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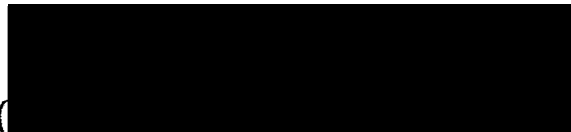
<https://doi.org/10.15760/etd.3626>

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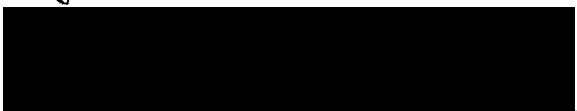
THESIS APPROVAL

The abstract and thesis of David Goodman for the Master of Arts in Teaching English to Speakers of Other Languages were presented June 8, 2000, and accepted by the thesis committee and the department.

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ABSTRACT

An abstract of the thesis of David Goodman for the Master of Arts in Teaching English to Speakers of Other Languages presented June 8, 2000.

Title: Chinese Numeratives and the Mass/Count Distinction

This study investigates the mass/count distinction for lexical nouns, and how this is formalized morphosyntactically in language. English is one language in which a grammaticized mass/count distinction can be seen--though there are varying explanations regarding what this distinction actually signifies. Chinese, on the other hand, is a language which might appear to be missing a formalized mass/count distinction. However, I postulate that Mandarin Chinese does in fact have a syntactic-distributional diagnostic available for teasing apart mass nouns from count nouns.

The diagnostic that I propose for finding a mass/count distinction among lexical nouns in Mandarin lies in the distribution of two measure words, *xie* and *dian*. More specifically, I hypothesize that the partitive measures *xie* and *dian* have different distributions with lexical nouns. The first one, *xie*, is postulated to be compatible with all nouns, regardless of mass or count status. The second one, *dian*, is hypothesized to be more selective, being compatible with mass nouns but not with count nouns. Thus, one might say that English realizes the mass/count

distinction in a much more elaborate formal system than does Chinese, but both do nonetheless manifest the distinction.

The results of my study suggest that there are grounds for claiming that *xie* and *dian* adhere at least in part to the distribution patterns that I have hypothesized, though the distribution was not as strong in some cases as I had originally thought; in fact, there are possibly other variables--notably size of the referent--that influence the acceptability of these measure words with nouns. I believe that follow-up research, with more tightly-controlled stimuli, is needed in order to find out how reliable the *xie/dian* diagnostic truly is as a means toward illuminating a mass/count distinction among lexical nouns in Mandarin Chinese.

CHINESE NUMERATIVES AND THE MASS/COUNT DISTINCTION

by
DAVID GOODMAN

A thesis submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS
in
TEACHING ENGLISH TO
SPEAKERS OF OTHER LANGUAGES

Portland State University
2000

ACKNOWLEDGEMENTS

I would like to thank all the members of my thesis committee for their time and suggestions. Special thanks are in order for Professor Dieterich and Professor Wadley, who helped to give me some direction and much-needed advice on matters both large and small. Finally, I would like to thank my wife, Huang Miao-Hsien, for her infinite patience, and perhaps even more so for the nudging that she gave me. Were it not for her “gentle reminders,” I fear that it may have taken me a good deal longer to finish this project!

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Chapter One

Introduction

This study is concerned with the mass/count distinction for lexical nouns, and how this is formalized morphosyntactically in language. The mass/count distinction as a psychological-perceptual construct is one that we expect to find present in all people; at the very least, I believe that people are capable of making such distinctions. It is not, however, necessarily the case that this distinction will be lexicalized, or that there will be morphosyntactic evidence for it, in any given language. English is one language in which a grammaticized mass/count distinction can be seen--though there are varying explanations of what this distinction actually means. These explanations are motivated by differing concerns--semantic on the one hand, and syntactic on the other. The question is basically this: which of these is primary in determining the mass/count status of nouns? My position--informed by researchers such as Allen (1980) and Wierzbicka (1985)--is that individual nouns do in fact tend to have semantic senses of mass or count (though this mass/count is not realized as a binary distinction per se); however, a formal mass/count distinction is only tenable if there is some morphosyntactic evidence available. Again, English demonstrates a lot of this evidence.

Chinese, on the other hand, is a language which might appear to be missing a formalized mass/count distinction. Many of the structures which point to mass/count in English are simply not found in Chinese, and even those structures which are comparable turn out, on inspection, to be not very promising. As for a morphosyntactic structure type which is much more plentiful in Chinese than in English, and which also might be useful for illuminating a mass/count distinction, one could point to numeratives. In Chinese, there are two broad sub-classes of numeratives: measure words and classifiers. At first glance, it might appear as if there is a potential diagnostic of sorts available here, as the kinds of nouns that can take classifiers tend to be ones that fit the semantic profile of “count” nouns, while those which do not have classifiers and instead rely on measure words for quantification purposes are those which fit the “mass” profile. One problem with this is that there is not really a perfect match between classifiers and count nouns on the one hand, and measure words and mass nouns on the other. Much more damaging to the argument that numerative usage illuminates a mass/count distinction in Chinese, however, is the fact that there are no syntactically distributional grounds for teasing classifiers and measure words apart. To motivate the argument solely on semantic grounds is to invite circular reasoning.

However, I postulate that Mandarin Chinese (also known as Modern Standard Chinese--though I will be using the more traditional term “Mandarin” in this study) does in fact have a syntactic-distributional diagnostic available for teasing apart mass nouns from count nouns. The implication of this for a formal

approach to grammar is that certain concepts, such as the mass/count distinction, might be more accurately thought of as being realized in different languages to differing degrees of elaboration along a continuum. According to this view, English realizes the mass/count distinction in a much more elaborate formal system than does Chinese, but both do nonetheless manifest the distinction.

The diagnostic that I propose for finding a mass/count distinction in lexical nouns in Mandarin lies in the distribution of two measure words, *xie* and *dian*. More specifically, I hypothesize that the measures *xie* and *dian*, though similar in their denotation of the amount quantified, have different distributions with lexical nouns. Roughly speaking, these measure words are comparable to the English gloss “some.”

