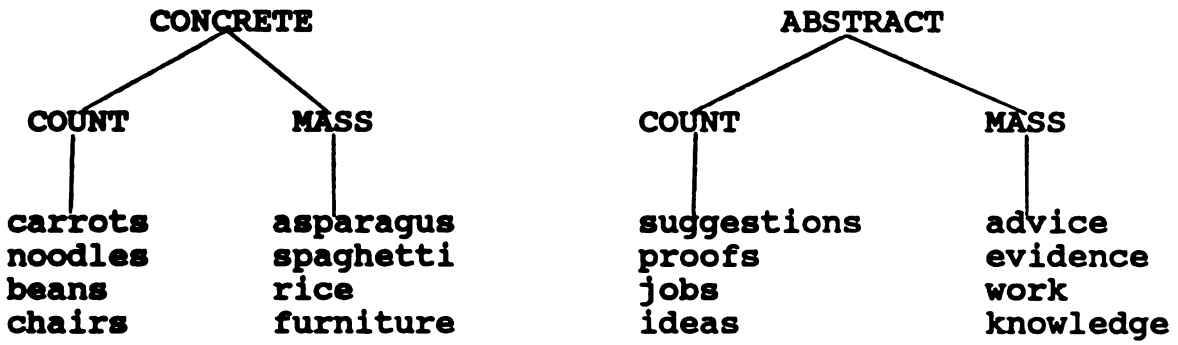
COUNT	MASS
the + N/Ns	the + N
a + N Ø + Ns	Ø + N

For mass nouns the choice is limited between Ø and *the* whereas for count nouns it is more complicated. It has to be decided first whether the noun in question is singular or plural. For singulars, the choice is between *a* and *the* and for plurals Ø and *the*. Ø or *a* on the one hand indicates indefiniteness and *the* on the other hand

indicates definiteness. Definiteness and indefiniteness (including singulars and plurals) will be discussed in the next chapter. In the above chart, we see only one overlapping, i.e. in the form *the* N. We cannot tell whether a given noun is used countably or uncountably just by looking at the form *the* N. In other words, only in cases where a noun is definite and at the same time it is singular, we do not have to make a distinction between count and mass nouns for the choice of articles. Except for cases like this, the question "Is this noun count or mass?" has to be answered first.

A L2 learner might want to answer this question through some kind of logical inference. A first hypothesis might be that nouns referring to concrete objects (e.g. "milk", "book") are countable and nouns referring to abstract entities (e.g. "idea", "music") are uncountable. But this is not true of English. A second hypothesis might be that only those nouns referring to discrete, differentiated concrete objects (e.g. "lettuce", "pillow") are countable. But this is not true, either.

In English, even for two concrete (material) nouns referring to objects with similar shapes, one can be count and the other mass. The same thing happens with abstract nouns. For two abstract nouns with similar meanings, one can be mass and the other count. This arbitrariness is exemplified as follows:



The arbitrariness of *noodle* being a count noun and *spaghetti* a mass noun, on the one hand, and *idea* being count and *knowledge* mass, on the other hand, suggests that the mass/count distinction is not simply in the nature of the things referred to. Being mass or count is part of the meaning of a word. A count word includes an individuation in its meaning, but not a mass word.

Furthermore, Allan's eight levels of countability suggest that the mass/count distinction is not a simple binary one. The traditional view that a noun is either [+count] or [-count] is inadequate. Not all English nouns have a fixed feature [+count] or [-count]. There are words like *oak* which are both [+count] and [-count]. There are words like *heat* which are [-count] except that they admit *a(n)* under certain circumstances.

The discussion of mass/count conversion shows that every concrete count noun can be converted into a mass noun (recall the Universal Grinder), but not vice versa. Gleason (1965), and Pelletier (1979) went wrong in saying that every mass noun can be converted into a count noun. Bach's (1986) Universal Packager cannot convert every mass noun to count,

overall picture of the mass/count distinction as I see it for L2 learning. I start with a common sense. The things in the world can be divided into two categories, abstract and non-abstract. Abstract entities do not have physical forms and hence do not occupy any space. Since they do not have physical forms, we cannot count them perceptually. Therefore, let us assume initially that nouns which denote abstract entities are all non-count. On the other hand, non-abstract entities can be divided into two subcategories. One contains discrete, differentiated objects, i.e. objects with definite outlines or precise limits. The other contains substances or masses that do not have natural boundaries. The former is presumably countable and not the latter. Therefore let us assume that nouns which denote the former are all count and nouns which denote the latter are all non-count. In brief, the three assumptions that I made are:

Assumption 1: Nouns which denote discrete objects are all count.

Assumption 2: Nouns which denote undifferentiated substances are all non-count.

Assumption 3: Nouns which denote abstract entities are all non-count.

Obviously, all of the three assumptions need to be modified. Assumption 1 that nouns which denote discrete objects are all count has a problem. There are nouns the referents of which come as discrete objects, but they are always non-count. *Asparagus*, *spaghetti*, *rice*, *lettuce*,

furniture, and *equipment* are some examples. The last two are superordinate category terms which tend to become mass, as Markman's (1985) claimed. Yet in English we still have a lot of superordinate terms which are count such as *vehicles*, and *toys*. Under our assumption, nouns which denote discrete objects should be count. Hence we still have to treat words like *furniture* as exceptions, although they have good reason to be mass, if Markman is right. It is suggested that for these exceptions, the learner learn each noun together with a unit word that it goes with, e.g. *a grain of rice*, *a head of lettuce*, *an article of furniture*. The countness of this type of noun has to be learned by rote.

If the above-mentioned exceptions can be taken care of, Assumption 1 and 2 can stand as they are, if we do not regard a noun as having a fixed feature of [+count] or [-count]. It is the sense that a noun has, not the noun itself, that determines whether it is count or mass. We have nouns with two distinct senses, such as *chicken* and *oak*. We have nouns with both the count and the mass use, such as *candy* and *hair*. We have nouns which are normally count but given the right context can be used uncountably, such as *car* and *book*. For all these nouns, when used to denote a discrete object itself, they are count; whereas when used to denote the material constituent or the mass of the discrete object, they are mass, as made clear in Conversion Principles 1 and 2.

Although we have expressions such as *a large coke* and *a light brown bread*, assumption 2 that nouns which

denote undifferentiated substances are all non-count is still valid, because Conversion Principle 3 states that only in commercial contexts do these expressions occur.

Parallel to our assumption about discrete objects, Assumption 3 that nouns which denote abstract entities are all non-count has a problem, too. There are nouns which denote abstract entities, but they are always count. *Tricks*, *ideas*, and *characteristics* are some examples. It is suggested that the learner learn the plural form Ns or the singular form *a(n)* N, and not simply N, for these words. This is another type of noun whose countness has to be learned by rote.

There is a second problem for Assumption 3. Allan (1980) identified a group of abstract nouns which are normally non-count, but when they are modified by a restrictive adjective or relative clause, they admit the singular article *a(n)*, which is equivalent to *a kind of* in this kind of context. This group of nouns includes names of subjects for study like *physics* and *chemistry*, and derived nominals like *sincerity*, *admiration* and *heat*. To maintain Assumption 3, we have to treat this group of words as exceptions. Conversion Principle 4 takes care of it.

Nevertheless, not all derived nominals that are modified by restrictive modifiers allow *a(n)*. *Information*, *evidence*, and *knowledge* are some examples. These are abstract nouns which are always non-count, exactly the opposite of those abstract nouns like *tricks* and *ideas* which

are always count. They have to be learned by rote. Again, it is suggested that learning the word together with a unit word that it goes with (e.g. *a piece of evidence*) might be of help.

For the rest of the abstract nouns, they are all non-count except for two situations. First, there is a group of nouns which has two distinct senses. One of the two senses denotes a certain abstract quality, and the other denotes a person that possesses this quality. *Authority* and *gossip* are two examples. When a noun is used to denote the person, it is count; when it is used to denote the quality, it is non-count. In fact, if we treat this kind of noun as being ambiguous in the sense that what we have is two different words instead of one, then they are not a problem for our assumptions.

The second situation where abstract nouns are not non-count is when separable instances of a certain quality or action, and not the quality or action itself, are referred to. *Suggestion*, *discussion*, *difficulty*, and *experience* are some examples of words that have both the count and the non-count use. Unlike concrete nouns such as *candy* and *hair*, which also have both uses, for abstract nouns, it is harder to decide when to use which. The general principle is that when things are done at different times or are of a different nature, they are individuated and hence the count use is the right choice. For example:

(34)a. After several long *discussions*, we finally reached the conclusion that...

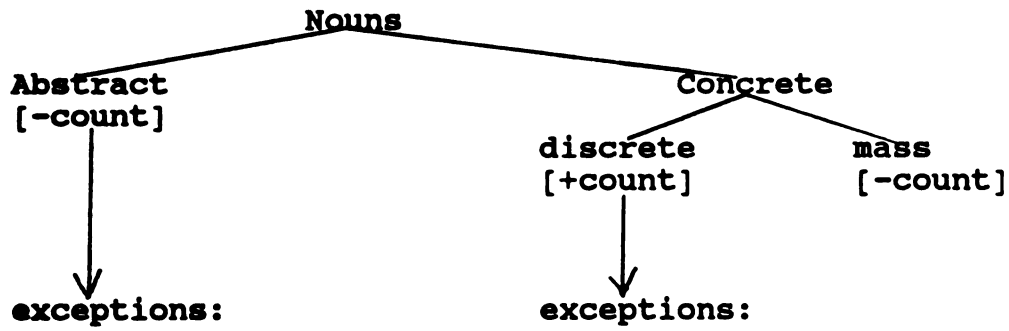
b. Chomsky's *discussions* of transformational grammar and the theory of government and binding were boring.

On the other hand, consider:

(35)a. What implications does the preceding *discussion* have for L2 learners in their choice of English articles?
b. What implications do all the preceding *discussions* have for L2 learners in their choice of English articles?

The context for (35) is that I am writing a thesis on the topic of English articles. Since the discussion is on one topic and done by one person and within a single unit, sentence (a), the non-count use, is a better choice.

In brief, the whole picture of the mass/count distinction presented above is as follows:



a) *tricks*, etc.

b) *a sincerity*, etc.

c) *discussions*, etc.

rice, etc.

Chapter III

Definiteness and Indefiniteness

3.0 INTRODUCTION

This chapter addresses the question: What makes an NP definite and what makes it indefinite? We have noted that the grammatical correlates of articles with the distinction between count and mass nouns are as follows:

	Count	Mass
Definite	the + N/Ns	the + N
Indefinite	a + N Ø + Ns	Ø + N

If an NP is definite, regardless of whether the head noun is used countably or uncountably, *the* is used. On the other hand, if an NP is indefinite, *a(n)* is used for singular count nouns and the zero article is used for plurals and mass nouns. If we can make explicit what makes an NP definite and what makes it indefinite, it will help L2 learners in their choice of articles.

In this chapter, it is argued that "existence", "uniqueness" and "familiarity" are three characteristics of definite NPs that distinguish them from indefinite NPs. Section 3.1 addresses the problem of existence claims carried by statements containing definite and indefinite NPs. Section 3.2 discusses the uniqueness and non-

uniqueness properties of definite and indefinite NPs. Section 3.3 is about familiarity. Section 3.4 deals with indefinites. Finally, section 3.5 is some concluding remarks.

3.1 EXISTENCE CLAIM

Russell's (1905) well-known analysis for *the* contains two claims about the definite article. He analyzes (1a) as having (1b) as its logical structure:

(1)a. The king of France is bald
b. $\exists x$ (Kx & $\forall y$ (Ky -> y = x & Bx)

In (1b), Kx stands for "x is king of France" and Bx stands for "x is bald". (1b) says that there is an individual such that he is king of France and that no one but him is king of France and that he is bald. To assert (1a) is to assert three things: (a) there is a king of France, (b) there is not more than one king of France, and (c) there is nothing which is king of France and is not bald. Among these three, what concerns us now is the first. To Russell, the definite description "the king of France" in (1a) entails the existence of the individual, king of France. If there is no king of France, (1a) is false.

Strawson (1950) disagrees with Russell's analysis. He argues that if there is no king of France, the question whether the statement of (1a) is true or false simply does not arise. Strawson says that when someone says to you, "The king of France is wise", you will not say, "That's

untrue". Instead you will probably say, "There is no king of France." From this, Strawson argues, we can see that for the statement of (1a) to be judgeable to be true or false, there must be a background assumption that there is a king of France. For a statement to be true or false, its presupposition(s) must be true. When presuppositions fail, statements have no truth value.

In brief, Strawson differs from Russell in that under Strawson's analysis, the existence of individuals referred to by definite descriptions is presupposed, and not part of the assertions of the statements containing those descriptions.

Quine (1960, p. 113) takes a similar position to Strawson's. He says:

> Sentences like "Mama sings" and "I saw the lion", which contain definite singular terms, may indeed be said to depend for their truth on the existence of objects named by those terms, but...they do not clearly become false failing such objects. Failing objects of reference for their definite singular terms, such sentences are likely to be looked upon as neither true nor false but simply as uncalled for.

From the above remarks, we see that Quine, like Strawson, holds that definite NPs presuppose the existence of objects denoted by those NPs.

At this point, I think that two semantic relations, entailment and presupposition, need to be clarified . A sentence A semantically entails a sentence B if and only if every situation that makes A true, makes B true. For example:

(2)a. I saw the lion.
b. There was a lion.

(3)a. The person wearing a green hat killed Smith.
b. There was a person wearing a green hat.

In both (2) and (3), if sentence (a) is true, sentence (b) must be true, i.e. we cannot find a situation where (a) is true and (b) false. Therefore (2a) entails (2b) and (3a) entails (3b).

On the other hand, a sentence A semantically presupposes a sentence B if and only if A entails B and the negation of A also entails B. For example:

(4) I did not see the lion.

(5) The person wearing a green hat did not kill Smith.

We have seen that (2a) entails (2b). Does (4), the negation of (2a), also entail (2b)? That is, can we imagine (4) being true and (2b) false? No. Whenever (4) is true, (2b) must also be true. Hence (4) entails (2b). Since (2a) entails (2b), and its negation also entails (2b), we say that (2a) presupposes (2b). Similarly, (3a) presupposes (3b). Although there are problems with the semantic notion of presupposition illustrated above (e.g. the projection problem for presuppositions; see Levinson, 1983, pp. 199-204), those problems do not affect the claim that definite NPs presuppose the existence of objects denoted by those NPs.

We see that a definite description like *the lion* or *the person wearing a green hat* not only entails the

existence of the referent of the description, but also presupposes it. How about indefinites? Consider:

(6)a. I saw a lion.
b. I did not see a lion.
c. There was a lion.

(6a) entails (6c), but (6b), the negation of (6a), does not. Hence (6a) does not presuppose (6c). Affirmative statements containing indefinites such as (6a) entail the existence of the entities denoted by the indefinite NPs, but they do not presuppose it.

The hypothesis that indefinite NPs do not carry existential presuppositions can be further supported by examples such as:

(7)a. You must give her a call.
b. I should have written him a letter.

It is impossible for the indefinite NP *a call* in (7a) or *a letter* in (7b) to carry an existential presupposition because in (7a) the call has yet to come into existence by virtue of your calling him; and in (7b) the counter-factual verb form *should have written* implies a negation and hence the non-existence of the letter in question.

Karttunen (1969, 1976) points out that if we go on to refer to such non-existing entities as those in (7) by using the definite article, which carries an existential presupposition, a semantic anomaly arises, as shown in

(8)a. You must give her a call. ?She is expecting the call.
b. I should have written him a letter. ?The letter

was crucial for my promotion.

Note, however, if the continuation is in the same "world" as its preceding sentence, the semantic anomaly will not arise, as shown in

(9)a. You must give her a call. She will be very happy to receive the call.
b. I should have written him a letter. The letter would have been crucial for my promotion.

In (9a), the modal *must* in the first sentence creates a world and the second sentence keeps the same world through the modal *will*. Similarly, in (9b), both sentences occur in a counter-factual world.

This indicates that the existence which a definite NP presupposes can be of various kinds. We can have existence in the actual world, in a future world, in a counter-factual world, in a dream world, etc. The semantic well-formedness of the anaphoric use of *the* depends on the consistency of the world in which it occurs with that of the antecedent.

When we say that definite descriptions carry existential presuppositions, the existence we talk about is always "discourse existence", and not necessarily real existence in the real world. A speaker can presuppose the existence of the entity he is talking about, whether the entity at issue really exists or not. The discourse creates a world of its own. For example, the sentence *The king of France is wise* is grammatical, although there exists no king of France. The king of France exists in the discourse world. Lack of real existence in the real world does not

lead to ungrammaticality or any semantic anomaly.