The first one, *xie*, is postulated to be compatible with all nouns, regardless of alleged mass or count status. The amount quantified is similar to English “a few,” but whereas the English gloss is compatible with count nouns only, *xie* is well-formed with both types of nouns. The second one, *dian*, is hypothesized to be more selective, being compatible with mass nouns but not with count nouns. As such, it can be considered as quite comparable to English “a little,” both in the amount quantified and in its distribution with mass nouns.

The results of my study suggest that there are grounds for claiming that *xie* and *dian* adhere at least in part to the distribution patterns that I have hypothesized, though the distribution is not as strong in some cases as I had originally thought. In particular, there is a distinct possibility that size factors--that is, the size of the

referent that a given noun refers to--may influence *xie/dian* distribution as well. If this is true, then I have not unequivocally demonstrated the viability of *xie/dian* distribution as a means of illuminating a mass/count distinction in Chinese, though I have perhaps succeeded in pointing toward its potential for doing so. As a result, I believe that follow-up research, with more tightly-controlled stimuli, is needed in order to find out how reliable the *xie/dian* diagnostic truly is as a means toward finding a mass/count distinction for lexical nouns in Mandarin Chinese.

Chapter Two

The Mass/Count Distinction

A logical place to begin is with what is meant by the concepts of “mass” and “count.” These are concepts that are usually used in reference to nouns--they, after all, are presumably the kinds of things that can potentially be counted. One does not hear much in the way of “mass/count adjectives,” or “mass/count verbs,” though this latter may not be so far-fetched, if one follows the work Jackendoff (1991) and others have done on analyzing verb aspects and situation types in terms of boundedness and internal structure. In any event, it is most often nouns that are the focus of study when there is anything being said about a mass/count distinction.

2.1 Definitions

An explication of the terminology and some working definitions are required. The task of giving definitions, however, is not all that straightforward, considering that there is no universal agreement among the different researchers regarding the relative importance of formal realization as opposed to semantic-conceptual: some researchers operationalize the terms “mass” and “count” to refer to predominantly morphosyntactic phenomena, while other researchers believe that one must begin with a semantic orientation.

What is to be made of the terms “mass” and “count” themselves? It seems axiomatic that the terms “mass” and “count” are the preferred ones in research in this area, and they are certainly the ones most commonly encountered. Mufwene (1984), however, is a researcher who would have us change the terminology “mass” and “count,” believing it to be somewhat misleading, or perhaps not as informative as it could be. What is proposed in its place is “individuated” (basically “count”) and “non-individuated” (largely “mass”). Mufwene prefers this new terminology, as it allows for separating out some of the incongruities of formal representation from semantic sense. Mufwene offers a number of lists that illustrate how languages formalize lexical items along the mass/count distinction in ways that might seem counterintuitive: for example, some terms which would appear to share conceptually similar senses, like “equipment” and “tools,” find themselves on opposite sides of the formal divide. The point is that such examples constitute arguments in favor of maintaining a distinction between semantic and morphosyntactic senses of mass and count. Mufwene’s point with respect to this is that any given entity might seem to have a certain mass/count status that could be derived from its ontological structure, but that whether or not a language will categorize the entity according to this structure depends largely on how speakers choose to perceive and conceptualize this entity. That is to say, whether or not a given noun is “individuated” or “non-individuated” is contingent on how speakers use the word, and how the language formalizes the word.

This new terminology also has the advantage of allowing one to make interesting observations on the way that this “individuated” and “non-individuated” distinction interacts with the “singular” and “plural” distinction. As a case in point, Mufwene notes that in English, both “singular” and “plural” can be said to be “individuated,” but that other languages seem to associate “singular” and “individuated” more closely, such that “plural” can be seen as “non-individuated” insofar as the plural is being used in the sense of a collective entity. In other words, using different terminology (“individuated” and “non-individuated”) allows one to think of an old problem in a novel way.

This is not at all unlike what Jackendoff (1991) discusses in his work on conceptual semantics. According to Jackendoff, various types of nouns (and verbs as well!) can best be understood in terms of primitive features: he proposes the features of boundedness and internal structure. A given noun is bounded if its referent is unable to be divided up into smaller parts and at the same time maintain its identity: a car can be chopped up into little pieces, but those pieces are not cars. On the other hand, a noun that is not bounded can have its referent divided into smaller pieces, and each-and-every-one of the pieces will maintain the identity of the whole: water can be portioned off into different units, and each of these portions is still water. Furthermore, internal structure is different from boundedness. According to Jackendoff, plural count nouns are not bounded; however, they do have internal structure, because the plural set is composed of individual members. Conversely, singular count nouns, while bounded, are not construed as having

internal structure, as the breaking down of a singular into parts does not result in individual members. In contrast to the above, prototypical mass nouns, such as substances, are construed as neither being bounded nor having internal structure. Jackendoff's conceptualization throws light upon certain similarities that he believes singular count nouns and mass nouns have on the one hand, and that plural count nouns and mass nouns have on the other--his use of a features-based approach allows him to spell out the similarities cogently.

Still, I will be using the more-traditional terms "count" and "mass" throughout this work, while at the same time trying to be aware of what exactly it is that I am referring to with these labels. By "count," I am referring to a certain quality of a given set of nouns: namely, that there can be one of them (singular), or more than one (plural); furthermore, the morphosyntactics of the language must be such that these nouns are able to be differentiated from "mass" nouns. That is to say, it is not sufficient that a given referent denoted by a noun label might be thought of as containing within it the ontological means whereby one could demarcate one, or more than one, of it; nor is it sufficient for speakers of a given language to conceptualize a given referent as "count." If the language in question is unable to provide a given noun with the morphosyntactic structures necessary toward demonstrating this quality of "individuated," or "countedness," as distinct from "unindividuated" or "uncountable," then the noun is not a "count noun." As for "mass," I refer to that quality of a given set of nouns that prevents us from claiming that there could be one of them (singular), or more than one (plural);

furthermore, the morphosyntactics of the language will be such that these nouns are able to be distinguished from “individuated,” or “count,” nouns. There are three possibilities for how these morphosyntactic differences are manifest:

1. Count nouns have structures associated with them, and mass nouns do not.
2. Mass nouns have structures associated with them, and count nouns do not.
3. Both count nouns and mass nouns have structures associated with them.

English contains some mass/count related morphemes which manifest (1) (e.g. plural morphemes and the indefinite article), and others which manifest (3) (e.g. certain quantifiers, some of which can only be used with count nouns, and others which are only well-formed with mass nouns). Hence, any given language potentially has more than one of these seemingly mutually-exclusive tendencies, but this is only a possibility if a given language has more than one morphosyntactic means of differentiating mass and count.

An additional issue is that of whether the terms “mass” and “count” should be predicated of individual lexical nouns, or rather of some other syntactic unit. It appears that “mass” and “count” are most often used to refer to nouns as individual lexical items. There are researchers, however, who point out certain problems with this analysis, and who thus propose different ways of representing the mass/count distinction. These issues will reappear through the next couple of sections.

2.2 How Mass and Count are Recognized

Since it is the case that the morphosyntactic structures associated with the mass/count distinction are the very means of making any claims for a distinction in the language, a logical follow-up question is this: how do we recognize mass nouns or count nouns when we see them? Both Gordon (1988) and McPherson (1991), in their studies of the mass/count distinction in English, point to numerous formal morphosyntactic characteristics. According to Gordon (1988), count nouns can, and in some cases must, take a plural morpheme, whereas mass nouns usually cannot do so. Article usage also differs between the two, such that only count nouns are compatible with the indefinite “a/an.” In a related vein, only count nouns can be referred to with the anaphoric “one”--though, I would add, this use of “one” refers not to a noun only, but rather to the level of N-bar, of which the noun is the head (to use X-bar theory parlance). Quantifier use also differs, as witnessed by the fact that “much” can only co-occur with mass nouns, while “many” is only allowed to occur with plural count nouns. An example that illustrates this difference in quantifier use is with regard to the mass noun “water:” one cannot say “many water” (and “many waters” is a marked, poetic-sounding usage--not the prototypical one), though one could say “many glasses of water,” because in the latter instance “many” is quantifying “glasses,” which is a plural count noun of a sort (it is a measure word to be more exact--and these will be discussed in more detail in the section on classifiers and measure words).

McPherson (1991) reiterates many of the same formal characteristics in her study, but has some additional comments to make on the semantic import of the mass/count distinction. She sees the distinction between mass and count nouns largely from a semantic perspective, summarizing previous capitulations of mass/count in saying that count nouns, by definition, individuate and specify what it is that qualifies as “one atomic individual” (p. 316) of a given kind. As for the implications of mass/count with regard to the various associated morphosyntactic structures, McPherson states that count nouns, by reason of their individuating function, are the marked case, while mass nouns are unmarked. The support for this is found in the fact that count nouns require a greater number of morphemes to demarcate them.

Furthermore, McPherson notes that whether or not such superordinate terms as “furniture” or “animal” are assigned mass or count status can often seem to be a very arbitrary choice. For example, the fact that a word like “furniture” is used as a mass noun, at least in English--despite the fact that the objects which make up the set “furniture” are nearly all count nouns themselves--may well reflect the fact that mass, being the unmarked setting, is available for use for a large number of superordinate terms. Mufwene’s (1984) summarization of research done on the acquisition of “individuated” and “non-individuated” by young children reveals that in the first stage, up through age two-and-a-half, all nouns are basically used as if they were non-individuated. After this initial stage, children begin to use the

various morphemes that indicate “individuated.” This research suggests that “mass” might well be unmarked relative to “count”--at least for language production.

However, not everyone agrees that it is lexical items which can truly be thought of as being “mass” or “count.” That is to say, it may well be that what is being realized along the mass/count distinction are not individual morphemes or words, but rather whole phrases--more specifically, noun phrases. Allen (1980) makes this very point in his study of nouns and countability. What Allen proposes, and substantiates with argumentation via various distributionally-oriented diagnostic tests, is that nouns as individual lexical items may well have countability *preferences*, but that a given noun’s countability is also greatly influenced by how the word occurs in a noun phrase. In fact, according to Allen, it is at the phrasal level that it truly makes sense to speak of a mass/count distinction, because it is only at that level that a binary distinction can be seen. Proof of this--in English, at least--can be found in the fact that the countability of singular indefinite nouns is not indicated by modification of the noun itself, but rather by the determiner (an article, most likely), which is a part of the noun phrase rather than the individual noun.

This should not be taken to mean that any given individual noun can be freely used in either a mass or a count sense. Some researchers seem to be saying exactly this--namely, that nouns generally can be used in either a mass or count sense. Jackendoff (1991) has something to say about this in his discussion of the “universal grinder” (p. 26) and the “universal packager” (p. 9). In the former, a

supposedly count noun is converted to a mass noun, and sometimes with gory results: “There was dog all over the street.” (p. 26). The “universal packager,” is the converse of this: a supposedly mass noun is converted to a count noun, as in “I’ll have a coffee.” (p. 25). Allen is not really claiming this position for his own. On the contrary: the countability preferences of nouns have a great deal to contribute to the final mass/count status of the noun phrases of which they are a part. What Allen is arguing is this: on the lexical level, there is a continuum of mass/count, with at least eight distinct spots along this continuum, and each noun in the language occupies one of these spots (admittedly, some of these positions on the continuum are occupied by no more than a tiny handful of idiosyncratic nouns). On the phrasal level, however, there is something much more closely approximating a binary mass/count distinction.