From the above discussion, we get one semantic distinction between definite and indefinite NPs. That is, definite NPs presuppose the existence of entities denoted by those NPs whereas indefinite NPs do not; they merely entail it. For L2 learners, this means that in deciding which article to use, definite or indefinite, they must ask whether or not the existence of the entity in question can be brought into the discourse in some way. If the answer is no, the use of the definite article will be infelicitous. For example, a person can say, "Is the king coming?", presupposing there is a king, but if the king in question has not been introduced into the discourse in some way, that is, without a proper context, his question will be infelicitous, although it is grammatical.

How does a certain entity come into existence in discourse? The most obvious way is through an explicit previous mention. For example:

(10)a. She checked out a book on fish yesterday. And she has finished reading *the* book.
b. I saw a unicorn. *The* unicorn was hurt.

In (10a), the first sentence entails that there was a book on fish that she checked out yesterday. The second sentence goes on to talk about the same book. In (10b), the first sentence, like that in (10a), entails that there was a unicorn that I saw. Although in reality there exists no unicorn, the existence of a unicorn is brought into the discourse as a consequence of the statement *I saw a unicorn*.

This has been labelled "the anaphoric use" of *the*.

A second way is through an association with an entity that has been mentioned previously. For example:

(11) She checked out a book on fish yesterday. And she has read ten books by *the* same author.

In (11), if there exists a book, the person who wrote it must have existed at some point. By mentioning a book, the existence of its author is introduced into the discourse by inference.

A third way is through the immediate situation where the discourse occurs. For example:

(12)a. Pass me the salt, please.
b. Watch out for the dog.

In (12), the addressee may or may not be aware of the existence of the salt or the dog, but its existence can be brought into the discourse through the command because if it is a felicitous command, the salt or the dog in question must be in the immediate situation.

The existence of the entity in question can also be brought into the discourse through an immediate linguistic follow-up, as in

(13)a. This chapter addresses *the* question: What is the responsibility of intellectuals?
b. Here is *the* answer: The responsibility of intellectuals is to expose the lies of governments.

In (13), the existence of the entities in question is brought into the discourse by what follows immediately after

the entities are mentioned.

A fourth way is through shared knowledge between speaker and addressee. For example:

(14)a. I'm going to the library.
b. The mayor visited our school yesterday.

In (14a), the existence of the library is brought into the discourse through the mutual understanding that there is a library that the speaker goes to. In (14b), it is the mutual knowledge that there is a mayor in the city where the speaker (and the addressee) lives that brings the existence of the mayor into the discourse.

For sentences like (10)-(14), the above four ways account for the fulfillment of the first requirement of the use of *the*: since *the* carries existential presuppositions, the existence of the entity in question must be brought into the discourse in some way. A common characteristic of these four ways is that the entity denoted by the definite NP must find a so-called "anchor" for its existence. The anchor may be an explicit previous mention, or an association with such a mention, or the immediate discourse context or shared knowledge between speaker and addressee.

Besides these simple cases, we have numerous complicated ones. By *simple* and *complicated*, I am referring to the internal structure of the noun phrase. How do we account for the existence of the entities denoted by the definite NPs in the following cases (quoted from McCawley's (1976) introductory remarks on Karttunen's paper "Discourse

Referents", pp. 363-64):

(15)a. Karttunen's paper can be described as a summary of *the work on reference that generative grammarians were about to do for the next five years*.
b. ...existential quantifiers have *the dual function of asserting existence and of introducing a constant that can figure in subsequent discourse*.

In (15a), the underlined definite NP is composed of a head NP followed by a restrictive relative clause, and in (15b), it is composed of a head NP followed by a conjunction of two *of* phrases. What can be the anchor for the existence of the two entities denoted by the definite NPs? None of the above four ways can be applied to these cases. For (15a), it has been argued by Smith (1969), Vendler (1967) and others that restrictive relative clauses can serve as a grammatical previous mention.

For Vendler, *the* can be used with a noun only when the noun is "identified" by a sentence. According to Vendler, a sentence identifies a noun if it connects the noun with a definite NP. In some cases, Vendler notes, "nouns are identified by the mere presence of a verb in the past tense" (p. 64). Consider:

(16)a. *The* man that I met wore a hat.
b. I met *a* man.

According to Vendler, the noun *man* in (16a) is identified by (16b) because (16b) connects the noun with a definite NP, *I*, and the verb *met* is in the past tense. We see that a relative clause can serve as a grammatical previous mention

in the sense that a sentence like (16a) can be interpreted as

(17) I met a man. The man wore a hat.

Following the line of the argument, sentences like (15a) can be interpreted as:

(15)a'. Generative grammarians were about to do some work on reference for the next five years. Karttunen's paper can be described as a summary of that work.

Along the same line, we can say that (15b) can be interpreted as:

(15)b'. Asserting existence and introducing a constant that can figure in subsequent discourse is a dual function. Existential quantifiers have this dual function.

Thus, *of* phrases, like restrictive relative clauses, can also serve as a grammatical previous mention.

All relative clauses miss one constituent, the head NP, and hence structurally, to fill the missing slot, the head NP can appear in the relative clause as a first mention of the entity. However, semantically, a relative clause may fail in bringing the existence of the entity in question into discourse, and hence *the* is impossible. For example:

(18) He welcomed me with a/Ø/*the warmth that he had never shown before.

(18) cannot be interpreted as

(18′) He had never shown (any) warmth before. He welcomed me with that (kind of) warmth.

We see that if a relative clause contains a negative predicate, it fails to serve as a grammatical previous mention, because the existence of the referent of the head NP is explicitly denied by the relative clause.

In fact, even in a case like

(19) He welcomed me with a/Ø/*the warmth that was not at all surprising.

where the existence of the entity denoted by the head NP is not denied by the relative clause it still fails to serve as a grammatical previous mention. (19) cannot be interpreted as

(19′) Warmth was not at all surprising. He welcomed me with that (kind of) warmth.

In (19) the relative clause does not delimit a particular kind of warmth and hence it fails to serve as a grammatical previous mention. In contrast to (19), consider:

(20) He welcomed me with the warmth that was characteristic of him.

(20) can be interpreted as

(20′) Warmth was characteristic of him. He welcomed me with that (kind of) warmth.

Note that (19) and (20) are similar in meaning. But one allows *the* and the other does not.

In brief, restrictive relative clauses can serve as

grammatical previous mentions except when they contain a negative word which either contributes to an explicit denial of the existence of the entity denoted by the head NP or deprives the relative clause of its delimiting power.

As for *of* phrases, the relation between NP_1 and NP_2 in the form "NP_1 *of* NP_2" is different. It can be of various kinds. Only when they stand in a particular relation can the *of* phrase serve as a grammatical previous mention. For example:

(21)a. In this article, we discuss *the significance of intuitions*... (Gass, 1983, p. 274)
b. *The interpretation of such phrases* is a matter of considerable difficulty... (Russell, 1905, p. 93)
c. *The failure of presuppositions* leads to truth-valueless sentences.

In (21a), the *of* phrase can function as a grammatical previous mention in that the sentence can be interpreted as:

(21)a'. Intuitions are significant. In this article, we discuss that (kind of) significance.

In (21a') we see that the existence of the entity denoted by the definite description *the significance of intuitions* is brought into the discourse through an association with an explicit mention of the concept of the entity expressed in the form of a statement, *Intuitions are significant*.

Similarly, (21b) and (21c) can be interpreted as:

(21)b'. We (people) interpret such phrases. That (kind of) interpretation is a matter of considerable difficulty.
c'. Presuppositions fail. That failure leads to truth-valueless sentences.

Summarizing the three cases in (21), we find three different relations held between the head NP and the *of* phrase:

(21a) the significance of intuitions < intuitions are significant

NP_1 of NP_2 < NP_2 be adjective

(NP_1 is a derived nominal of the adjective.)

(21b) the interpretation of such phrases < we (people) interpret such phrases

NP_1 of NP_2 < Verb NP_2

(NP_1 is a derived nominal of the transitive verb.)

(21c) the failure of presuppositions < presuppositions fail

NP_1 of NP_2 < NP_2 Verb

(NP_1 is a derived nominal of the intransitive verb.)

We see that when a head NP stands in any of these three relations with the object of the *of* phrase, the *of* phrase can serve as a grammatical previous mention. Let us call these relations a thematic relation.

Besides the thematic relation, we see another kind of relation in (15b), repeated here:

(15)b. ...existential quantifiers have *the dual function of asserting existence and of introducing a constant that can figure in subsequent discourse*.

b′. Asserting existence and introducing a constant that can figure in subsequent discourse is a dual function. Existential quantifiers have this dual function.

In (15b), the relation is:

(15b) the dual function of asserting... < Asserting...is a dual function

NP_1 of NP_2 < NP_2 is NP_1

(NP_2 is in apposition to NP_1)

Two more examples of this relation:

(22)a. *The subject of denoting* is of very great importance... (Russell, 1905, p.93)
b. I shall now attempt partially to clarify *the notion of referring*. (Searle, 1969, p. 26)

(22) can be interpreted as:

(22)a'. Denoting is a subject. This subject is of very great importance.
b'. Referring is a notion. I shall now attempt partially to clarify this notion.

Let us call this kind an appositive relation. Finally we have a relation of possession as in:

(23)a. It is widely accepted that *the language of second language learners*...is a system in its own right. (Gass, 1983, p. 273)
b. Presuppositions can be created or destroyed in *the course of a conversation*. (Lewis, 1979, p. 172)

(23) can be interpreted as:

(23)a'. Second language learners have a language of their own. It is widely accepted that this language is a system in its own right.
b'. A conversation has a course of its own. Presuppositions can be created or destroyed in this course.

To sum up, in the form of "NP_1 of NP_2", if NP_1 and NP_2 have a thematic, appositive, or possessive relation, the *of* phrase, like the restrictive relative clause, can serve as a grammatical previous mention. Now consider:

(24)a. In order to get *the *custody of his daughter*, he made an appointment to see his lawyer.
b. The Joneses are getting a divorce, but it has not been decided who will have *the *custody of their children*.

In (24), we do not find a thematic or appositive or possessive relation between *custody* and *his daughter/their children*. Thus the *of* phrase cannot serve as a grammatical previous mention in this case. In addition, there is no other proper way available to bring the existence of the entity, custody of his daughter/their children, into the discourse. As a result, the first requirement for the use of *the* cannot be fulfilled.

Many other forms of restrictive noun modifier, such as infinitives, present participles, past participles, and prepositional phrases headed by *between*, *from*, *at*, etc., can be regarded as a reduced form of restrictive relative clauses and hence can serve as grammatical previous mentions.

Summarizing this section, the definite article carries existential presuppositions and hence the first requirement for the use of *the* is that the existence of the entity denoted by the definite description must be brought into the discourse in some way. It can be introduced by an explicit previous mention, association with such a mention, or a

grammatical previous mention. The immediate discourse context or shared knowledge between speaker and addressee can also bring the existence of an entity in question into the discourse . The fulfillment of this first requirement, however, does not necessitate the use of *the*. It only makes it possible, as a first step, so to speak, to use *the*. A proper use of *the* needs to meet two other requirements, uniqueness and familiarity, which will be discussed in the next two sections.

3.2 THE (NON)-UNIQUENESS PROPERTY OF (IN)DEFINITE NPs

In the preceding section, we started our discussion with Russell's analysis of *the*. We mentioned that he makes two claims about the definite article. First, it entails the existence of the entity named by a definite description. We have also noted that this claim is challenged by Strawson and others. We came to the conclusion that it is existential presuppositions and not simply entailments that definite NPs carry. We now turn to discuss Russell's second claim. Recall the content of the second part in his logical structure for *The king of France is bald* is that there is only one king of France. This is the well-known uniqueness analysis of *the* by Russell.

If uniqueness means one and only one individual, obviously it can apply only to the use of *the* in singular count nouns, but not to plurals or mass nouns. Seeing this, Hawkins (1978) argues that uniqueness is not part of the meaning of *the*. Instead, in his theory, *the* implies

inclusiveness and *a(n)* exclusiveness. By inclusiveness, it is meant that a referring expression with the linguistic form "*the* (modifier) noun (modifier)" refers inclusively to the totality of the set of objects designated by the definite description. And by exclusiveness, it is meant that an indefinite description refers exclusively to "not-all", i.e., there exists at least one object meeting the description to be excluded from the reference of the indefinite description.

Some examples to illustrate this point are as follows:

(25)a. Fred lost a leg/?nose in the war.
b. Fred lost some fingers/?arms in the war.

(26)a. Fred is the/*a taller of the two.
b. We went to see a house, but we didn't buy the house because the/*a roof was broken.

In (25a), *Fred lost a nose* is odd because Fred has only one nose, but the use of *a* requires that there should exist at least one other nose of Fred's to be excluded from the reference. In (25b), *Fred lost some arms* is odd because it means Fred lost at least two arms, but the use of the indefinite *some* requires that besides the two arms that Fred lost, there should exist at least another arm of Fred's to be excluded from the reference. Similarly, in (26a), within a set of only two people, the number of the taller people must be exactly one and in (26b), a house usually has only one roof; hence in both cases, it is impossible to exclude at least one object from the reference of the indefinite description.

Does the inclusiveness and exclusiveness theory of *the* and *a* make correct predictions of the use of the two articles? I pointed out in my master's thesis (1985) that the theory runs into trouble with articles as head NP determiners of restrictive relative clauses. Hawkins tries to distinguish two subtypes of restrictive relative clauses to prevent the exclusiveness meaning of *a* from applying where it should not apply. Consider:

(27)a. A girl who lives in Chicago sent me a nice Valentine card.
b. A book that I read last night gave me a big headache.

In (27a), there is no problem for the exclusiveness meaning of *a* to apply; there is at least one other girl living in Chicago. In (27b), however, Hawkins is aware that his exclusiveness meaning of *a* should not apply because (27b) does not necessarily indicate that I read more than one book last night.

Hawkins' two subtypes of restrictive relatives are called "establishing relative clauses" and "non-establishing relative clauses". Two major diagnostics are presented for these two types of relative clause. The first diagnostic is as follows:

> ...sentences with establishing relative clauses permit semantically identical paraphrases in which the content of the establishing relative clause becomes a main clause.
> (p. 267)

For example:

(28)a. A story that I read ten years ago contained the same plot.
b. A story which was very long contained the same plot.

(28a) contains an establishing relative clause, and (28b) a non-establishing relative clause, because (28a) can be paraphrased as (28a'), but a similar paraphrase of (28b) is unacceptable as shown in (28b'):

(28)a'. I read a story ten years ago and it contained the same plot.
b'. ?A story was very long and it contained the same plot.

The second diagnostic for establishing relatives is as follows:

> [An establishing relative clause] functions pragmatically to relate the new referent to previously mentioned or known objects, to participants in the talk exchange, or to objects in the immediate situation.
> (p. 263)

For example:

(29)a. What's wrong with Tom? Oh, he flunked in a test he took yesterday.
b. What's wrong with you? Oh, a tape-recorder that I bought last week was broken.
c. Would you please go and get me a book that is over there on the shelf in the right-hand corner?

The relative clauses in these examples are all establishing relatives. In (29a), the relative clause *he took yesterday* relates the new referent *test* to a previous mentioned object, Tom; in (29b), the relative clause *I bought last week* relates the new referent *tape-recorder* to a participant

in the talk exchange, I; and in (29c), the relative clause

that is over there on the shelf in the right-hand corner

relates the new referent *book* to the immediate situation.

By distinguishing these two subtypes of restrictive relatives, Hawkins has the following to say with regard to the exclusiveness meaning applying to indefinite head NPs followed by restrictive relative clauses:

> ...indefinites with establishing relatives do not carry the exclusiveness presupposition...these sentences [containing establishing relatives] do not presuppose that there are other excluded referents, but only that there may be such referents, whereas *a truck which is blue* [a non-establishing relative] does presuppose the existence of more than one.
>
> (pp. 266-67)

As can be seen from the above quotes, it is clear that Hawkins holds that indefinites with non-establishing relatives carry the exclusiveness presupposition, whereas indefinites with establishing relatives do not.

Unfortunately his diagnostics fail to make correct predictions. According to the two diagnostics, sentences like the following:

(30)a. A zoologist who lives in Detroit is coming to see me this Sunday.
b. A linguist who works on Black English Vernacular is giving a lecture tonight.
c. A man who became quite well-known for receiving an artificial heart died yesterday.

all contain a non-establishing relative clause. They fail in the paraphrasability test (Hawkins' first diagnostic for establishing relatives), as shown in the following:

(30)a'. ?A zoologist lives in Detroit and he is coming to see me this Sunday.
b'. ?A linguist works on Black English Vernacular and he is giving a lecture tonight.
c'. ?A man became quite well-known for receiving an artificial heart and he died yesterday.