Allen’s analysis of the mass/count distinction as being a phrasal phenomenon is helpful to keep in mind when looking at nouns, because it is sometimes the case that a given noun, while having its particular countability preference, can nonetheless change this preference depending on the nature of the noun phrase of which it is a part. Furthermore, I maintain that this preference is subject to modification depending on the context of the situation in which the given noun might be used. For example, in a study conducted by Akiyama and Williams (1996) with both native speakers and non-native speakers, they demonstrated that nouns which are normally thought of as count nouns can be used as if they are mass

nouns, especially if the context is conducive to doing so. The following is one of the examples that they used in their study:

- (1) a tablespoon of apple
a tablespoon of apples

They claimed that the fact that many subjects preferred the first of these over the second was evidence of the subjects' willingness to flout prescriptivist rules when the context nudged them to do so. However, it seems likely that in the context which their experiment focused on--count nouns that need to be measured in instruments that are very small--the "count" nouns were in fact being used as mass nouns, and thus were not, as the researchers suggested, violations of prescriptivist grammar rules. At least I believe that no such rules are being violated, and that, instead, in the preferred utterance "apple" is a mass quantity, probably diced, of "apple-stuff." In fact, to my mind "a teaspoon of apples" conjures up an image of individual apples that are roughly pea-sized, which is not the way that the noun "apple" is prototypically used. What this example of "apple" seems to indicate is that a count/mass distinction is not necessarily rigid at the lexical level, but that the phrasal level does tend to establish a distinction more definitely.

Insofar as Allen shows that individual nouns do have countability preferences, his explication of a phrasally-fixed mass/count distinction is necessarily not as radical as Sharvy's (1978) study is. Sharvy would have us look for a mass/count distinction at the phrasal level, as lexical items cannot specify for mass/count. In other words, what Sharvy wants to claim is that, underlyingly, all

lexical items are really mass in sense. He is not resorting to saying that supposed “count nouns” can be made into mass ones by being forced through any kind of universal grinder, either. Rather, what he does seem to be saying is that individual nouns do not contain within themselves any means whatsoever of manifesting a mass/count distinction. It looks like a revisiting of the idea that “mass” is the unmarked setting in the noun lexicon, but even more strongly stated, because in Sharvy’s schema it does not make sense to think of nouns, at the level of individual lexical items, as being countable at all. Interestingly, much of the argumentation employed by Sharvy is borrowed from his understanding of mass/count in Chinese: according to Sharvy, all individual nouns in Chinese are mass (the default setting), and so-called count usages rely on the use of classifiers and measure words. This issue of count/mass in Chinese, and its interaction with classifiers and measure words, will figure more prominently in later chapters.

2.3 The Implications of Privileging Either Semantic or Syntactic Criterion

Why are the above arguments interesting ones to investigate? That is, given the choice of individual lexical items on one hand, and phrasal constituents on the other, why does it matter which is primary for determining a mass/count distinction in a language? Or, does it matter at all? I maintain that it does matter, and that our choice of which is more important will strongly influence, or possibly even

determine, how we interpret the *function* that morphosyntactic representation serves in all of this. If we believe that the mass/count distinction is primarily lexical, then the morphosyntactic forms associated with them are seen mostly as a way of *recognizing*, or *realizing*, an underlying mass/count meaning: that is, meaning precedes structure, or, in other words, form follows from function. However, if lexical items are not seen as being inherently either mass or count, and it really depends on how we want a given lexical item to be understood, then the morphosyntactic forms are seen as a means of *creating* the mass/count distinction: that is, structure aids in creating meaning.

The argumentation on how to understand the mass/count distinction can be better understood when the focus is on the interplay of form and function, structure and meaning. Sharvy (1978), Allen (1980), Mufwene (1984) and Gordon (1988), to varying degrees, argue for the primacy of morphosyntactic structures in determining mass/count status--Allen, it bears repeating, is more equivocal than any of the others, as he devotes near-equal attention to the countability preference of individual lexical nouns. Sharvy, on the other hand, argues unequivocally for the primacy of morphosyntactic structure in these matters. McCawley (1975) would quite likely concur with Sharvy in wanting to claim that the lexical level is not very helpful in determining mass/count status: he points to languages such as Japanese that have a dearth of mass/count related-morphology, and that furthermore require the use of classifiers and measure words for all noun phrases that have [+count] status. He concludes that, at least for those languages, it does not make

much sense to speak of mass or count individual nouns at all. This is a category of languages that many, Sharvy included, would place Chinese in.

There are those researchers who are not entirely satisfied with this interpretation of the mass/count distinction. Allen (1980) must be included among them, as his schema does place importance on the countability preferences of individual nouns: essentially, Allen straddles the fence. McPherson (1991) tends to favor the semantic approach over the morphosyntactic one, at least in the context of first language acquisition. Another researcher who argues for a similar position is Wierzbicka (1985), whose work makes an even stronger case than Allen does for claiming that individual nouns have particular mass/count senses. She does not attempt to force all of the nouns of a particular language (most of her examples are English) into binary “mass” and “count” poles, but rather ends up with a mass/count continuum: she gives fourteen positions instead of Allen’s eight! Wierzbicka points out that whatever position along the continuum that a particular noun does fit, there are sound semantic reasons--conceptualizations by speakers--why it should be there and not elsewhere. These conceptualizations are informed, but not entirely dictated, by the ontological “countability” of a referent, such that conceptualization basically wins out over ontology.

Gil (1989) raises the question of whether the mass/count distinction--what he calls the “count-mass parameter” (p. 266)--should even be considered to be a part of the grammar proper at all: perhaps it is best thought of as being extragrammatical. He concludes that it is best seen as a hybrid--a position that is

consistent with Allen's analysis. However, Gil leans toward the position that the mass/count distinction is more extragrammatical than it is grammatical: according to Gil, countability and individuation are concepts that are more generally cognitive in nature rather than linguistic per se, and they are the very concepts that are imperative in most definitions of count and mass. He does not deny that grammar has a factor to play: different languages will tend to carve up the mass/count status of certain nouns in slightly different ways. However, he does also note that there seems to be a set of prototypical count and mass nouns that will tend to be stable across languages--or, at least, across languages that show formal distinctions.

Many fascinating possibilities, some of them seemingly contrary to one another, are being entertained by various researchers. Still, it must be pointed out that many of the above findings and explanations of the mass/count distinction seem most appropriate for languages such as English, which contain plural morphemes and articles. What about languages such as Chinese, which do not tend to have such morphemes? One might conclude that Chinese does not make a morphosyntactic distinction between mass and count--if one's criteria were the presence of plural morphemes and articles. Hence, it may be that Chinese is missing a lexicalized or grammaticized mass/count distinction, but I believe that in fact it does have one. This possible morphosyntactic distinction is the subject of the rest of this review of the literature.

Chapter Three

Chinese Numeratives

3.1 Definitions and Characteristics

I believe that our search for a mass/count distinction in Mandarin Chinese (a.k.a. Modern Standard Chinese--the other languages of China, commonly thought of as “dialects” of Chinese, will not be investigated in this study) necessitates that we understand more about the role that numeratives play in Chinese. The term “numerative” is one that I have borrowed from Wiebusch (1995), which is a label used to encompass both numerical classifiers and measure words. Languages such as English tend only to have one of the types of numerative--namely, measure words. The example in the first part of the literature review, “glasses of water,” has “glasses” functioning as a measure word--more specifically, a container measure--for “water.” Measure words are intuitively easy to grasp, and it is difficult for me, at least, to imagine that there could be a language that did not have measure words. Still, the term “measure word” is not completely simplistic, and it can be further divided into various sub-types: Chao (1968) does a nice job of demarcating these measure word types, at least as they are used in Chinese. He categorizes measure words into seven types. His organization schema looks like this:

Table 3.1
Chinese Measure Word Types

Measure types	Meaning	Examples (English glosses)
(1) group	collection or aggregate	a type of, a row of, a pair of
(2) partitive	portions, rather than groups	a part of, half of, a lump of
(3) container	nouns used as measures	a cup of, a box of, a spoon of
(4) temporary	nouns, measuring outer extent	a head of (sweat), a yardful of
(5) standard	measures proper	a yard of, a gram of, a catty of
(6) quasi	autonomous	an aspect of, (both) side(s) of
(7) verb	number of times an action occurs	(number) time(s), once over

In Mandarin Chinese, the latter two, quasi-measures and verb measures, pattern much like the first five, though in English this is not necessarily the case. In any event, measure words are common in the world's languages, and they oftentimes can be translated from one language to another--the difficulty of finding exact equivalences for particular weight, length, area and volume measures notwithstanding.

The same degree of universality cannot be attributed to numerical classifiers, so a description of what is here meant by classifiers, or numerical/noun classifiers, is in order. When linguistics speak of classifiers, it is possible that there will be some ambiguity, given the fact that there are various types of classifiers in different languages. Allen (1977) gives an entire taxonomy of classifier types, of which the type found in many East Asian languages, Chinese included, is but a single type. Kikomi (1992) maintains that one main division among classifier types

is between those which are bound morphemes, and those which are free.

According to Dixon (1986), however, classifiers are always free. However, classifiers in Chinese seem to be largely bound, as will be demonstrated later.

The types of classifiers that are used in Chinese are what are often called numerical classifiers: Allen states that these are the morphemes found in certain languages that must be used whenever one is counting nouns. Chao (1968) claims that there are basically two different kinds of classifiers. First, there are classifiers as individual measures, or “numery adjuncts” (p. 585). Second, there are classifiers that are associated with verb-object constructions--these are much more amenable to translation than the first type of classifier. This latter type includes the following, with classifiers in italics:

(1a) *jiang liang ju hua*
speak two sentence speaking (noun)
“say a couple of things”

(1b) *zuo yi ren can-yi-yuan*
do/serve one term senator
“serve a term as a senator”

(Note on the formatting of Chinese examples throughout this thesis: (1) I would have liked to have included tones, as they are a necessary part of the phonetic representation of Chinese morphemes; however, due to the fact that tones are not a necessity for the purposes of this study, and that they are difficult to add into the text, given the software available to me, I have decided to leave them out. My apologies to those whom will find this to be an unsatisfactory “solution.”

(2) The Chinese found in set-off examples are in regular type; that found in the running text is in italics).

The examples in (1a) and (1b) on the preceding page are less prototypical examples of classifiers, and I believe it is no accident that Chao distinguishes this type from the first one. Furthermore, he finds himself having to go to some lengths to insure that readers will not confuse these verb-object classifiers with the aforementioned verb measures (see Table 3.1). I agree with Chao that the two types of numeratives are different, though I am less convinced that what he calls verb-object classifiers are more like classifiers than they are like measure words. In any case, I will only be using the first type--the relatively-prototypical noun classifiers--as I am interested in investigating noun phenomena, not verbs.

As for the first type of classifiers, what are some of its characteristics?

Perhaps an example of a noun phrase would be helpful to illustrate some of the points that I wish to make about classifiers:

(2a) san zhi gou
 three (classifier) dog
 “three dogs”

In Chinese, noun phrases with classifiers--or, actually, numeratives generally (i.e. including measure words as well)--take the above form: a numeral is followed by a classifier, which in turn is followed by a noun. According to Li and Thompson (1982), Chinese noun phrases can, theoretically speaking, be composed of the following elements, and in this particular order: “associative phrases +

classifier/measure phrase + relative clause + adjective + noun,” or, alternatively, with the relative clause preceding the numerative phrase, rather than following:

(2b) (Mao Tai-Tai de) san zhi hui tiao-wu de gou
(Mao Mrs. (genitive)) three (classifier) able dance (genitive) dog
“(Mrs. Mao’s) three dogs that can dance”

(2c) (Mao Tai-Tai de) hui tiao-wu de san zhi gou
(Mao Mrs. (genitive)) able dance (genitive) three (classifier) dog
“(Mrs. Mao’s) three dogs that can dance”

By “associative phrases,” Li and Thompson are referring to possessives. They do note that noun phrases with all of these elements present at the same time are not very common in use, as they tend to be overly complex:

(2d) ? (wo de) san zhi hui tiao-wu de xiang-dang ke-ai de gou
(I (gen)) three (classifier) able dance (gen) extremely cute (gen) dog
“(My) three extremely cute dogs that can dance”

Going back to the example given in (2a), note that the middle morpheme *zhi* is a numerical classifier that has no English gloss. One could attempt to explain it as an “animal classifier,” though this would only be partially true: a great many animals do not take *zhi* as a classifier, and in addition to this some of the other nouns that take *zhi* are not animals. This untranslatability, or, perhaps more accurately speaking, this lack of a corresponding word, is a characteristic of classifiers--though only in the event that the target language (here, English) is one that does not itself have classifiers. Allen (1977) postulates that languages such as English, which do not have classifiers, do nonetheless possess the numerating function that classifiers serve--only it is via the morphosyntactic formalization of mass/count, rather than by the use of classifiers. Tying this argumentation in with

the first part of this literature review, what we seem to be saying here is that languages will provide speakers a means of counting and demarcating things that need counting.