They also fail in Hawkins' second diagnostic because in (30), none of the relative clauses relates the new referent to previously mentioned or known objects, or to participants in the talk exchange, or to objects in the immediate situation. However, the exclusiveness meaning of *a* should not apply here because none of the sentences in (30) indicates that there necessarily exists at least one excluded referent meeting the description of the indefinite NP.

In my 1985 thesis I concluded that NPs of the form "*a(n)* X which Y's" do not actually carry the exclusiveness presupposition. They only suggest that there is a possibility of more than one X satisfying the description of Y's. The linguistic form *a girl who lives in Boston* itself does not carry the exclusiveness presupposition. Rather, it is the world knowledge that makes us infer that there is more than one girl living in Boston. The indefinite article can be used with a restrictive relative even if there is only one object meeting the description of the restrictive relative.

Hawkins' distinction between establishing and non-establishing relative clauses does not work with *the* as head NP determiner of restrictive relatives, either. Hawkins claims that the definite article with an establishing

relative can function successfully as a first-mention, whereas the definite article with a non-establishing relative cannot. For example:

(31)a. The game that we played in gym today was terrific.
b. The man who was from the South was disgusting.

According to Hawkins, in (31a), the relative clause is an establishing relative because it relates the new referent *game* to participants in the talk exchange, we, and because it can be paraphrased as:

(31)a'. We played a game in gym today and the game was terrific.

Hawkins says, "The purpose of the establishing relative is thus to do what a previous mention would do" (p. 138). *The* in (31a) hence can function successfully as a first-mention. In (31b), however, the relative clause is a non-establishing relative because the following paraphrase is unacceptable:

(31)b'. ?A man was from the South and the man was disgusting.

The in (31b) hence cannot function as a first-mention. In other words, *the* in (31b) must be anaphorical.

The best attack on the above claim of Hawkins' is to find two syntactically-similar sentences containing two restrictive relatives which relate the head nouns to objects of the same nature, but one turns out to be able to use *the* as a first mention and the other fails to do so.

Allan (1986, p. 128) provides such an example:

(32)a. *The* woman I saw collecting tickets at the station this morning looked just like my mother.
b. *The* woman I saw at the station this morning looked just like my mother.

Both sentences in (32) pass Hawkins' paraphrasability test, as shown in

(32)a'. I saw a woman collecting tickets at the station this morning and she looked just like my mother.
b'. I saw a woman at the station this morning and she looked just like my mother.

And both relatives relate the head noun to a participant in the talk exchange, I. Hence both relative clauses are establishing relatives. However, in (32a), the underlined *the* can function as a first mention; whereas in (32b), it would not usually be acceptable as a first mention.

Taking a closer look at (32), we find that whether *the* can be a successful first mention or not depends on whether or not the head NP together with the restrictive relative clause ends up referring to only one individual. In (32a), uniqueness is guaranteed because there is usually only one station functionary; whereas in (32b), it is highly possible that a person sees more than one woman at a station at a certain time and hence uniqueness is not guaranteed. If uniqueness is not guaranteed, without an explicit previous mention, the addressee will not know which one is being talked about.

Summarizing my discussion on Hawkins' inclusiveness and

exclusiveness theory of the definite and indefinite article, I have pointed out that his distinguishing two subtypes of restrictive relative clauses to prevent his exclusiveness meaning of *a(n)* from applying where it should not apply fails to do the job for him. I have also pointed out that his distinction between the two subtypes also fails to predict when *the* can be used as a successful first-mention. Consequently, his exclusiveness theory for indefinites and his distinction between establishing and non-establishing relative clauses should be abandoned.

I argue for Russell's uniqueness theory, but first of all, the notion of uniqueness must be expanded to cover plurals and mass nouns. Uniqueness means one and only one for singular count nouns, and it means all for plurals and mass nouns. For example, *the book* indicates that there is one and only one book; *the books* refers to all the books there are in the relevant domain of interpretation; and *the water* refers to all the water there is in a discourse context. This treatment does not mean that *the* has two meanings. Basically, the uniqueness defined here is like Hawkins' inclusiveness. A definite description of the form "*the* + NP(s)" refers to the totality of the set of objects designated by that description. For singular count nouns, there is one and only one member in the set, and hence the total is only one object. For plurals and mass nouns, the total is all that there is in the set.

Note that although *the* presupposes uniqueness, *a* does not presuppose non-uniqueness. This is exactly where

Hawkins' exclusiveness theory went wrong. In (29) and (30), repeated here:

(29)a. What's wrong with Tom? Oh, he flunked in *a* test he took yesterday.
b. What's wrong with you? Oh, *a* tape-recorder that I bought last week was broken.
c. Would you please go and get me *a* book that is over there on the shelf in the right-hand corner?

(30)a. *A* zoologist who lives in Detroit is coming to see me this Sunday.
b. *A* linguist who works on Black English Vernacular is giving a lecture tonight.
c. *A* man who became quite well-known for receiving an artificial heart died yesterday.

in all cases *a* is used, but none of the cases indicates that there necessarily exists at least one excluded referent satisfying the description of the indefinite NP. This is a piece of evidence that *a* does not carry the exclusiveness presupposition or that it is not necessarily non-unique, to put it in another way. In all the cases in (29) and (30), *a* is used because in none of these cases, is uniqueness guaranteed. In (29a) it is possible that a person takes more than one test in a day; in (29b) it is possible that a person bought more than one tape-recorder last week, etc.

On the other hand, when uniqueness is not guaranteed, it does not follow that the referent of an indefinite expression is necessarily non-unique. (29a) is consistent with the situation where he took only one test yesterday and (29b) is consistent with the situation where I bought only one tape-recorder last week. But because uniqueness is not guaranteed, *a* is used.

Quite contrary to Hawkins' exclusiveness theory, Kadmon

(1987) reported that to some people, the following discourse

(33) A cat walked in. It sat down.

is not felicitous in a situation where there is more than one cat that walked in. This means that *a cat* here must be unique in some way. It has been argued in section 3.1 that the first requirement for the use of *the* is that the existence of the entity in question must be brought into the discourse in a proper way. In (33), although to the speaker, the uniqueness requirement is met, since the cat has not been properly introduced, *the* cannot be used.

In sum, my analysis differs from Hawkins' in two ways. First, he treats definites and indefinites as exactly opposite to each other. To him, *the* carries the inclusiveness presupposition and hence *a(n)* carries the exclusiveness presupposition. I have shown that *a(n)* + N does not necessarily indicate that there exists more than one object designated by the indefinite description in the relevant domain of interpretation. Under my analysis, the form "*a(n)* N" is used, not because there exists more than one entity designated by N, but because either the existence of the entity denoted by N has not been properly introduced into the discourse or because uniqueness is not guaranteed in the sense that the addressee has no way of knowing that the entity in question is the only one. In Kadmon's example, (33) above, although the speaker knows there was only one cat that came in, the addressee has no way of knowing it without shared knowledge.

Secondly, to Hawkins, the referent of "*the* X which Y's" can be a first-mention only when the relative clause is an establishing relative. I have shown that his (non)establishing relatives fail to make correct predictions. Under my analysis, the question again lies in whether or not uniqueness is guaranteed, as shown in (32).

My proposal for the choice between the definite article *the* and the indefinite *a(n)* or the zero article depends on whether the existence and the uniqueness requirement, plus another one, the familiarity requirement which I will discuss in the next section, are all met or not. If yes, *the* is the right choice; if not, *a(n)* or the zero article is to be used. The question now is how to decide whether a given entity is unique or not.

In the following, I will focus on NPs modified by *of* phrases and NPs with restrictive relative clauses. In the literature, it is often noted that when a noun is modified by an *of*-phrase, the definite article is often used. Christophersen (1939, p. 43) says:

> A great many *of*-phrases demand a *the*. The curious thing is that the same is not true to such a wide extent of other prepositional phrases.

Christophersen (pp. 148-9), however, mentions a counter-tendency to the above-cited remarks:

> When the first substantive is an action-noun having as its object the regimen of "of".
>
> Examples: ...The Somme butchery led to *discussion* of other slaughters / ...They were drawn together by *examination* of the scanty

flora...

This counter-tendency, unfortunately, is in effect cancelled by Christophersen's (p. 149) own remarks immediately following his examples for that tendency:

> In many of these examples the *the*-form might as well have been used. In fact, in slow and careful style the article is now more often used in these cases...

With all these remarks, Christophersen's position on articles with *of* phrases amounts to saying that a great many *of* phrases demands *the*, and for action nouns, *the* is optional, depending on speech style. His observations might be correct, but we want to know exactly when *the* is required and when it is not allowed.

Following the theory we have been developing here, to use *the*, two requirements have to be met. The first one is the existence requirement. An *of* phrase will not demand *the* if this requirement is not met, as in the example I gave in the preceding section: *In order to get custody of his daughter, he made an appointment to see his lawyer*. Since *custody* and *his daughter* do not stand in a thematic, or appositive, or possessive relation, the *of* phrase here cannot serve as a grammatical previous mention and hence the existence of the entity in question cannot be brought into the discourse.

The second requirement is uniqueness. Consider:

(34)a. Describe procedures for protecting against or minimizing potential risks and *an assessment* of their likely effectiveness. (MSU regulations on

research on human subjects, 3A)
b. If *methods* of research create potential risks, describe other methods... (3B)

In (34a), assessments of the procedures in question can be more than one, and hence uniqueness is not guaranteed; the researcher is asked to describe only one of the possible assessments. Similarly, in (34b), methods of research can be more than one and some, not necessarily all, methods may create risks.

For nouns which are basically count, like *car* and *book*, it is relatively easier to know whether the entity in question is unique or not, because there is an element of individuation in count nouns, and in a sense we can count their reference. For nouns which are basically either [+count] or [-count], it is a little bit harder to decide. For example:

(35) A student who has been on an F-1 visa for eight consecutive years must apply for *an* extension of stay. (*News & Notes* 16.1, 1987, Office of International Students and Scholars, MSU, p. 3)

To make the right choice of articles for the phrase *extension of stay*, first of all, it has to be decided whether the noun *extension* is count or mass. Basically it can be either count or mass, as in

(36)a. The extension of Soviet influence in Central America is a threat to the United States.
b. I'm glad I've got an extension of my summer holidays.

The context of (35) indicates that students must apply for

their individual extension of stay and it can be done at different times; hence individuation is possible for *extension* here. After it is decided that the word can be used as a count noun in this context, we ask, "Is the referent of *extension of stay* here unique?" The answer is no because a student applies for his own extension and he applies for one extension at one time.

For nouns which are basically mass, because there is no natural boundary implied for the reference of a mass noun and especially, for abstract mass nouns, because there is no real tangible thing out there, it is much more difficult to decide whether a given entity is unique or not. Christophersen's observation that a great many *of* phrases demand *the* is true of abstract mass NPs modified by *of* phrases. Consider:

(37)a. This phase is marked by *the advent* of terms like 'roundness'... (Quine, 1960, p. 118)
b. We saw that *the emergence* of abstract singular terms is not to be... (p. 120)

In (37), the abstract mass nouns *advent* and *emergence* by themselves denote homogeneous continua without implied boundaries. The *of* phrase, however, delimits their reference to a limited, specific territory. Within this specific territory, the abstract entity, advent of terms like 'roundness', or emergence of abstract singular terms, is all there is. This is why the uniqueness requirement is always met.

Note that other prepositions such as *from* and *in* do not

have such a delimiting power. It has long been observed that we say *music from the south*, but we say *the music of the south* and we say *life in the nineteenth century*, but we say *the life of the nineteenth century*. Prepositions such as *in* and *from* are locative. In the phrase *music from the south*, the prepositional phrase *from the south* only specifies where the music in question is from. It does not delimit the music to a particular kind; music from the south can involve various kinds of music. Further, notice that in the preceding section it was noted that a phrase like *the music of the south* can be taken roughly as *the south has its own music*, i.e. the two nouns stand in a possessive relation. If we possess something that cannot be individuated, the possession is always inclusive. If the south has its own music, it has all of it. Therefore, in the form "N of NP", if N and NP stand in a possessive relation, and N is used as a mass noun, the uniqueness requirement is always met.

However, in cases like

(38)a. This is Ø evidence of the existence of dinosaurs.
b. I find Ø evidence of this second class to be even more convincing... (Bickerton, 1981, p. 146)

In (38a) the phrase *evidence of the existence of dinosaurs* can be taken roughly as 'the existence of dinosaurs is evident'; that is, in the form "N of NP", N and NP stand in a thematic relation. The uniqueness requirement is not met in (38a) because the sentence means 'This is a piece of evidence of the existence of dinosaurs'. On the other hand,

in (38b) *evidence of this second class* can be taken roughly as 'this second class is evidence'; that is, N and NP stand in an appositive relation. The uniqueness requirement is not met in (38b) because not all instances of this second class as evidence have been given. A major difference between abstract mass words such as *evidence* and those such as *advent* and *emergence* in (37) is that the former can go with a measuring word like *piece*, but not the latter. The uniqueness requirement is always met when an abstract mass noun which cannot go with any kind of measuring word is modified by an *of*-phrase, as illustrated in (37). In cases like (38), where the abstract non-count head noun can co-occur with a measuring word, the uniqueness requirement is not always met.

How about Christophersen's remarks on action nouns, which are abstract mass nouns, that *the* is optional, depending on speech style? A similar hypothesis is made by Tang (1986). He says (pp. 114-5) that if the head noun comes from an intransitive verb *the* is used, whereas if it comes from a transitive verb either *the* or Ø is used. For example:

(39)a. Our efforts succeeded.
    b. the success of our efforts

(40)a. We accept such a policy.
    b. the/Ø acceptance of such a policy (is unlikely)
(p. 115)

To test Tang's hypothesis, I asked 50 subjects to choose the sentence they like better from each of the following pairs

of sentences:

(41)a. *The* use of a dictionary is not allowed in this test.
b. Use of a dictionary is not allowed in this test.

(42)a. Interpretation of a text may differ from person to person.
b. *The* interpretation of a text may differ from person to person.

(43)a. *The* recognition of ambiguities is very hard for second language learners.
b. Recognition of ambiguities is very hard for second language learners.

(44)a. Prevalence of bribery among officials often leads to the fall of a government.
b. *The* prevalence of bribery among officials often leads to the fall of a government.

(45)a. Some linguists hold that *the* failure of presuppositions leads to truth-valueless sentences.
b. Some linguists hold that failure of presuppositions leads to truth-valueless sentences.

(46)a. Failure of crops often results in famine.
b. *The* failure of crops often results in famine.

The only difference in (a) and (b) in each pair is the choice of articles; one contains *the* and the other Ø. In (41)-(43), the head noun of the NP containing the *of*-phrase each comes from a transitive verb, i.e. *use*, *interpret* and *recognize*, respectively. In contrast, in (44)-(46), the head nouns come from intransitive verbs. In (44), it is *prevail* and in both (45) and (46) it is *fail*.

The result of this survey is shown in the following chart:

	the	Ø	both
(41)	25 50%	24 48%	1 2%
(42)	22 44%	27 54%	1 2%
(43)	18 36%	31 62%	1 2%
(44)	33 66%	16 32%	1 2%
(45)	34 68%	15 30%	1 2%
(46)	20 40%	28 56%	1 2%

The result shows that for the pair of sentences in (41), the choice between *the* and Ø is almost equally split; 50% of the subjects, i.e. 25 people, chose *the*; 48%, i.e. 24 people, chose Ø and 2%, 1 person, chose both. For (42), the choice was close, too. (43), however, shows a significant difference in the choice. Most people prefer Ø to *the*.

For nouns which come from transitive verbs, out of the three cases tested, two have an approximately equal chance of co-occurring with either *the* or Ø, and one has a greater chance of co-occurring with Ø. As for nouns which come from intransitive verbs, the survey shows the majority prefer *the* in (44) and (45), but in (46) slightly more people like Ø better.

Tang's hypothesis that nouns which come from intransitive verbs co-occur with *the* was not borne out perfectly because in (46) we have 56% of the people

preferring the use of Ø. His hypothesis that nouns which come from transitive verbs co-occur with either *the* or Ø was supported, but we find that in (43), 62% of the people prefer the use of Ø.