What can be said about the boundness of numerical classifiers in Chinese? They are not affixed to the noun in the noun phrase, though they are selected to occur in a given noun phrase largely on the basis of the head noun: this is in contrast with measure words, which are more often selected on the basis of the communicative context (e.g. whatever measure word a noun like “water” takes will depend on the extra-linguistic context: the measure could be “gram,” or “liter,” or “cup,” or any number of other possible measure words). This notion of nouns--particularly count nouns--selecting their classifiers will be more evident when the classifying function of classifiers is discussed later. Also, even though they are not bound to the noun per se, there is nonetheless a sense in which classifiers are affixed to the numeral in a noun phrase. The bounded status of classifiers can be demonstrated with recourse to a preceding noun phrase example:

(3) *san zhi gou*
three (classifier) dog

The noun *gou* selects the classifier *zhi*, but is not bound to it. The numeral *san*, on the other hand, does seem to be bound to the classifier. One would never hear someone point to three dogs and say “*zhi*,” or even “*san*,” though one could well say “*gou*” alone if the counting of them was deemed unnecessary. If one did want to count them, then *san zhi gou*, or even the elliptical *san zhi*, would be necessary.

Numerical classifiers--and numeratives (i.e. measure words as well) in general--are used in contexts other than for counting, and so it is not always the case that such classifiers need to be accompanied by a numeral. Li & Thompson (1981) point out that numerical classifiers can be used with both demonstratives (English equivalents of “this,” “that,” and interrogative/indefinite “which”), and certain quantifiers (English glosses of “all,” “many,” “a certain...” and so on). Still, the focus in all of these cases is on “numerating,” or quantifying.

3.2 Classifiers in Particular--Special Functions

Before continuing on with this line of argumentation, however, I would like to discuss the other functions that classifiers in particular can serve. As the term “classifier” suggests, they often serve a categorizing function: many researchers, Denny (1986) and Wiebusch (1995) among them, document and explore this. Denny looks at classifiers more globally, not specific to any one language, noting that the use of classifiers is often linked to setting up expectations that aid in interpreting verb predicates. That is, because there are fewer classifiers than there are nouns, classifiers can express generalities about the nouns they accompany, and these generalities may be helpful in interpreting, or predicting, the relationships of the predicate arguments to one another. They are also more likely to suggest functional salience--in other words, how humans put various things to differing uses. This would explain why most of the classifiers used in Chinese have either a

perceptual or a functional basis: the former has perhaps been studied more extensively and systematically than the latter, though both are topics of interest in classifier research.

It should be noted from the outset that when one speaks of classifiers serving a categorizing function, this does not imply that the resulting “categories” will be agreed upon to be the most coherent, logically-consistent ways to organize noun types. This caveat aside, a great many of those who research classifiers believe that their function as categorizers should not be underestimated. Craig (1986) puts forward the claim that a more modern approach to categorizing is not based on classical notions of discrete, mutually exclusive categories; rather, prototypes--that is, fuzzy boundaries coupled with a continuum of strong versus weak membership--may prove to be one that makes the postulation of classifiers as serving a categorizing function more tenable. Put another way, Craig’s point seems to be that a given classifier will tend to co-occur with certain nouns that are prototypical members of a class. For example, a classifier which classifies long, stiff, skinny objects tends to co-occur with such nouns as “stick” or “pen.” It may be that other members of this class are not so prototypical, but they may have a relation to the more-prototypical members, perhaps via metaphorical extension. More will be said about this shortly.

Allen’s (1977) study of classifiers explicates at least seven ways of categorizing nouns, but in his study he tends to conflate measure words with classifiers--I am working under the premise that this should not necessarily be

done. Kikomi (1992) states that the two most common ways that languages tend to use classifiers to categorize nouns are in terms of animacy and shape. Chinese certainly has many shape-based classifiers, running the gambit from zero-dimensional point-like things (*ke*, *li*) up through one-dimensional (*tiao*, *zhi*), two-dimensional (*zhang*, *pian*), and including three-dimensional ones as well (*kuai*, *ge*)-this list is by no means an exhaustive one, nor does it indicate the finer-toothed perceptually-based distinctions that can be made within these categories.

Classifiers that are specific to animacy are not as common in Chinese as are the shape-based ones. Perhaps one might posit *zhi*, the one used with “dog,” as one that tends to be used with certain mammals and birds (though *zhi* is also used with other types of nouns as well--not exclusive to animals). In addition, there are a few other animal classifiers, some of which are used with a single animal (*pi*, used with “horse,” or *tou*, used with “cow”), and as such have no productivity. Also, there are some plant classifiers (*ke*, used with “tree,” or *duo*, used with “flower,” especially as in a flower in bloom).

As for the perceptually-based classifiers, Shi (1996) is quite convincing in explaining how Chinese shape classifiers categorize objects according to relative perceptual saliency, such that it is the proportions of the various spatial dimensions to one another that results in nouns being classified a certain way. Studies by both Tai & Wang (1990) and Tai & Chao (1994) on categorizing with Chinese classifiers put Craig’s notion of classifier categorization-via-prototypes to good use, noting how metaphorical extension plays a role as well. For example, the classifier

zhang prototypically applies to objects with stretchable strings, such as “bow” or “zither.” An extension of this usage occurs when it is used with nouns that have rope as a component, such as “net” or “tent.” These latter uses differ from the prototypical usage in one important respect that makes further extensions possible: namely, that the latter ones (“net” or “tent”) can form a flat surface when they are spread out. As such, a further extension happens when *zhang* is used to classify nouns that form a flat surface, such as “record” or “paper.” The interplay of the perceptual and the functional is especially evident in a third extension of *zhang*--one where it is used to classify three-dimension objects whose most functionally-salient feature is along one of its two-dimensional surfaces, such as “bed” or “table.” In order to move from the prototypical to the more-peripheral--though equally common and important (after all, tables are encountered much more frequently than zithers!)--uses of classifiers, metaphorical extensions are relied upon heavily.

Is it the case that classifiers perfectly and systematically categorize all of the nouns in those languages that have them? The answer to this is certainly in the negative. However, one might be tempted to see more arbitrariness in classifier use than is actually present, especially where certain so-called “general” or “generic” classifiers are concerned. On the subject of the supposed haphazard use of certain classifiers, Loke (1994) focuses on that most “general” of all Chinese classifiers, *ge*. Loke shows that it is wrong to think of it as an “all-purpose” classifier that is semantically empty. Loke argues that words which take *ge* as their classifier are

not so haphazardly placed at all, and provides an analysis of the distribution of *ge*.

The gist of the analysis is that *ge* tends to be used with several distinct classes, each of which contains a great number of members, and that the resulting homonymy gives the false impression of an all-purpose, semantically-bleached classifier.

Despite the fact that classifiers have a categorizing function, and that they often impart a sense of perceptual or functional saliency, it is not the case that Chinese classifiers can be thought of as untranslated adjectives. In fact, as both Erbaugh (1986) and especially Loke (1997) explicate, classifiers in Chinese are historically derived from lexical nouns, not adjectives. Erbaugh makes it clear that it is the prototypical properties of the nouns-turned-classifiers that are used to classify given nouns in their respective categories.

Some additional comments on how classifiers tend to be used in everyday speech in Chinese may well make the comprehension of them even clearer. The function of counting and pointing out objects has already been explained in some detail. Besides this function, Lu (1989) points out several syntactically oriented uses of noun phrases with classifiers, noting that in some contexts at least, the use of classifiers allows a given noun phrase to appear as a subject or object in a sentence (especially the latter), without which the phrases would be ill-formed. For example, there is the phenomenon of doubling-up on adjectives in a Chinese noun phrase, in which case a classifier should be used:

(4a) hou de shu
 thick (genitive) book

(4b) hen hou de shu
very thick (genitive) book

(4c) ? hou hou de shu
thick thick (genitive) book

(4d) hou hou de yi ben shu
thick thick (genitive) one (classifier) book

It should be noted that this represents Lu's grammaticality judgment, and that it is quite likely that others do not agree that (4c) is in any sense ill-formed. In any case, Lu's point seems to be that there are instances where the primary function of the classifier is not to quantify, or even to point out a referent: rather, its function is one of shoring up the grammatical well-formedness of a particular noun phrase construction. However, if Lu is off-base here, then his argument for a syntactic motivation for using classifiers is weakened.

The discourse function of classifiers has been the focus of investigation for other researchers. Sun (1988), for one, has demonstrated how their discourse function often overrides certain syntactic and semantic considerations, such that classifiers are used to reflect speakers' perceptions of the thematic centrality of certain topics. Given that one of the primary functions of numerical classifiers (and numeratives in general) is individuating and pointing out a referent, it makes sense that much of the time nouns which are both referential and indeterminate are more likely to require numeratives. However, Sun's study calls for a qualification of this perspective: in a given discourse utilized in the study, nearly half of the nouns which were referential and indeterminate were nonetheless seen by participants as

not requiring classifiers. Not accidentally, the nouns which were perceived as not requiring classifier usage were overwhelmingly the ones that were not seen as major entities in the discourse.

Also on the general subject of discourse use, Erbaugh's (1986) study of adult and child use of classifiers shows that relatively specialized classifiers tend to be used in formal contexts more often, and also more likely when one is introducing an item into the discourse for the first time. This finding accords quite well with a study done by Polio (1994) on the use of classifiers by non-native speakers of Chinese. Polio's research shows that the learners of Chinese very rarely omit classifiers, and that they, like the native Chinese speakers, use specific classifiers (i.e. ones other than the supposedly more-general *ge*) when introducing items into the discourse for the first time.

3.3 Differences Between, and Similarities Among,

Classifiers and Measure Words

Even after having spent some time looking into the various functions that classifiers serve in Chinese, it may still be the case that numerical classifiers strike speakers of non-Asian languages as quite alien--as opposed to measure words, which do not seem alien at all (because in fact they are not). Perhaps not everyone will agree on exactly how alike, or how different, classifiers and measure words really are--although most people would admit that both classifiers and measure

words are types of numeratives. It is true that, syntactically speaking, the two function quite similarly, following the “number (and/or demonstrative, and/or quantifier) + numerative + noun” pattern--at least in Mandarin Chinese (other languages which have numerical classifiers have these same elements, though not necessarily in the same order). Still, there are important differences between classifiers and measure words. Most obviously (and something that has already been pointed out) measure words are found in nearly all of the world’s languages, insofar as quantities and groupings of various types are being measured. For example, the Chinese and English renderings of the following noun phrases that utilize measure words are very similar:

(5a) *yi bei shui*
one cup water
“a cup of water”

(5b) *liang wan fan*
two bowl (cooked) rice
“two bowls of rice”

Note that in these noun phrases, the Chinese *shui* (“water”) and *fan* (“rice”) do not have classifiers, but rather have measure words--container measures, to be more precise. Also, the measure words *bei* (“cup”) and *wan* (“bowl”) do not themselves have classifiers, as they are not functioning as head nouns in their respective noun phrases. If one wanted to make *bei* or *wan* the head nouns of noun phrases, rather than using them as measure words, one could do so, though they would then require classifiers (and *bei*, in its common noun usage, would require a suffix. What this

suffix means, or adds to the noun--and why it does not affix to all nouns--remains an unanswered question, at least in this study). The results would look like this:

(6a) zhe ge bei-zi
this (classifier) cup-(suffix)
“This cup”

(6b) si ge wan
four (classifier) bowl
“Four bowls”

Hence, measure words tend to be the kinds of morphemes that are capable of being lexical nouns, whereas classifiers are not: the latter are historically derived from morphemes that were once lexical nouns, but they are no longer nouns (though classifiers are sometimes combined with other morphemes to yield lexical nouns--e.g. *pian* is a classifier for prototypically flattened objects, that can be combined with the verb *chang* (“sing”) to result in the lexical noun *chang-pian* (“music record”)). Insofar as measure words are (in certain noun phrase environments) lexical nouns, while classifiers are not, there is a lexical category difference between the two: however, this difference is not, strictly speaking, morphosyntactic nor distributional in nature.