How can we explain all these results? *Recognition* in (43) differs from *use* in (41) and *interpretation* in (42) in that the former is much more an action noun than the latter two. *Recognition* is mostly used as a non-count noun because of the sense of action it carries from its verb counterpart; whereas *use* and *interpretation* can be used as count nouns in many cases. The generalization seems to be that if a noun is used in its action sense, the demand for the use of *the* is weakened. On the other hand, if it is used in a non-action sense and in a very specific situation, *the* is preferred. For example, in contrast to (42a), (repeated here), which is a general statement of a certain state of affairs, in (47) *the* is much more preferable:

(42)a. Interpretation of a text may differ from person to person.

(47) *The* interpretation of this sentence comes out like this: ...

In a word, action nouns followed by *of* phrases indeed weaken the demand of *the*. However, it is not simply a matter of speech style, as Christophersen suggested. Tang's hypothesis that it is transitivity that determines the choice between *the* and the zero article was not supported, either. Instead, the data above shows that it is activity that affects the choice. As for *failure* in (46), the

reason why 56% of the subjects prefer the use of Ø might be that without *the*, the sentence is more law-like. Generic NPs will be discussed in the next chapter.

Summarizing, in the form "N *of* NP", if the *of* phrase can serve as a grammatical previous mention, and if the uniqueness requirement is met, *the* can be used. For abstract mass nouns which cannot go with any kind of measuring word, with the modification of the *of* phrase, the uniqueness requirement is always met. Action nouns, however, weaken the demand for *the*.

Now I turn to the discussion of NPs containing restrictive relative clauses. As with NPs containing *of* phrases, it seems easier to determine whether a given count noun is referring uniquely or not. For example:

(48)a. ?God spoke to a man who begot Isaac. (Vendler, 1967, p. 51)
b. I know the men who fought in Korea. (p. 50)
c. I know men who fought in Korea. (p. 51)

In (48), *man who begot Isaac* must refer to only one person; it refers to the individual, Abraham. Uniqueness is guaranteed in (48a), and hence *the* is required. In (48b-c), *men who fought in Korea* refers to more than one person; if the speaker knows all of them, *the* is used; if he knows some of them, Ø is used.

How about mass nouns? Consider:

(49)a. The food that he ate this morning made him sick.
b. He eats food that makes him sick. (Abbott, p.c.)

(50)a. The coffee that I drank this morning is keeping me wide awake.
b. Coffee from which extract is made is grown in the lowlands. (Quine, 1960, p. 111)

In (49a), *food that he ate this morning* specifies a particular quantity of food and within this specification, that is all there is; thus the uniqueness requirement is met. In (49b), *food that makes him sick* does not specify a particular kind (or quantity); it can be of various kinds of food. Similarly, in (50a), *coffee that I drank this morning* has a specific reference, but in (50b), *coffee from which extract is made* does not; it can be of various kinds of coffee.

Now consider abstract mass nouns:

(51)a. I don't understand *the Chinese* that he speaks.
b. He speaks *the *Chinese* that I don't understand.

(51a) can be interpreted as:

(51)a'. He speaks Chinese. I don't understand that kind of Chinese.

(51b), however, cannot be interpreted as:

(51)b'. I don't understand Chinese. He speaks that kind of Chinese.

Thus, in (51a), the relative clause can serve as a grammatical previous mention whereas in (51b), it cannot. Furthermore, in (51a), *Chinese that he speaks* specifies a particular kind of Chinese whereas in (51b), *Chinese that I don't understand* cannot refer to a specific, natural

category of Chinese. It has been noted in the preceding section that a negative word in a relative clause to some extent deprives the relative clause of its delimiting power.

To sum up this section, I have argued that to use *the*, a second requirement, the uniqueness requirement, has to be met. I discussed the possibilities for the fulfillment of the uniqueness requirement for NPs containing restrictive relatives and *of* phrases. For count nouns, if there is only one individual referred to by the whole NP, the requirement is met. If the whole NP refers to all individuals in the discourse context, the requirement is also met. For mass nouns, the requirement is met only when the whole NP specifies a specific, natural portion of the mass. *Of* phrases always bring about this specification when modifying an abstract mass noun which cannot go with any kind of measuring word.

One counterexample to the uniqueness requirement is mentioned in Kadmon (1987). It is cases like *He kissed her on the cheek*. Despite the fact that everybody has two cheeks and we do not know which cheek received the kiss, *the* is used. Note that we have similar expressions like *He took her by the arm*. We can treat these exceptions as collocations.

3.3 FAMILIARITY

Familiarity has long been held to be crucial in the use of *the*. Christophersen (1939), Jespersen (1949) and Heim (1982) have argued for it. The problems still open to

debate are: what counts as being familiar with the referent of the definite NP? To whom is it familiar, only the speaker or both the speaker and addressee? How is familiarity achieved?

Pica (1983, p. 226) reported an investigation she made:

> Upon arriving in an unfamiliar community, the researcher asked a young woman for directions:
>
> A: Can you tell me where I can find a drug store?
> B: Oh. That's right inside *the terminal*.
>
> A: Terminal?
> B: Yeah. You don't know *the terminal*?
>
> A: No.
> B: Oh. You're not from around here?

In this short dialogue, in the first exchange, the young woman took the location of the terminal to be shared knowledge between her and the researcher. But it was not. The researcher needed to be able to identify its location in order to get to the store. Thus clarification is needed. In the second exchange, the terminal was mentioned again. This time it becomes "familiar", although the researcher still could not identify it; "familiar" in the sense that it had just been mentioned.

I mentioned in section 3.1 that restrictive relative clauses can serve as a grammatical previous mention. The familiarity that they bring about is different from an explicit previous mention. Consider:

(52)a. I met a poet last night. *The* poet is giving a lecture today.
b. *The* poet that I met last night is giving a lecture today.

In (52a), we have an explicit mention of the poet and hence the second mention of it is "completely familiar"; whereas in (52b), without an explicit previous mention, *the*, to most people, cannot be a successful first-mention. Consider, however, the following case:

(53) I'm fed up with *the* plumber that came to fix my kitchen sink this morning.

The plumber himself, like the poet in (52), may be unfamiliar to the addressee to the same extent, e.g., he does not know anything about the plumber except that he is a plumber. Yet, to most people, *the* in (53) is acceptable as a first-mention.

The familiarity difference involved in (52b) and (53) is not with the individual that the whole NP refers to but with the event it refers to. A plumber's fixing kitchen sinks is not something unusual, and hence it is easy for the hearer to accept *the* (plumber) as a first-mention; whereas it is rather unusual for a person to meet a poet downtown and hence it is hard for the hearer to accept *the* (poet) as a first-mention.

This phenomenon is called "bridging" (e.g. Clark, 1977) or "accommodation" (e.g. Lewis, 1979) in the literature. Although a relative clause can serve as a grammatical previous mention, if the information provided is unusual, it is harder for the addressee to adjust his assumptions. Consider:

(54)a. *The* zoologist that I talked to this morning

told me that the monkey is man's best friend.
b. *A* zoologist that I talked to this morning
told me that the monkey is man's best friend.

The relative clauses in (54) can serve as a grammatical previous mention, and hence the existence of the entity in question has been brought into the discourse. Our first requirement for the use of *the* is met. In the preceding section, it was argued that in sentences like (54), because uniqueness is not guaranteed in the sense that there is a possibility that the speaker talked to more than one zoologist on a certain morning, our second requirement for the use of *the* is not met. Therefore, the subject NP in (54a) cannot be a first mention. Here we have another explanation. The relative clause in (54) provides rather unusual information. If the addressee does not know anything about the speaker's talking to a zoologist or he does not expect this kind of event at all, "accommodation" or "bridging" is less likely to occur.

In (54b), the indefinite *a* is used because of the unfamiliarity of the event. It does not indicate that there necessarily exists more than one zoologist spoken to that morning by the speaker. However, in a case like

(55)a. *The* test that I took yesterday was really hard.
b. *A* test that I took yesterday was really hard.

if the addressee knows that the speaker is a student and it is, say, finals week, the NP in (55a) can be a successful first mention. Although the addressee does not know either that the speaker took a test or that it is exactly one test

that the speaker took, nevertheless, when he hears (55a), he can readily accept *the* (test) as a first mention because the gap he has to fill in is not too big. That is, "bridging" or "accommodation" is possible. Notice that in this situation, if the speaker uses *a* as in (55b), it implies that he took more than one test.

We see that if accommodation is possible, there is no reason to use *a* when the entity in question is unique. This is in sharp contrast to the case in (54b) where *a* is used not because of non-uniqueness but because of the unfamiliarity of the event. Given cases like (55a), our uniqueness requirement has to be modified a little bit. According to the preceding section, we would say that in (55) *the* (test) cannot be a successful first-mention because uniqueness is not guaranteed in that it is likely that the speaker took more than one test on a certain day. Now we have to allow a situation in which the uniqueness requirement is met so long as the speaker, although not the addressee, knows that the entity in question is unique. To use *the*, nevertheless, the familiarity requirement also has to be met. (55a) meets the familiarity requirement, but not (54a). Thus we can allow *the* in (55a), but not in (54a), to be a successful first-mention.

Besides the familiarity difference involved in the events referred to by the head NPs together with their restrictive relative clauses, linguistic expressions themselves might bring about some differences in familiarity. Tang (1986, p. 108-111) says that in the form

"*with* NP + restrictive relative clause", if the verb in the relative clause belongs to the "expected" category (e.g. *expect*, *characteristic*), *the* is used with the head NP; whereas if the verb belongs to the "surprising" category (e.g. *surprising*, *incredible*), *a* is used. The rationale behind this rule may be that the first category of verbs suggests familiarity, and the second unfamiliarity. But he says that without the preposition *with*, there is no such a restriction. (He does not explain why there should be such a difference.) His examples are as follows:

(56)a. The amateurs defeated the pros with the/*a/*Ø regularity that was characteristic of this group of amateurs.
b. The amateurs defeated the pros with *the/a/*Ø regularity that was surprising.
(p. 110)

(57) The/An/*Ø impression that is characteristic/surprising is that he is not out of mind. (p. 111)

To see how much familiarity is brought about by verbs belonging to the "expected" category, and whether the preposition *with* makes a difference, the following pairs of sentences were given to 50 subjects:

(58)a. He welcomed me with *a* warmth that was characteristic of him.
b. He welcomed me with *the* warmth that was characteristic of him.
(59)a. At the welcome party, he showed *the* warmth that was characteristic of him.
b. At the welcome party, he showed *a* warmth that was characteristic of him.

If Tang is correct, in (58), all (or almost all) the subjects should choose *the* because the predicate

characteristic in the relative clause belongs to the "expected" category. The result, however, is that 54%, i.e. 27 subjects (more than half) chose *a*; 42% chose *the* and 4% chose both. Further, there is not much difference in the choice between the two pairs. In (59), 54% chose *the* and 42% chose *a*, 4% chose both. This indicates that the *with*-phrase does not affect the choice.

Warmth that was characteristic of him indicates that the speaker is somewhat familiar with the referent, and hence *the* is possible; however, to approximately half of the subjects, *a* was preferred. This suggests that although an entity is familiar to the speaker, if he thinks that it is unfamiliar to the addressee, *a* is preferable. We see that in cases like this, the familiarity requirement is met for some speakers, but not for others. Those who prefer *the* probably assume that "bridging" or "accommodation" is likely to occur on the part of the addressee. And those who prefer *a* probably do not.

In numerous cases, familiarity with the referent of a definite NP such as Quine's *the advent of terms like 'roundness'* and *the emergence of abstract singular terms* (cited in (37)) comes to us through the denoting phrase itself. In a sense the description is specific enough to satisfy our curiosity. In (32), repeated here:

(32)a. *The* woman I saw collecting tickets at the station this morning looked just like my mother.
b. *The* woman I saw at the station this morning looked just like my mother.

in (a), the description about the woman in question is sufficient to bring about familiarity in that normally there is exactly one person fitting the description. Although the addressee may not be able to identify the woman, he knows which one is being talked about. In contrast, in (b), the description is not sufficient because it is highly possible that there is more than one person fitting the description. In cases like (32a) and (37) familiarity is brought about by uniqueness.

In sum, familiarity can be achieved through uniqueness. Specific descriptions of the whole NP which refers uniquely bring about familiarity in the sense that the addressee's curiosity is satisfied with the descriptions. A unique explicit previous mention (e.g. *a book* and later *the book*) or association with such a mention (e.g. *a book* and later *the author*) also brings familiarity by virtue of mentioning.

The familiarity requirement is met when the speaker assumes that "bridging" or "accommodation" is likely to occur on the part of the addressee. This assumption might be based upon somewhat objective judgement of the familiarity of the event the speaker is referring to. For example, a plumber's fixing the speaker's kitchen sink is supposed to be more familiar to most people than the speaker's meeting a poet downtown. The assumption that "bridging" is possible might also be based upon personal relationship between speaker and addressee. For example, to a friend who knows that he is a student and that it is

finals week, the speaker may well say, "I'm upset with the test I took yesterday", but to somebody who knows neither, he would probably say, "I'm upset with a test I took yesterday".

At this point, let me clarify the relations among the three requirements posited for the use of *the*. To use *the*, first of all, the existence of the entity in question has to be introduced into the discourse in some way. If what is introduced is not unique, the second requirement is not met. For example, in "I met three persons. ?The person wore a hat", although the existence of the entity in question has been introduced by an explicit previous mention, *the* is not possible here because the entity in question is not unique with respect to the discourse, the addressee does not know which one out of the three is referred to.

If uniqueness is guaranteed, i.e. it is known to both speaker and addressee, familiarity is achieved. If uniqueness is known only to the speaker, but not to the addressee, only when "bridging" or "accommodation" is assumed to be possible can familiarity be achieved.

3.4 INDEFINITES

I have argued that to use *the*, three requirements, the existence requirement, the uniqueness requirement, and the familiarity requirement, all have to be met. Further, if all of them are met, *the* has to be used. Hence the three requirements posited here are necessary and sufficient conditions for the use of the definite article. To meet the

existence requirement, the existence of the referent has to be brought into the discourse by an explicit previous mention, or association through such a mention, or shared knowledge, or the immediate discourse context, or a grammatical previous mention. To meet the uniqueness requirement, the referent has to be unique in the sense that in the relevant domain of interpretation, for count nouns there is only one individual fitting the description or all the individuals fitting the description are included; for mass nouns the description must be specific enough to individuate a natural portion of the mass (e.g. *the water in the glass*, *the love she felt for him*). To meet the familiarity requirement, the referent must be familiar to the hearer in the sense described.

I now turn to the discussion of the use of *a(n)* and the zero article. It has been noted that if any of the three requirements for the use of *the* is not met, *the* cannot be used. This entails three things. First, the use of *a* or the zero article occurs when the existence requirement is not met, i.e. when the existence of the entity in question has not been properly introduced into the discourse. For example:

(60) a. I read *a book* today.
b. I had dinner with *friends* last night.
c. I used to have *tea* after dinner.

Assuming that the addressee does not know anything about the event that is going to be reported, the speaker uses an indefinite to start a conversation.

Secondly, the use of *a* or the zero article occurs when the uniqueness requirement is not met, i.e. when there is at least one entity fitting the description excluded. For example:

(61)a. I know a person who works in the Administration Building.
b. I know people who work in the Administration Building.

According to the theory developed in this chapter, in (61), the existence of the entity in question, i.e. people who work in the Administration Building, has been introduced by the relative clause which serves as a grammatical previous mention. Presumably there is more than one person working in the Administration Building. If the speaker knows only one person there, as in (61a), *a* is used; if he knows more than one person, but not all the people there, as in (61b), the zero article is used.

Thirdly, the use of *a* or the zero article occurs when the familiarity requirement is not met, i.e. when the speaker thinks that the entity in question might not be familiar to the addressee. For example:

(62) *A zoologist* that I talked to this morning told me that the monkey is man's best friend.

(62) can be a case in which the speaker talked to only one zoologist, but since it is quite unusual for a person to talk to a zoologist, the speaker thinks that the addressee might not be familiar with the event and uses *a*, instead of *the*.

Note that the difference between *a* and the zero article is not that the latter is simply the plural counterpart of the former. This is because *a* and the zero article have their own meanings. An NP determined by *a* can be specific or non-specific; whereas a plural NP determined by the zero article can only be non-specific. Carlson (1977) points out that *a* NP and ØNPs differ in several ways. In the following I will discuss two of the differences that Carlson mentioned to make clear what is meant by "specific" and "non-specific".

One difference that Carlson points out is the opacity phenomena. A sentence like:

(63) Mary wishes to meet a violinist.

has two readings. On one reading, there is some particular violinist that Mary has in mind, and she wishes to meet him. This is the specific or transparent reading. On this reading, the NP *a violinist* is specific, denoting a particular violinist who is known to Mary, but not to the addressee. On the other reading, the non-specific or opaque reading, Mary's desires are fulfilled by meeting anyone, so long as that person is a violinist. On this reading, the NP *a violinist* is non-specific, denoting an unspecified violinist.

Carlson points out that this ambiguity between a specific and non-specific reading disappears when the singular NP *a violinist* turns into a plural determined by the zero article, as shown in

(64) Mary wishes to meet violinists.

(64) has only the non-specific reading according to which Mary's desires are fulfilled by meeting more than one person, so long as those persons are violinists. What is absent is the specific reading according to which there is a particular group of violinists that Mary has in mind, and she wishes to meet them. We see that a plural NP determined by the zero article like *violinists* can only be non-specific.

Carlson points out that if we use other plural determiners like *many*, *all*, *three*, and *sm* (reduced *some*), we can have both the specific and the non-specific reading. For example:

(65) Mary wishes to meet three violinists.

In (65), *three violinists* can denote either three particular violinists or any three unspecified violinists.

Notice that in the above examples we have an "opacity-creating" verb, *wish*. This kind of verb, including *want*, *believe*, and *think*, expresses our propositional attitudes such as desire and belief. The non-specific reading arises in sentences with this kind of verb because the object of our wish or belief does not have to exist in the actual world. By contrast, in the following sentences

(66)a. Mary met a violinist.
b. Mary met sm violinists.
c. Mary met violinists.

we do not have an opacity-creating verb. All of the three sentences entail that there was something that Mary met. Nevertheless, the indefinites *a violinist* and *sm violinists* have both the specific and the non-specific use whereas *violinists* has only the non-specific use. In the non-specific use, all of the three indefinites are attributive in the sense that they are used to attribute the property of being a violinist to the kind of person Mary met. And the difference among the three sentences is only in the number of violinists that Mary met. In (a), it is exactly one; in (b) it is three or more; and in (c), it is more than one. In the specific use, since the singular article *a* can mean 'a particular one', *a violinist* can be used specifically to denote a particular violinist. Since *sm* can mean a certain number of particular ones, *sm violinists* can be used specifically to denote a particular group of violinists. Yet the zero article does not have a meaning which specifies a particular one or a particular group; it does not have a specific use.

The non-specific use of *a* and *sm* in non-opaque contexts is most clearly seen in imperatives and questions. For example:

(67)a. Do you have a pen?
b. Take sm apples.

In both (a) and (b) the natural reading for the indefinite NP is the non-specific, not the specific.

Another difference between *a* NP and ØNPs that Carlson

mentioned is found in cases like

(68)a. An accident happened today at 3, 4:30, and 6.
b. Accidents happened today at 3, 4:30, and 6.
(p. 421)

In (68a), the prominent reading for *an accident* is the specific one, i.e. there was one accident, the same one, which happened three times; whereas in (68b) *accidents* is non-specific, i.e. it was a different one (or a different group of accidents) that happened at the three different times. Hence (68a) is semantically odd while (68b) is not. A L2 learner needs to know that an NP with *a* favors a wider scope reading than a plural determined by the zero article, so that he can avoid using sentences like (68a).

Concerning the choice between indefinite singulars and plurals, there is another question often asked by L2 learners, i.e. "Do we need agreement in singularity and plurality for related nouns?" This question is raised because of instances like the following:

(69)a. *The student used the zero article for the abstract *noun* "invasion" and "reality".
b. The student used the zero article for the abstract *nouns* "invasion" and "reality".

(70)a. *He* has *a* good *life*.
b. *They* have good *lives*.
c. *They* have *a* good *life*.

(69) indicates that agreement in plurality is obligatory, but (70) shows that it is optional. When we consider more cases, we find that if there is a lack of agreement, there is a special purpose. For example, a case like the

following indicates that to avoid ambiguity, agreement must be avoided:

(71)a. I'll show you *rooms* with *a TV set*.
b. I'll show you *rooms* with *TV sets*.

(71a) clearly indicates that there are a number of rooms, each with one TV set whereas (71b) is ambiguous between this interpretation and another according to which each room has more than one TV set. Similarly, in (72)

(72)a. Cats have a tail.
b. Cats have tails.

the singular, but not the plural, tells that one cat has one tail.

3.5 CONCLUDING REMARKS

It is hoped that when an L2 learner wants to check whether he has made the right choice of articles, the discussion above is of some help. When he does not know whether to use *the* or not, he can ask, "Are all of the three requirements, existence, uniqueness, and familiarity, fulfilled?" If any of them is not met, *the* is not to be used. If all of them is met, *the* is the right choice. This means that the three requirements together are necessary and sufficient conditions for the use of *the*. This, however, does not suggest that for any utterance in a given context, only one choice of articles is possible.

It has been noted in section 3.3 that the judgement whether the familiarity requirement is met can be different,

depending on whether or not the speaker thinks "bridging" or "accommodation" is likely to occur on the part of the addressee. Besides, the judgement whether the uniqueness requirement is met can also be different in some cases. For example:

(73)a. He provided us with the/a kind of information that only insiders can.
b. Intellectuals should try to seek the truth lying hidden behind the/a veil of distortion.

In (a), to some people, the information that only insiders can provide constitutes only one kind; to others, it may be viewed as constituting various kinds. Similarly, in (b), to some people, there is only one kind of veil of distortion, but to others, there can be more than one.

The use of articles with proper names has not been discussed above because traditional grammars (e.g. Christophersen, 1939, Jespersen, 1949, and Quirk, et al. 19732) have offered some useful rules. In fact some of the uses of *the* can be treated as part of the name, as in *the Hague* and *the MIT Press*. When a proper name loses its property of referring uniquely, it is used as a common noun and hence its use is governed by the same rules discussed in this chapter.

One thing that might be confusing to L2 learners is that when a proper name is used together with a common noun, the whole NP still behaves like a common noun, and not a proper noun. For example:

(74) the Watergate scandal; the Reagan administration; the American dollar

We see that in the form "proper name + singular count noun", *the* is always used because the proper name makes the whole NP definite. Because of the proper name, the addressee knows what is referred to.

Chapter IV

The Generic Use of Articles

4.0 INTRODUCTION

In chapter two we discussed the mass/count distinction and in chapter three we discussed another distinction, that between definiteness and indefiniteness. It was concluded that if we know these two distinctions, we can determine the choice of articles as follows:

	Count	Mass
Definite	the + N(s)	the + N
Indefinite	a(n) + N Ø + Ns	Ø + N

This chapter is concerned with what is traditionally called "generic" uses of articles. A typical example of this kind of use of articles can be illustrated by the following example:

(1)a. *The* dog is a mammal.
b. *A* dog is a mammal.
c. Ø dogs are mammals.

In (1a-c) we have a generic use of *the*, a generic use of *a*, and a generic use of Ø respectively. In (1), all the three sentences seem to express more or less the same idea and the three subject NPs all seem to refer to more or

less the same thing, i.e. the species of dogs. This is different from the non-generic uses of articles we discussed before. In sentences like the following:

(2)a. I saw *the* dog.
b. I saw *a* dog.
c. I saw Ø dogs.

the three object NPs refer to quite different things. In (2a), the definite NP *the dog* refers to a particular dog "familiar" to both speaker and addressee. In (2b), the indefinite NP *a dog* refers to a specific dog "unfamiliar" to the addressee. In (2c), the indefinite plural *dogs* refers to some non-specific dogs.

Mass nouns, like count nouns, are also used to generalize over a whole class of entities. For example:

(3)a. Water is essential to life.
b. Gold is precious.
c. Snow falls.

(3) shows that we use the zero article with a mass noun to make a generalization over the class designated by the mass noun. (1) and (3) are typical examples of generic uses of articles. To generalize over a whole class of entities, for count nouns, we use either *a* or *the* followed by a singular form, or we use the zero article followed by a plural form, as shown in (1); for mass nouns, we use the zero article.

Comparing these forms with the non-generic uses of articles as listed in the very beginning of this chapter, we find two forms missing, i.e. "*the* + mass nouns" and "*the* +Ns". Do we use *the* with a mass noun in a general

statement? Yes. We have sentences like:

(4)a. Mary is a girl who loves *the* water.
b. Iron is good for *the* blood.
(Bolinger, 1975, p. 181)

Do we use *the* followed by a plural noun to refer to a generality? Yes. We have sentences like:

(5)a. Most people enjoy *the* movies. (idem.)
b. *The* males are usually stronger. (p. 183)

We see that all the forms of the non-generic uses of articles have their counterparts in generic uses. Is the generic use of articles related to the non-generic use in any way? How does the generic use of articles arise? Are generic *the*, generic *a* and generic Ø always interchangeable as in (1)? What are the differences among these three uses of articles? These are the main questions to be addressed in this chapter. If these questions can be properly answered, it will be of help to L2 learners in their choice of articles.

Section 4.1 discusses the generic use of Ø. Section 4.2 deals with the generic use of *the*. Section 4.3 is about the generic use of *a*. Finally, section 4.4 is a conclusion.

4.1 THE GENERIC USE OF THE ZERO ARTICLE

Carlson's work (1977, 1982) has made significant contributions to our understanding of the semantics of what he calls "bare plurals", i.e. plural NPs without any determiner, such as *books* and *cats*. This section draws

heavily on his discussion of bare plurals and generic sentences. It is hoped that this will lay a foundation for my discussion of the generic use of the other two articles.

Carlson (1977) distinguished two major uses of bare plurals. One is what is traditionally regarded as the plural counterpart of a singular NP determined by the singular indefinite article *a(n)*, such as *a book* and *a cat*. This use of bare plurals is found in sentences like the following:

(6)a. I had dinner with *friends* last night.
b. *Students* at Stanford University debated over a course called Western Culture.
c. *Cats* were put to sleep and they died two or three days later.

In (6), the underlined bare plurals all seem to have an "existential" reading, i.e., they all have essentially the force of *some*. Traditionally, this kind of bare plural is called the indefinite plural.

This use of bare plurals is different from the use we find in sentences like

(7)a. *Cats* are mammals.
b. *Dogs* bark.
c. *Birds* have wings.

In (7), the underlined bare plurals all seem to have a "universal" reading, i.e., they all have essentially the force of *all*. These bare plurals are traditionally grouped as generic NPs.

Carlson argued that the indefinite plural use and the generic use of bare plurals should receive a unified

analysis. He argued that indefinite plurals are not the plural counterpart of an indefinite singular. Instead, they act like a proper name of a "kind" of thing, just as generic NPs do. Carlson claimed that a bare plural itself is not ambiguous; the existential or universal reading of a bare plural can always be attributed to some aspect of the environment where it occurs. Consider:

(8)a. Dogs are barking in the backyard.
b. Dogs bark.

In (8a), we have an existential reading of the bare plural, and in (8b), the bare plural is generic. In (8b) the generic reading arises because the verb is in the present simple tense, which suggests that barking is a permanent or characteristic trait of the species of dogs. On the other hand, in (8a), the verb is in the present progressive form. The temporal aspect of the verb implies that the sentence is not a statement about some permanent property of the whole species and hence the existential reading arises.

We see that verb tense or aspect determines whether a bare plural is being used generically or not in cases like (8). In other cases like:

(9)a. Owls are awake.
b. Owls are intelligent.

we have a clear intuition that (9b) is a general statement about the species of owls whereas for (9a) we do not. The generic or non-generic sense of the bare plural is brought

out by the respective adjectives. *Awake* denotes a fairly temporary property and hence the existential reading arises; whereas *intelligent* denotes a more permanent property and hence the generic reading arises. The former kind of adjective, including *hungry*, *drunk*, *available*, etc., are called "states" by Carlson. The latter, including *tall*, *fat*, *clever*, etc., he calls "properties". We see that in cases like (9), the nature of an adjective determines whether or not a bare plural is being used generically.

Carlson mentioned two more classes of predicates which can determine the generic or non-generic use of a bare plural. Consider:

(10)a. Hens are female chickens.
b. Hens are in the backyard.

Predicate nominals such as *female chickens* in (10a) refer to more permanent properties and hence select the generic reading; whereas locative prepositional phrases such as *in the backyard* in (10b) refer to temporary states and hence select the non-generic reading.

The main point of the above discussion of Carlson's 1977 work is that the generic use of the zero article is related to its non-generic use. The two uses of the same article are determined by the context where the bare plural occurs. Genericness is not inherent in the article itself; it is the predicate of a sentence that determines whether the subject NP has a generic use or not.

Carlson (1982) elaborated his hypothesis that a bare

plural acts like a proper name of a "kind" of thing by drawing parallels between habitual sentences about individuals such as John and generic sentences about kinds of things such as dogs. He pointed out that a sentence like (11) is ambiguous.

(11) John walked to work.

Carlson noted that (11) has two readings. One is what he calls "episodic" (or "event") reading, according to which (11) is a report of what John did on a certain day at a certain time. The other reading is a habitual reading, according to which (11) is a report of a habit or a customary activity of John's. Note that adding a phrase like "in those days" brings out this reading. Carlson said that in the episodic reading, the predicate is attributed not to the individual John, but rather to some "space-time instance" of him. In contrast, in the habitual reading, the predicate is attributed to the individual John, not to some temporal part of his "space-time realization".

In Carlson's view, an individual is an abstraction of all his spatio-temporal instances (or stages). People live through numerous stages, undergoing different processes and events. And yet on the other hand, they have more stable properties obtained from some constant activities they do such as their habits (John smokes; Mary writes with her left hand), their characteristic appearance (Bill wears a beard), and their place in the world (Tom is a store manager). Episodic sentences are space-time sentences; they are about

some temporal realization of an individual. Habitual sentences, however, are about the more stable individual itself.

Carlson argued that there is a strong parallel between habitual sentences and generic sentences. He noted that a sentence like (12) exhibits the same episodic/non-episodic ambiguity as in (11):

(12) Dogs barked.

On the episodic reading, (12) is understood as a report of what some unspecified dogs did on a given day at a given time. In this reading, the subject *dogs* is non-generic. On the non-episodic reading, we have to assume, for example, a perspective in the future where the species of dogs no longer exists and then (12) can be understood as a report of a trait of a kind of thing in the past named "dog". This reading is a generic reading and in this reading, the subject *dogs* is a generic NP.

It is noted above that in the habitual reading of (11), the predicate is attributed to the individual John. Similarly, in the generic reading of (12), Carlson suggested, the predicate is attributed to a "kind", dogs. In this sense, a kind of thing such as dogs and cats is also an abstract individual like John. By contrast, in the episodic reading of (12), the non-generic *dogs* refers to some non-specific members of the species, not to the abstract individual Dogs.

It has been noted above that Carlson argued that the

generic or non-generic use of NPs like *dogs* in (12) is determined by context. In (12), we have an ambiguous context. The utterer of (12) can be either talking about an event of barking, i.e. we can have an episodic reading of the predicate, or he can be talking about a trait of dogs, i.e. we can have a non-episodic reading of the predicate. The generic or non-generic use of the zero article is determined by the episodic or non-episodic reading of the predicate.

To sum up Carlson's insights on generics, a generic sentence with a bare plural as its subject attributes the predicate to the "kind" of thing designated by the bare plural. This generic use of a bare plural arises only when the predicate of a sentence denotes a more permanent or stable property, for example, a predicate in the simple present tense, not the progressive; adjectives denoting "properties" such as *intelligent*, not "states" such as *awake*; predicate nominals, not locative prepositional phrases. Without contexts such as these, bare plurals are to be interpreted as denoting some non-specific members of a kind of thing, not the "kind".

In Carlson's theory, the notion "kind" plays an important role. A kind of thing is different from just a set of things. Consider:

(13) a. Dogs are widespread.
b. Dogs that wag their tails at people are widespread.
c. *Dogs that are running in the backyard right now are widespread.

In (13a), we have the species of dogs; in (13b), it is not the whole species of dogs, but a subset of the species, yet it is a kind of its own because wagging tails at people is a common characteristic of these dogs. In (13c), however, running in the backyard right now is a temporary state and not a permanent property of the dogs in question. Hence these dogs only form a set of things, not a kind. *Widespread*, a "class predicate" which attributes a property to a kind, is thus disallowed.

To sum up this section, the form ØNPs (the bare plural) can be generic or non-generic. A generic ØNPs denotes a certain kind of thing, e.g. generic *dogs* denotes the kind, dog; whereas a non-generic ØNPs denotes more than one unspecified member of a certain kind of thing, e.g. non-generic *dogs* denotes more than one dog which is "unfamiliar" to the addressee. Whether ØNPs is used generically or non-generically depends on context. Let us assume without argument that ØNPs is basically used non-generically. When it occurs in a special context, the generic use arises. The special contexts mentioned in this section include two kinds. In both, the form occurs in subject position. When the predicate of the sentence is a "class predicate" such as *widespread*, *numerous*, and *come in (different shapes or sizes)*, the subject ØNPs is forced by the predicate to be interpreted generically. For example, when we say that horses are numerous, because of the semantics of *numerous*, in uttering that sentence, we cannot be talking about some specific or non-specific horses. Rather, we must be talking

about horses as a kind and hence the generic use arises.

Secondly, the generic use of ØNPs arises when the predicate denotes a property which can be characteristic of a whole class. Such predicates include "property" adjectives like *intelligent*, as opposed to "state" adjectives like *awake*, and predicate nominals as in "Dogs are *mammals*", as opposed to locative prepositional phrases as in "Dogs are *in the backyard*". Predicates in the simple present tense, as opposed to the progressive, can also be a trigger of the generic use of ØNPs. In brief, when what the predicate denotes is not limited to a certain (period of) time or space, the generic use arises. For example, when we say that owls are awake, it is impossible that all owls, including all the owls in the actual world and owls in any possible world, are awake at the same time. In contrast, when we say that owls are intelligent, the statement may not be true, but it is possible that all owls, i.e. members of the kind, owl, are intelligent. In other words, the generic interpretation of *owls* is available due to the semantics of the predicate *intelligent*.

Up to this point we have been assuming that the non-generic use of ØNPs can occur in any context except for those special contexts mentioned above where the non-generic sense of ØNPs disappears and the generic use arises. When ØNPs is forced to be interpreted generically by a predicate, it must denote a kind. If it does not, a semantic anomaly arises. This is why (13c), repeated here, is bad. If we substitute a "state" adjective like *hungry* for the "class"

predicate *widespread*, as shown in (13d), the sentence is well-formed.

(13)c. *Dogs that are running in the backyard right now are widespread.
d. Dogs that are running in the backyard right now are hungry.

Here we see a distributional restriction for the generic use of ØNPs, i.e. when the predicate is a class predicate, the subject of the form "ØNPs which Y's" must denote a kind, not only a set of things.

4.2 THE GENERIC USE OF THE DEFINITE ARTICLE

It was noted above that in subject position, a generic sense of the zero article arises when the predicate has a "characteristic" (non-episodic) reading. In an unambiguous context such as

(14) Horses work hard.

the verb is in simple present tense; we have only a "characteristic" reading of the predicate, not an "event" reading. In this context, *horses* is unambiguously generic.

How about the definite article *the* in this context? Consider:

(15) The horse works hard.

In (15), the context is unambiguous like that of (14), but the definite article here is ambiguous. It can be either specific or generic. In its specific sense, *the horse*

refers to a particular horse mutually known to speaker and addressee. In its generic sense, *the horse* refers to the species of horses.

In subject position, the generic sense of *the* arises in the same environments as those where the zero article is used generically. For example:

(16)a. The lion is awake.
b. The lion is courageous.

(17)a. The tiger is in the cage.
b. The tiger is a dangerous animal.

(18)a. The cow is giving milk.
b. The cow gives milk.

All the subject NPs in the (a) sentences are non-generic; whereas in the (b) sentences, on the prominent reading, all the subject NPs are generic. In (16b) we have a "property" adjective, *courageous*, as opposed to a "state" adjective, *awake*. In (17b) we have a predicate nominal, *a dangerous animal*, as opposed to a locative prepositional phrase, *in the cage*. In (18b) we have the present simple tense as opposed to the progressive. These are generic environments.

Is there any difference in meaning between generic *the* and generic Ø? We noted in section 4.0 that both the singular and the plural definite can be used generically. Bolinger (1975) noted that there are two ways to refer to a generality by using a plural noun. One is to use a bare plural and the other is to use a definite plural. His examples are (p. 181):

(19)a. Airlines charge too much.
b. The airlines charge too much.

(20)a. Generals usually get their way.
b. The generals usually get their way.

Bolinger remarked that in (19a), *airlines*, being indefinite, refers to all and any airlines; if it is an airline, it will charge too much. This is similar to Carlson's position. *Airlines*, a bare plural, refers to a kind of thing. Any and all airlines will charge too much by virtue of being airlines. In (19b), *the airlines*, being definite, refers to "those actually in existence, out there in the world, forming a subclass of common carriers" (p. 181). Similarly, in (20a), *generals* refers to all generals, extant and those yet to come; whereas in (20b) *the generals* refers to those actually existing in the world, forming a subclass of officers.

Bolinger's main point is that the definite article here is to "single out (make definite) the thing mentioned against the background of a more inclusive whole" (p. 181). Hence when we say "The males are usually stronger", we view males as a subclass of a class that also includes females. And when we say "Candy is not good for the teeth", we refer to the teeth of the human body. Mass nouns act like plurals. When we say "Iron is good for the blood", we refer also to the blood of the human body.

Bolinger said that this view of a larger whole as a backdrop is also true of definite count singulars when used to generalize. Consider:

(21)a. The hens lay eggs.
b. The hen lays eggs.

The larger whole here is all the domestic animals. According to Bolinger, the difference between (21a) and (21b) is that the plural form *the hens* refers to the totality of a subclass of domestic animals and the singular form *the hen* refers, not to the totality of the subclass, but to a single item which is taken to represent the subclass. In the generic sense, *the hen* refers to an abstract typical hen, not a particular one.

I have found that the difference between generic "*the* N" and "*the* Ns" is not as simple as Bolinger suggested. Burton-Roberts (1976, p. 442) claimed that (22) does not have a generic interpretation.

(22) The beavers build dams.

I think that a generic interpretation for (22) is hard to get for most people because it takes a special context to be interpreted generically. (22) needs to be viewed in a picture where beavers' building dams is contrasted with other rodents' peculiar activities, which are incidentally not easy to think of. By contrast, in a sentence like

(23) The cows give milk.

if it is viewed with a picture of a farm where the cows give milk, the hens lay eggs, and the horses haul carts, etc., then a generic interpretation for (23) arises. Note that for

singular definites, however, such a demand for contrasting is not so strong. For example:

(24)a. The cow gives milk.
b. The beaver builds dams.
c. The lion is the king of beasts.

In (24) so long as the subject NPs denote a well-defined species, they can be readily interpreted generically without a strong demand for a contrast with other species within the same larger class.

Vendler (1967) has a different way of saying almost the same thing as Bolinger with respect to generic *the*. He claimed that "the definite article always presupposes a restrictive clause" (p. 56). For example:

(25)a. I saw a man. *The* man [that I saw] wore a hat.
b. A man keeps bothering me. I hate *the* man [who keeps bothering me].

(26)a. *The* [animal that is a] tiger lives in the jungle.
b. The Incas did not use *the* [instrument that is a] wheel. (ibid., pp. 56-7)

In (25) we have non-generic *the* to pick out a particular individual; whereas in (26) we have generic *the* to single out a representative of a class. Vendler argued that a restrictive clause is a necessary condition for both uses of *the*. In the generic use, this means that a larger class is presupposed and the referent of the definite generic NP is a subset of this larger class. The genus of tigers is a subset of the genus of animals and so are wheels to instruments.

According to Vendler, the generic use of *the* requires a superior genus. This requirement is similar to Bolinger's suggestion that generic *the* needs an appropriate backdrop, a larger whole. Lacking such a background, a definite NP has only a non-generic interpretation. For example:

(27)a. Objects are in space.
b. The object is in space.
(Vendler, 1967, p. 57)

(27a) is a generic sentence but (27b) is not. *The object* in (21b) can only refer to a particular object, not a representative of the genus of objects because it does not fall under a superior genus.

A superior genus or a backdrop is a necessary condition for the use of generic *the*. It explains the use of *the* in cases like the following:

(28)a. This book is written for *the* [person who is a] mathematician. (Vendler, 1967, p. 57)
b. There are two kinds of large cat living in Paraguay, *the* [kind of large cat that is a] jaguar and *the* [kind of large cat that is a] puma. (p. 58)

However, this condition is not a sufficient one. It does not rule out cases like:

(29)a. *Bill likes to drive *the* [vehicle which is a] sports car when he gets a chance. (Lawler, 1973, p. 114)
b. *On Mother's Day, people wear *the* [flower which is a] carnation in their lapel.

Why is generic *the* blocked in sentences like (29)? Both sentences in (29) are habitual sentences. The referents of

both nouns, *sports car* and *carnation*, fall under a superior genus, vehicles and flowers, respectively. And intuitively, we can say things like:

(30)a. Bill likes to drive a kind of car called 'sports car' when he gets a chance.
b. On Mother's day, people wear a kind of flower called 'carnation' in their lapel.

One thing clear is that in object position, generic use of *the* does not require that it occur in a generic or habitual sentence. For example, we have sentences like:

(31)a. Man invented *the* wheel in protohistoric times.
b. Euclid described *the* parabola. (Vendler, 1967, p. 58)
c. In a TV interview, Saul Bellow talked about *the* novel.

In (31), all the verbs are in the past tense and further we have specific time adverbials, *in protohistoric times* in (a) and *in a TV interview* in (c). All these indicate that the sentences here are not generic sentences. However, the use of *the* in all three cases is generic because none of the definite NPs refer to a particular entity; instead they denote a "kind".

Bolinger (1975, p. 184) has the following to say about the generality of a noun in object position:

> It is a fact that when a noun is object of a verb or is some other kind of complement, it is far more often than not partitive rather than general. In a sentence like *He eats sweets* or *They haul coal* it is pretty clear that he eats only the sweets he eats, not sweets in general, and they haul just what coal they can load on their trucks, not coal in general.

Bolinger classified verbs like *eat* and *haul* as "manipulative" verbs. They involve physical actions. Bolinger said, "we can act only on so much of it as we can reach or manipulate" (p. 184). He noted, however, there are some contexts in which a manipulative verb may be used in a non-manipulative sense. For example:

(32)a. Why do you (always) spend money like that?
b. I saw him spending money.
(ibid.)

In (32a), the verb *spend* is used in a non-manipulative sense; the sentence means 'Why are you so wasteful of money?' In (32b), *spend* is used in a manipulative sense; the use of the progressive indicates that the action is manipulative.

In (29), repeated here:

(29)a. *Bill likes to drive *the* sports car when he gets a chance. (generic *the*)
b. *On Mother's Day, people wear *the* carnation in their lapel.

we have two manipulative verbs, *drive* and *wear*. *Drive* and *wear* involve physical actions; Bill drives only the sports cars he can reach, not sports cars in general and people wear only the carnations they wear, not carnations in general.

On the other hand, in (31), repeated here:

(31)a. Man invented *the* wheel in protohistoric times.
b. Euclid described *the* parabola.
c. In a TV interview, Saul Bellow talked about *the* novel.

we have verbs of a different nature. When we drive or wear something, we actually do something to it, but when we describe or talk about something, we do not. I think they can be used in a non-manipulative sense. Saul Bellow could talk about the kind, Novels, and Euclid could describe the kind, Parabolas, but Bill cannot drive the kind, Sports Cars, and people cannot wear the kind, Carnations. If we turn the definite generics in (31) into bare plurals, we can have a different meaning of each sentence.

(31')a. Man invented wheels in protohistoric times.
b. Euclid described parabolas.
c. In a TV interview, Saul Bellow talked about novels.

(31a) talks about the invention of the wheel against other human inventions; (31'a) does not have such an implication. Further, in (31a) *the wheel* implies the kind, wheel, whereas in (31'a) *wheels* implies various forms of wheels such as cart wheels and wagon wheels. It is clear that (31b) implies that Euclid described a kind of curve that is a parabola; what he described was the kind of thing itself. In (31'b), however, it may well be some non-specific parabolas that he described. Similarly, in (31c), *the novel* implies novels as a literary genre whereas in (31'c), *novels* can refer to some non-specific novels that Saul Bellow talked about.

The point here is that the manipulative sense of a verb blocks the generic use of *the* with its object. If a verb is

used in a non-manipulative sense, generic *the* is possible; if it is used in a manipulative sense, generic *the* is impossible. For example:

(33)a. To hunt the elephant, you need special guns.
b. ?John is hunting the elephant.

(34)a. Their task is to eradicate the wolf.
b. ?John eradicates the wolf.
(Bolinger, 1975, p.182)

We can infer that (33a) is about elephants as a class because the sentence means that to hunt a typical elephant out there in the world, you need special guns. In contrast, this generality cannot be inferred from (33b). It does not have a reading according to which John is hunting a typical elephant. Similarly, (34a) expresses an idea that "individualizes the noun as representative of its class" (Bolinger, 1975, p.182); whereas (34b) does not. Why so?

Note that the generality inference of (33a) and (34a) is made possible by the infinitive. In this untensed form, both verbs are used in a non-manipulative sense and hence generic *the* is allowed. By contrast, in (33b) we have the progressive, and hence John must be hunting some specific or non-specific elephants. In (34b) we have the simple present tense, and as before, John eradicates only the wolves he can manipulate, not wolves in general. In both cases, the verb is used in a manipulative sense and hence generic *the* is disallowed.

Note also that the infinitives in (33a) and (34a) are different from that in (29a), repeated here:

(29)a. *Bill likes to drive *the* sports car when he gets a chance. (generic *the*)

In (29a) the infinitive serves as the complement of the verb *likes*; in (33a) the infinitive can be interpreted as 'in order to' and in (34a) the infinitive is a predicate complement. Generality cannot be inferred in the former case, but it can in the latter two cases. Although (29a) is bad, (35) is not:

(35)a. To drive *the* sports car, you need special skills.
b. Their task is to improve *the* sports car.

Besides the above two cases, generality can also be inferred when an infinitive serves as the subject of a sentence. For example:

(36) It is always helpful to ask *the* librarian if you have any question on reference books.

Generic *the* is possible in (36), but without a special context, it is not possible in

(37) When you absolutely positively have to know, ask *the* librarian.

As a message from a public library printed on a bookmark, *a* is a better choice than *the* in (37). In (37), the verb *ask* occurs in a command. I think the use of a command is a clear indication that the verb is used in a manipulative sense.

In sum, the generic use of *the* requires a superior

genus or a larger whole for the NP at issue, but if the NP is the object of a verb which is used in a manipulative sense, generic *the* is disallowed. Manipulative verbs involve physical actions. The contexts in which a verb is used in a manipulative sense include the use of a progressive, a command, and a simple present tense. On the other hand, the indication of a non-manipulative sense of a verb includes the use of infinitives which serve as a a subject as in (36) or as a predicate complement as in (35b) or are interpretable as 'in order to'.

The zero article, however, is allowed with either the manipulative or the non-manipulative use of a verb. In the cases of (33) and (34), bare plurals are allowed in all four cases, as shown in the following:

(38)a. To hunt *elephants*, you need special guns.
b. John is hunting *elephants*.

(39)a. Their task is to eradicate *wolves*.
b. John eradicates *wolves*.

I now turn to another point about generic *the*. It is frequently mentioned in the literature (e.g. Quirk, et al., 1972, and Lawler, 1973) that definite generics, like ordinary definite NPs, carry existential presuppositions. It is true that a difference between the sentence *Horses work hard* and the sentence *The horse work hard* is that the indefinite generic *horses* refers to any and all horses or the species of horses; by virtue of being horses they (normally) work hard; whereas the definite generic *the horse* refers to an item which is taken to be representative of the

ho

of

pr

Al

wo

im

kn

sp

na

ge

th

ge

Da

in

ar

horses existing out there in the world, forming a subclass of domestic animals. However, the existential presupposition requirement does not rule out sentences like:

(40)a. The unicorn is a popular theme in children's literature.
b. The unicorn cleans water with its horn.
c. The dragon is a symbol of nobleness in ancient China.

Although unicorns and dragons do not exist in the real world, they exist in a world of imagination. This world of imagination is presupposed to be part of our world knowledge. Since unicorns and dragons are well-defined species in stories, they have a definite generic form like natural species such as horses and snakes.

Generic *the*, nevertheless, does have a restriction that generic Ø does not have. Carlson (1983, 1985) points out that a non-natural kind term does not have a definite generic form. For example:

(41)a. Dandelions are widespread.
b. The dandelion is widespread.

(42)a. Weeds are widespread.
b. *The weed is widespread.

Dandelions are a well-defined natural species, but weeds involve a variety of species memberships; they themselves are not a natural kind. Another example:

(43)a. Dogs that wag their tails at people are widespread.
b. ?The dog that wags its tail at people is widespread.

(44)a. Birds that eat fish are widespread.

b. ?The bird that eats fish is widespread.

Dogs and birds are natural kinds, but dogs that wag their tails at people and birds that eat fish are not. It was noted above that generic *the* presupposes existence; and further the predicate *widespread* applies only to "kinds". Given this, the (b) sentences imply that dogs that wag their tails and birds that eat fish are two well-defined natural species already existing out there in the world. But they are not. They are kinds set up by the description of the sentence. And in fact we can have sentences like:

(45)a. The dog that wags its tail at people is generally friendly.
b. The bird that eats fish generally has a long beak.

We can create kinds of things by description and attribute some characteristic properties to the kinds that we create.

In brief, generic *the* is blocked in a sentence with a "kind" predicate such as *rare*, *common*, and *widespread* that applies only to kinds, if the subject term does not designate a natural kind. Generic Ø, however, is not subject to this restriction.

To sum up this section, like ØNPs (the bare plural), both the form "*the* N" and "*the* Ns" can be either generic or non-generic. Non-generic "*the* N" denotes a particular entity known both to speaker and addressee. Non-generic "*the* Ns" denotes inclusively all the entities in the relevant domain of interpretation. On the other hand,

generic "*the* N (a count noun)" denotes an item which is taken as representative of a subclass of a larger class. Generic "*the* Ns" or generic "*the* N (a mass noun)" denotes the totality of a subclass of a larger class, and usually demands a contrast with other subclasses of the same larger class.

Let us assume again that the non-generic use is the basic and the generic use arises only in special contexts. In this section, three environments were mentioned where the generic use of "*the* N" arises. First, like the bare plural, when it co-occurs with a class predicate, the generic use arises. In this environment, the noun must be a natural kind term. For example, we say "The ladybug is common", but we do not say "The bug is common" because *ladybug* is a natural kind term, but *bug* is not.

Secondly, the generic use of "*the* N" arises when it co-occurs with a predicate which denotes a property distinctive of the whole class designated by the noun. If the property is not distinctive of the whole class, "*the* N" can only be interpreted non-generically. For example, when we say "The cow gives milk", it is possible that we are talking about a particular cow, and it is also possible that we are talking about the species of cows. In contrast, when we say "The cow eats hay", the sentence can only be interpreted non-generically, i.e. a particular cow known both to speaker and addressee eats hay. The generic interpretation is not available because eating hay is not a distinctive property of all cows.

In the two environments above, "*the* N" occurs in subject position. The generic use of "*the* N" also occurs in object position. When a verb is used in a non-manipulative sense, its direct object, "*the* N", can be interpreted generically. For example, when we say "In a TV interview, Saul Bellow talked about the novel", it is possible that we are referring to a particular novel known both to speaker and addressee. And it is also possible that we are referring to novels in general. On the other hand, if a verb is manipulative, its object does not have a generic interpretation because normally we cannot manipulate a whole class of thing. Thus we do not say sentences like "People wear the carnation on Mother's Day". And when we say "John likes to drive the sports car", the sentence can only mean that John likes to drive a particular sports car known to both speaker and addressee. The generic interpretation of *the sports car* is not available in that sentence.

The plural definite, "*the* Ns", is used non-generically in most cases. Its generic use arises in the same environments as that of the singular definite, *the* N. Both the plural and the singular definite, when used generically, require a higher genus as a backdrop. However, when we say, for example, "The cows give milk", it needs to be viewed as a contrast to "The hens lay eggs; the horses haul carts, etc." Without this contrast, the generic sense of the plural definite can hardly arise. Therefore, L2 learners have to be especially careful when they use a plural definite generically.

4.3 THE GENERIC USE OF THE INDEFINITE ARTICLE

It was noted above that a generic sense of the zero article or the definite article arises if it occurs with a subject term and the predicate attributes a characteristic property to the subject. In object position, a generic sense of the definite article arises if the verb is used in a non-manipulative sense. Some tested cases are:

(46)a. Horses work hard.
b. The horse works hard.

(47) To hunt the elephant, you need special guns.

How about the indefinite article *a(n)*? When does a generic sense of this article arise? Consider:

(48)a. A horse works hard.
b. To hunt an elephant, you need special guns.

What interpretations does (48a) have? Is *an elephant* in (48b) generic?

Burton-Roberts (1976) argued that in subject position a generic NP determined by *a* is derived from a subjectless predicate. Thus he claimed that (49a) is derived from (49b):

(49)a. A whale is a mammal.
b. To be a whale is to be a mammal. (p. 430)

He claimed that generic NPs determined by *a* are like predicate nominals (e.g. John is *a teacher*) in that they both are non-referring; they both represent abstract concepts, not objects. Hence generic *a* is about what

constitutes membership in a class, not about the class itself.

This point can be further illustrated by an example provided by Dahl (1975, p. 108):

(50) *A member* of this club does not drink whisky; hence, since you will now be accepted as a member, you will have to stop drinking.

Using *a*, the first clause of the above sentence states that "there is an obligation for members of the club not to drink whisky, or at least that it is expected of them that they will not drink whisky" (p. 108). Given this interpretation, (50) is a valid argument. Note that (50) can be paraphrased as:

(50′) To be a member of this club is to not drink whisky; hence...

Lawler (1973) noted that generic *a* is most natural in definitional sentences. He gave us examples like:

(51)a. A madrigal is polyphonic.
b. *A madrigal is popular. (generic *a*)
(p. 112)

To be a madrigal is necessarily to be polyphonic, but to be a madrigal is not necessarily to be popular. (51b) implies that popularity naturally comes to a madrigal just because of its class membership. Nunberg and Pan (1975, p. 415) noted that although (51b) is not acceptable, (52) is not problematic:

(52) A football hero is popular.

If a person is a football hero, he is popular. Popularity is a natural result of being a hero.

From the discussion above we see that it seems to be generally agreed that generic *a* is about class membership. This sense of the indefinite singular article arises when it occurs with a subject term, and the predicate attributes to this subject a property which is a natural result of class membership. Sentences with this use of *a* state that the property denoted by the predicate is an automatic and hence necessary property of the subject by virtue of its being a member of the class designated by the subject term.

With this in mind, let us return to (48a), repeated here:

(48a) A horse works hard.

Like the definite article in this context, *a* is ambiguous. It can be either specific or generic. On the specific reading, (48a) states that a particular horse known to the speaker but not to the addressee works hard. On the generic reading, it states that working hard is a necessary property of being a member of the species of horses.

Now I turn to (48b), repeated here:

(48b) To hunt an elephant, you need special guns.

What is the status of *a* in object position? It was noted in the preceding section that generic *the* is blocked with manipulative verbs. We discussed cases like (29), repeated

here:

(29)a. *Bill likes to drive *the* sports car when he gets a chance. (generic *the*)
b. *On Mother's Day, people wear *the* carnation in their lapel.

Although generic *the* is not allowed, we can have *a* in these cases, as shown in (29'):

(29')a. Bill likes to drive *a* sports car when he gets a chance.
b. On Mother's Day, people wear *a* carnation in their lapel.

In cases like these, *a* is clearly not generic; rather, in (29'a) it is either specific or non-specific and in (29'b) it is non-specific. In the previous section, we also noted that generic *the* is possible if a verb is used in a non-manipulative sense. We discussed cases like (31), repeated here:

(31)a. Man invented *the* wheel in protohistoric times.
b. Euclid described *the* parabola.
c. In a TV interview, Saul Bellow talked about *the* novel.

If we turn *the* into *a*, we have:

(53)a. ?Man invented *a* wheel in protohistoric times.
b. Euclid described *a* parabola.
c. In a TV interview, Saul Bellow talked about *a* novel.

In these cases, *a* is specific. (53a) states that man invented a specific wheel in protohistoric times; (53b) states that Euclid described a particular parabola; and (53c) states that Saul Bellow talked about a particular

novel in a TV interview. Hence we see that as the direct object of a verb, "*a(n)* N" cannot be generic. Instead, it is either specific or non-specific.

So far we have discussed the genericness of "*the* N", "*a(n)* N", and ØNPs as subject NPs and as direct objects of verbs. Now I turn to a discussion of these NPs as the object of a preposition. In a general statement such as:

(54) Yet until now much of the work in this field has not been easily accessible to *the* student, and often written at an intimidating level of technicality.
(Cambridge Textbooks in Linguistics, *Pragmatics*, 1983, back cover)

we can substitute *students* for *the student*, but *a student* would not as good as the other two forms.

This does not mean that only "*the* N" and ØNPs, but not "*a(n)* N", can be used when they occur as the object of a preposition. Consider:

(55)a. Defoe was an important figure in the development of the novel.
b. *Defoe was an important figure in the development of novels.
(Allan, 1986, Vol.2, pp. 139-140)

(56)a. This book is suitable for the first grader.
b. This book is suitable for first graders.
c. This book is suitable for a first grader.
(Abbott, p.c.)

(55) shows that ØNPs sometimes cannot occur in this position, and (56) shows that in this position, "*a(n)* N" sometimes can readily occur, just like the other two forms.

Recall that the bare plural has two uses, the generic and the indefinite plural use. In the generic use the bare

plural denotes a kind of thing and in the indefinite plural use, it denotes an unspecified number of objects designated by the noun. It was also noted that it is the environment where the bare plural occurs that determines when the generic or the indefinite plural use arises. In (55b) the generic sense of *novels* does not arise and hence it is bad. (55) is a context in which the "kind", and not members of this kind of thing, is at issue. It requires an NP which denotes a kind. A generic sense of "*the* N" in this position is always available whenever the context requires it; but this is not true with the bare plural, as (55b) clearly indicates.

Given the above claim, how can we explain (56b)? If I say that the bare plural in (56b) is not generic, the reader might object to it because it obviously denotes first graders in general. I'd argue that the indefinite plural use of *first graders* here denotes an unspecified number of first graders and this number is so big as to amount to the whole class of first graders.

How about the status of "*a(n)* N" in this position? If we define generic "*a(n)* N" as denoting class membership, *a first grader* in (56c) is clearly not generic. Instead, it is non-specific, denoting an unspecified first grader and in this particular context, it amounts to any first grader.

In sum, as the object of a preposition, "*the* N" can be generic when the context requires it whereas the bare plural or "*(a)n* N" cannot. However, the bare plural can be interpreted as denoting an unspecified number of objects and

this number can be so big as to amount to the whole class and thus it achieves a general use. Similarly, "*a(n)* N" can be non-specific and by denoting an unspecified object it can be taken as meaning 'any N' and thus achieves a general use.

Although generic *a* has a quite restricted distribution, non-specific *a* is widely used in general statements where generic *the* would not be as appropriate. For example:

(57) *A* student who has been on an F-1 visa for eight consecutive years must apply for an extension of stay.
(News and Notes 16:1, 1987, MSU)

The use of *a student* here is better than *the student* because applying for an extension of stay requires individual actions; the use of generic *the* (meaning 'the kind of student') implies that this kind of student as a group must do something. Again, *a* is paraphrasable as *any* in (57).

To sum up this section, the form "*a(n)* N" can be used either generically or non-generically. Non-generic *a(n)* N can be either specific or non-specific. Specific *a(n)* N denotes a particular entity known to the speaker but not to the addressee; non-specific *a(n)* N denotes an unspecified entity. Generic *a(n)* N denotes membership in a class. The generic use of *a(n)* N arises only in subject position. We have a generic use of *a(n)* N when it occurs with a predicate which denotes a necessary property of the class designated by the noun. Thus it is most appropriate in a definitional sentence.

4.4 CONCLUSION

When an NP determined by the zero article or *the* or *a* is used generically, it does not refer to a specific or non-specific item; rather it denotes something more or less on an abstract level, a "kind" of thing, or an item which is taken to be representative of a class, or class membership. The three articles are interchangeable in cases like (1), repeated here:

(1)a. *The* dog is a mammal.
b. *A* dog is a mammal.
c. Ø dogs are mammals.

However, they have their own distributional restrictions. Among the three articles, generic use of the zero article has the least restrictions.

When the predicate of a generic sentence is a "class" predicate such as *rare*, *common*, *widespread*, and *extinct* the zero article is allowed, but the article *a* is completely blocked because a generic NP determined by *a* does not refer a class itself. With a "class" predicate, the definite article is possible for an NP that designates a "natural" kind, but impossible for a kind that involves a variety of species memberships (e.g. weeds, bugs) or a kind that is created by the description of the sentence itself. Thus we have:

(58)a. Dogs are common.
b. *A dog is common.
c. The dog is common.
d. *The dog that bites people is common.

(59)a. Dandelions are common.

b. The dandelion is common.
c. Weeds are common.
d. *The weed is common.

In generalizing over a kind of thing, bare plurals allow the predication of properties which hold only on a statistical basis, but for definite generics the properties attributed to them must be distinctive of the whole class. Thus we have:

(60)a. Cows give milk.
b. The cow gives milk.

(61)a. Cows eat hay.
b. ?The cow eats hay.

In object position, bare plurals or indefinite singulars are allowed if a verb is used in a manipulative sense, but definite generics are blocked. On the contrary, if a verb is used in a non-manipulative sense, *the* is the most appropriate. Thus we have:

(62)a. Bill likes to drive {a sports car, sports cars, *the (generic) sports car} whenever he gets a chance.
b. Euclid described {the parabola, ?a parabola, ?parabolas}.

Generic *a* is limited to subject position, but non-specific *a*, joining generic *the* and Ø, is widely used in general statements. Thus we have:

(63) There are sensible exercises to most chapters, and adequate references for {the reader, readers, a reader} who want(s) to go deeper.
(Cambridge Textbooks in Linguistics, *Logic in Linguistics*, reprinted 1986, back cover)

If L2 learners know the general properties of generic sentences and the subtle differences among generic NPs determined by *the*, *a* and the zero article, they will have better guidance in making choices of articles. If they know the distributional restrictions for each article, they can avoid a wrong choice.

Chapter V

Conclusion

Krashen (1982) claims that L2 learners can make use of their knowledge of rules for language use only when they have time to think about the rules and only when they focus on form. This study has aimed to present the English article system in such a way that when L2 learners want to check whether they have made the right choice of English articles, they can follow step by step the principles presented in this dissertation. The use of articles may not be categorical because native speakers of English may not agree with one another in all cases. The purpose of this study has been to predict the most appropriate use of articles, that is, what educated American people will use in a non-casual style in a given context.

The procedures of checking suggested in this dissertation are as follows. First of all, ask if the noun in question is to be used as a count or a mass noun. Secondly, ask if the given noun is to be used generically or not. If not, ask whether the given noun is definite or indefinite. If yes, see what the grammatical function (subject or object) of the noun is and ask what meaning is to be expressed.

Thus the overall picture of the system is:

	Count	Mass
Definite	the + N(s)	the + N
Indefinite	a + N Ø + Ns	Ø + N

Each of the above forms has a generic use also. The mass/count distinction is still valid in the generic use of nouns, but the definite/indefinite distinction disappears. In this system, overall, there are three questions to be answered: a) count or non-count? b) definite or indefinite? and c) generic or non-generic?

In chapter two we discussed the mass/count distinction. According to the findings of Master's (1987) study, this distinction "causes the most persistent difficulty in article acquisition" (p. 181). In Master's study, he analyzed the spoken English of speakers of five different native languages, three with no article system, [-Art], (Chinese, Japanese, and Russian) and two with article systems, [+Art], (Spanish and German). He found that "acquisition of *a* and the [$\pm$count] feature takes place more slowly for the [-Art] than the [+Art] group" (p. 91). Why this distinction is difficult to acquire can be explained by the hypothesis that being count or mass is part of the meaning of a word, as discussed in chapter two. The countness of nouns in some cases is arbitrary and thus has to be learned word by word. Besides arbitrariness, the complications caused by the fact that the mass/count distinction is not a simple binary one also contribute to the difficulty. L2 learners cannot learn

a fixed feature, [+count] or [-count] for each noun.

Despite these disadvantages, I offered three assumptions and four conversion principles in the hope that they will be of some help to L2 learners in dealing with the mass/count distinction. The three assumptions are:

Assumption 1: Nouns which denote discrete objects are all count.

Assumption 2: Nouns which denote undifferentiated substances are all non-count.

Assumption 3: Nouns which denote abstract entities are all non-count.

And the four conversion principles are:

Principle 1:

Mass ~ Count: If a noun is used to denote a discrete entity, it is count; if it is used to denote the material content or a particular quality of the discrete entity, it is non-count.

Principle 2:

Count --> Mass: When we are talking about the undifferentiated mass of a physical object, but not the discrete object itself, the count noun denoting that physical object should be converted into a mass noun.

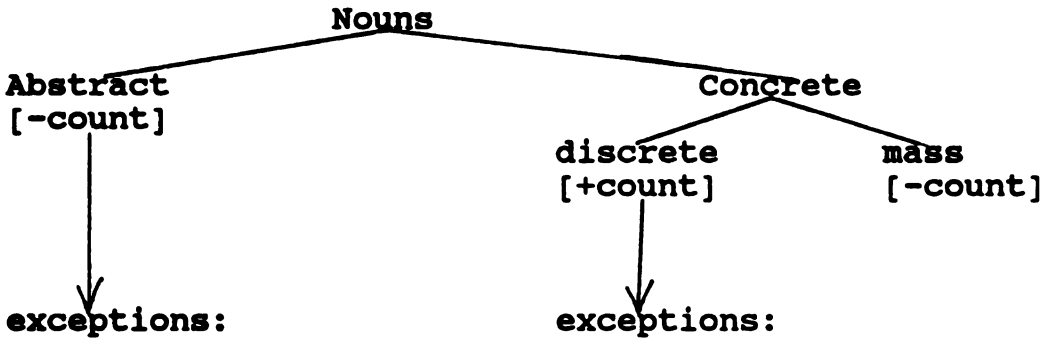
Principle 3:

Mass -- > Count: In commercial contexts, a mass noun, through constant application of the noun to well-divided instances of the referent, can gain an individuation for its reference and thus can be used as a count noun.

Principle 4:

Mass -- > ?Count: **Abstract non-count nouns such as a derived nominal or a name of a subject for study, when modified by a restrictive modifier, admit *a(n)*, which is the equivalent of *a kind of* in this context.**

The four conversion principles are to deal with the complications that the mass/count distinction is not a simple binary one. The three assumptions serve as a starting point in conquering the arbitrariness of this distinction. These assumptions stand as valid with some exceptions. The overall picture of this distinction is presented as:



a) *tricks*, etc.

b) *a warmth which was not surprising*, etc.

c) *discussions*, etc.

rice, etc.

Chapter three provides answers to (in)definiteness. To use *the*, three requirements all have to be met. Details for the fulfillment of each requirement are given as follows.

Requirement 1: Existence

a) The existence of the entity denoted by the noun is

introduced into the discourse by i) an explicit previous mention or association with such a mention, or ii) by the immediate situation or an immediate linguistic follow-up, or iii) by shared knowledge between speaker and addressee.

b) The noun has a grammatical previous mention.

i) The noun is followed by a restrictive relative clause or another form of restrictive modifier, including infinitives, present participles, past participles, and prepositional phrases which are not headed by *of*.

Exception: If we have the form "X which...NEG...Y", i.e. if the relative clause contains a negative word, it cannot serve as a grammatical previous mention.

ii) The noun is followed by an *of*-phrase, i.e. we have the form "N of NP". The N and the NP must stand in one of the three relations: thematic, appositive and possessive.

Thematic relation:

(1) the significance of intuitions < intuitions are significant

N of NP < NP be adjective
(N is a derived nominal of the adjective.)

(2) the interpretation of such phrases < we (people) interpret such phrases

N of NP < Verb NP
(N is a derived nominal of the transitive verb.)

(3) the failure of presuppositions < presuppositions fail

N of NP < NP Verb
(N is a derived nominal of the intransitive verb.)

Appositive relation:

(4) the subject of denoting < denoting is a subject

N of NP < NP be N

Possessive relation:

(5) the course of a conversation < a conversation has its own course

N of NP < NP has its own N

It is suggested that to check whether the use of *the* is possible, as a first step, the learner see if the existence requirement is met. If either one of the (a-b) situations occurs, this requirement is fulfilled. Then the learner can go on to consider the second requirement. If the existence requirement is not met, the use of *the* is inappropriate.

The second requirement is uniqueness. The details for its fulfillment is given as follows.

Requirement 2: Uniqueness

The noun refers inclusively to all the entit(ies) that there is/are in the discourse context.

a) Uniqueness is guaranteed by shared knowledge.

b) In the form "N of NP", if N is an abstract mass noun which cannot go with any kind of measuring word, the uniqueness requirement is always met.

Exception:

If N is an action noun, the demand for using *the* is weakened.

c) In the form "N which...", if N is non-count, and the restrictive relative clause specifies a specific amount or a specific kind of the entity denoted by the N, the uniqueness requirement is met.

Note: If uniqueness is known only to the speaker, but not to the addressee, we say the uniqueness requirement is met, but it is subject to the screening of the familiarity requirement.

If any of the situations in (a-c) occurs, the second

requirement for the use of *the* is met. After this, the learner can go on to consider the last requirement, familiarity. The details of its fulfillment are given as follows:

Requirement 3: Familiarity

a) If any of the (a-c) situations listed under Requirement 2 occurs, the entity denoted by the noun is familiar.

b) If uniqueness is known only to the speaker, but "accommodation" is possible, the entity denoted by the noun is familiar.

In chapter four we discussed genericness. The distributions and restrictions of the generic use of each non-generic form is as follows:

Generic use of "*the* Ns": refers to the totality of a subclass of a larger class; must be viewed as a contrast with other subclasses of the same larger class.

Generic use of "*the* N": is taken as representative of a subclass of a larger class.

a) *the* N(s) + class predicate
(N must be a natural kind term.)

b) *the* N(s) + predicate
(The property denoted by the predicate must be distinctive of the whole class designated by N.)

c) verb + the N(s)
(The verb must be non-manipulative.)

d) preposition + the N(s)
(The sentence must be a general statement.)

Generic use of ØNPs (the bare plural):

Generic use of ØN (mass nouns):

a) ØNPs/ØN + class predicate
(ØNPs must denote a kind, not only a set of things.)

b) ØNPs/ØN + predicate
(The property denoted by the predicate can be statistically true (say 80%) of the reference of N.)

Generic use of "*a(n)* N":

a) a(n) N + predicate
(The predicate must denote a defining property of the class designated by N.)

Besides the generic use, ØNPs and "*a(n)* N" have general use, which is something between the generic and the non-generic use. In this use both ØNPs and "*a(n)* N" is non-specific. They occur in general statements. "*a(n)* N" is paraphrasable as "*any* N" in this general use. ØNPs denotes an unspecified number of members in the class designated by N.

The English article system is a complicated one. Few non-native speakers have a complete acquisition of this system. The mass/count distinction is a tough one because for every single use of a noun the learner has to know whether it is count or non-count. If this first step goes wrong, the choice of articles will not be correct. Although chapter two provides an overall picture of this distinction, the exceptions listed there still remain a big burden for the learner. If rules can be found as to what kind of abstract entity counts as discrete and hence countable, the exceptions can be greatly reduced.

There might be pitfalls in the application of the rules for the use of *the* provided in chapter three. Let us take the following text as an example:

(6) The following 20 questions contain two sentences each. The only difference in the two sentences is in the use of articles. For each pair of *sentences*, assume that there is no previous mention of the item in question.

The question here is why the underlined noun disallows *the* to go with it. The underlined word *sentences* seems to have been explicitly mentioned twice in the preceding sentences. Why shouldn't it be definite? The tricky thing here is that although the entity has been introduced, it is not unique. We have a pair of sentences for each of the 20 questions. When we talk about each pair of sentences, the sentences in each pair remain indefinite because we still do not know which two out of the forty are referred to. This is similar to a case like

(7) I drank 20 cups of coffee yesterday. Each cup of *coffee* cost 50 cents.

The underlined word *coffee* remains indefinite although it seems to have been mentioned.

The choice of articles in a longer text other than isolated or discourse-initial sentences might involve more complicated factors than those considered in this study. Du Bois (1980) mentioned that in story telling, there are two modes, descriptive and narrative. In the descriptive mode the speaker focuses on introducing salient objects of the story and thus initial mentions are indefinite. On the other hand, in the narrative mode, the speaker focuses on advancing the story line, and hence he usually fails to make

indefinite introductions for objects which have not been introduced. In this case, we will have the definite article for initial mentions.

The rules for article usage summarized in this conclusion may look long and complicated. Nevertheless, they present English article uses as a system, and not a set of unrelated rules. The findings of this study clarify several vague points made in popular ESL textbooks on the grammar of English articles. For example, it was noted in chapter three that in Frank (1972, p. 160), an exercise was given for the use of *a* with non-count nouns. The rule was stated in this way:

> In some sentences, noncountable abstract nouns with adjective modifiers may be used with *a*. In many such sentences *a* is the equivalent of *a kind of*.

With such a rule, the learner would not know exactly when *a* can be used with a non-count abstract noun. Take Frank's first sentence in this exercise as an example.

(8) He has ____ simplicity which is seldom met with these days. (p. 160)

According to Frank's rule, the learner can only try to put *a kind of* in the blank and see if the sentence is good. It has been pointed out that this is not a reliable test. In the system presented in this study, the learner has two clues for the choice of articles for (8). First, *simplicity* is a derived nominal (*simple*, *simplify*, *simplicity*). Our fourth conversion principle says that it admits *a* in this

context. Secondly, we have a negative word, *seldom*, in the relative clause here. Our existence requirement tells us that it is not possible to use *the* in this context. Thus the use of *a* is confirmed.

Brodkey (1969) and Master (1987) both reported that the results of their experiments suggested that "systematic instruction can foster accelerated learning of the article system" (Master, 1987, p. 187). Master emphasized repeatedly that "the articles must be taught as a system over a considerable period of time" (p. 188). It is hoped that this study can bring about a better understanding of the English article system from L2 learners' point of view and its findings can be used to construct carefully sequenced lessons so that the learner can have a better grasp of the whole system.

BIBLIOGRAPHY

BIBLIOGRAPHY

Agnihotri, Rama K.; A. L. Khanna; and Aditi Mukherjee. 1984. The use of articles in Indian English: Errors and pedagogical implications. International Review of Applied Linguistics in Language Teaching 22.115-29.

Allan, Keith. 1980. Nouns and countability. Language 56.541-67.

-----. 1986. Linguistic meaning, Vol. 1. London: Routledge & Kegan Paul.

Bach, Emmon. 1986. The algebra of events. Linguistics and Philosophy 9.5-16.

Bickerton, Derek. 1981. Roots of language. Ann Arbor, Michigan: Karoma.

Bolinger, Dwight. 1975. A postscript to Poston on the article. Modern Language Journal 59.181-85.

Brodkey, Dean G. 1969. A self-instructional program in English article usage for Chinese, Japanese, Korean, and Thai college students. PhD dissertation. University of California, Los Angeles.

Burton-Roberts, Noel. 1976. On the generic indefinite articles. Language 52.427-48.

Carlson, Greg N. 1977. A unified analysis of the English bare plural. Linguistics and Philosophy 1.413-57.

-----. 1982. Generic terms and generic sentences. Journal of Philosophical Logic 11.145-81.

-----. 1983. Natural kinds and the denotations of common nouns. Unpublished draft.

-----. 1985. Worlds and natural kinds. Unpublished draft.

Chen, Pi-fen, L. 1985. Determiners and relative clauses in English. Unpublished master thesis. Michigan State University, East Lansing.

Christophersen, Paul. 1939. The articles: A study of

their theory and use in English. Copenhagen: Einar Munksgaard.

Clark, Herbert H. 1977. Bridging. Thinking: Readings in cognitive science, ed. by P. N. Johnson-Laird and P. C. Wason, 411-20. Cambridge: Cambridge University Press.

Dahl, Osten. 1975. On generics. Formal semantics of natural language, ed. by Edward L. Keenan, 99-111. Cambridge: Cambridge University Press.

Du Bois, John W. 1980. Beyond definiteness: The trace of identity in discourse. The pear stories: Cognitive, cultural, and linguistic aspects of narrative production, ed. by Wallace L. Chafe, 203-74. Norwood, New Jersey: ABLEX.

Frank, Marcella. 1972. Articles. Modern English: Exercises for non-native speakers, Part I: parts of speech, 135-61. Englewood Cliffs, New Jersey: Prentice-Hall.

Gass, Susan. 1983. The development of L2 intuitions. TESOL Quarterly 17.273-91.

Gleason, H. A. 1965. Linguistics and English grammar. New York: Holt, Rinehart and Winston, Inc.

Hawkins, J. 1978. Definiteness and indefiniteness: A study in reference and grammaticality prediction. London: Croom Helm.

Heim, Irene R. 1982. The semantics of definite and indefinite noun phrases. Ph.D. dissertation, University of Massachusetts at Amherst.

Jespersen, Otto. 1924. The philosophy of grammar. New York: Henry Holt and Company.

-----. 1949. A modern English grammar on historical principles, Part VII. Copenhagen: Ejnar Munksgaard.

Kadmon, Nirit. 1987. On unique and non-unique reference and asymmetric quantification. PhD dissertation, University of Massachusetts at Amherst.

Kaluza, Henryk. 1981. The use of articles in contemporary English. Heidelberg: Julius Groos Verlag.

Karttunen, Lauri. 1969. What makes definite noun phrases definite? The RAND Corporation.

-----. 1976. Discourse referents. Syntax and semantics 7: Notes from the linguistic underground, ed. by James D. McCawley, 363-85. New York: Academic

Press.

Kharma, Nayef. 1981. Analysis of the errors committed by Arab university students in the use of the English definite/indefinite articles. IRAL 14.333-45.

Krashen, Stephen D. 1982. Principles and practice in second language acquisition. New York: Pergamon Press.

Lacey, Andrew. 1977. Rules in the teaching of the English articles. English Language Teaching Journal 32.33-37.

Lawler, John M. 1973. Studies in English Generics. University of Michigan Papers in Linguistics, Vol. 1: No. 1.

Levinson, Stephen C. 1983. Pragmatics. Cambridge: Cambridge University Press.

Lewis, David. 1979. Scorekeeping in a language game. Formal semantics of natural language, ed. by Rainer Bauerle, Urs Egli & Arnim bon Stechow, 172-87. Berlin: Springer.

Markman, Ellen M. 1985. Why superordinate category terms can be mass nouns. Cognition 19.31-52.

Master, Peter A. 1987. A cross-linguistic interlanguage analysis of the acquisition of the English article system. PhD dissertation. University of California, Los Angeles.

McCawley, James D. 1975. Lexicography and the count-mass distinction. Proceedings of the 1st annual meeting of the Berkeley linguistics Society, 314-21.

McCawley, James D. (ed). 1976. Syntax and semantics: Notes from the linguistic underground. N.Y.: Academic Press.

McEldowney, Patricia L. 1977. A teaching grammar of the English article system. IRAL 15.95-112.

Nunberg Geoffrey; and Chiahua Pan. 1975. Inferring quantification in generic sentences. CLS 11.412-22.

Pelletier, Francis J. 1979. Non-singular reference: Some preliminaries. Mass terms: Some philosophical problems, ed. by Francis Pelletier, 1-14. Dordrecht, Holland: Reidel.

Pica, Teresa. 1983. The article in American English: What the textbooks don't tell us. Sociolinguistics and language acquisition, ed. by Nessa Wolfson and Elliot

Judd, 222-33. Rowley, Mass: Newbury House.

Quine, Willard. 1960. Word and object. Cambridge, Massachusetts: MIT Press.

Quirk, Randolph; Sidney Greenbaum; Geoffrey Leech; and Jan Svartvik. 1972. A grammar of contemporary English. London: Longman.

Russell, Bertrand. 1905. On denoting. Rpt. in Contemporary readings in logical theory (1967), ed. by I. M. Copi & J. A. Gould, 93-105. Macmillan.

Searle, John R. 1969. Speech acts. Cambridge: Cambridge University Press.

Smith, C. 1964. Determiners and relative clauses in a generative grammar of English. Rpt. in Modern studies in English: Readings in transformational grammar (1969), ed. by D. Reibel & S. Schane, 247-63. Englewood Cliffs, N.J.: Prentice-Hall.

Strawson, Peter F. 1950. On referring. Rpt. in Contemporary readings in logical theory (1967), ed. by I. M. Copi & J. A. Gould, 105-26. Macmillan.

Tang, Ting-chi. 1986. The articles in English: Meaning and usage. Teaching and Research 8.85-140.

Vendler, Zeno. 1967. Singular terms. Linguistics in philosophy, 33-69. Ithaca, New York: Cornell University Press.

Ware, Robert X. 1979. Some bits and pieces. Mass terms: Some philosophical problems, ed. by Francis Pelletier, 15-29. Dordrecht, Holland: Reidel.

Whorf, Benjamin L. 1956. Language, thought, and reality. Cambridge, Massachusetts: MIT Press.

Yamada Jun; and Nobukazu Matsuura. 1982. The use of the English article among Japanese students. Regional English Language Center Journal 13.50-63.