Tai & Wang (1990) call for a clear differentiation to be drawn between numerical classifiers and measure words, if not along syntactic lines, then at least along semantic-conceptual lines. They claim that measure words relate to the temporary characteristics of nouns, whether as quantities of a substance, or as aggregates of a set; classifiers, on the other hand, correspond to more permanent characteristics of nouns. I understand this distinction also in terms of inherency,

whereby “temporary” characteristics are not inherent, and “permanent” ones are inherent. Hence, there is nothing inherent in the noun “water” such that “cup” should classify it: rather, “cup” is used only to indicate a temporary holding place for a certain quantity of water. A “bowl” of water would do just as well, and be just as temporary a holding place, though “cup” might seem to be a closer collocation of “water.”

The distinction between numerical classifiers and measure words becomes more apparent when one notes that the kinds of nouns that take classifiers tend to be what we might call “count nouns,” or, to use Allen’s (1980) terminology, nouns with a countability preference. Measure words, on the other hand, are used with “mass nouns” and collectives/aggregates of count nouns. However, there are problems with making this claim on syntactic or distributional grounds, as the following illustrates.

In order to sort out some of these issues of numerical classifiers and measure words, one could place them in a context where they might possibly interact: such a context is provided by looking at a collective sense of a noun that takes a classifier. We can bring back the example of the “three dogs:”

(7) san zhi gou
three (classifier) dog

However, instead of “three dogs,” one could think of an aggregate measure word, such as “pack,” as in the English noun phrase “a pack of dogs.” One might predict that if measure words and numerical classifiers are different syntactic forms with

unlike distributional patterns, they could co-occur. If that were so, the grammar might be expected to allow the following:

(8a) * yi qun zhi gou
one pack (classifier) dog

Or perhaps the following:

(8b) * yi zhi qun gou
one (classifier) pack dog

Instead, in cases where a noun that usually takes a classifier is used in a collective sense, the classifier drops out entirely, leaving the measure word:

(8c) yi qun gou
one pack dog
“A pack of dogs”

Why should this be, if classifiers and measure words are different types of morphemes?

I mention all of this because it does seem that the two different types of numeratives, though proposed to be distinct on semantic grounds, seem to be identical in terms of the syntactic evidence. In fact, they are so similar in their syntactic distribution that many pedagogical grammars, including Li's (1988) A Practical Chinese Grammar for Foreigners, do not make a distinction between the two at all. Instead, Li uses the term usually translated as “measure word” (Chinese *liang ci*) throughout his description of both measure words and numerical classifiers. This issue of whether the two are in fact distinct or basically identical is an interesting one: although I do not claim to offer any definitive answers in the present work, I do nonetheless plan to revisit this issue, insofar as I see it as

pointing in a promising direction. More specifically, my hypothesis that a morphosyntactic diagnostic is available for demonstrating a mass/count distinction among lexical nouns in Chinese will come to rest upon the distribution of a pair of numeratives.

3.4 The Quantifying Function of

Numeratives, and the Mass/Count Distinction

Although the varying functions of numerative in general, and classifiers in particular, are fascinating and complex in their own right, it is the function of quantifying that holds the greatest promise of illuminating a formalized mass/count distinction in the language. Denny (1986) and Wiebusch (1995) look into the simultaneous classifying and quantifying functions of classifiers--Denny for classifier languages in general, and Wiebusch for Chinese in particular. Wiebusch concludes that the quantifying function of classifiers is more central, and consistent, than that of classifying. Surely if this quantifying function is a large part of the reason that classifiers are used, then we should expect to see similarities with measure words, as they too are used to quantify certain amounts of things. It is because of quantifying and counting, after all, that one is justified in claiming that classifiers and measure words are both members of the category “numeratives.” However, much of what has been written about numeratives has suggested that

classifiers and measure words are not completely identical. The question still remains: in what way can it be claimed that the two are in fact separate?

Tai & Wang (1990) have already been cited as claiming a semantic ground for distinguishing between classifiers and measure words. Chao's (1968) work on a descriptive grammar of Chinese does use the cover term "measure words" in a way similar to what Wiebusch (1995) would call "numeratives," but Chao goes on to distinguish nine different types of measure words, the first two as classifiers and the last seven as measure words, as has been explained earlier. Thus, Chao does distinguish between the two types, though again mostly on semantic grounds. Li & Thompson (1981) allude to a difference between the two, stating that measure words are different in that they are nouns which do not take classifiers, but that can serve as classifiers for other nouns. However, their definition seems to be too narrow: their definition includes the container and temporary types as explicated in Chao (1968), but that leaves the other five types as unaccounted for. Furthermore, the lexical items that double as both nouns and container measures, when functioning as nouns and not as measure words, do in fact require a classifier. Still, Li and Thompson do point out a distinction, and not all studies of Chinese grammar do so.

Thus, it seems to me that the above sources do provide at least some semantic, if not syntactic, grounds for distinguishing the two types of numeratives. Tai and Wang's (1990) study is particularly helpful in this regard: their association of classifiers with "permanent," or inherent characteristics of particular nouns, is

contrasted with the association of measure words with “temporary,” or noninherent characteristics of certain nouns. If this is true, then we might expect to find classifiers being used to quantify “count nouns” (nouns with a strong countability preference, in Allen’s (1980) parlance), and measure words being used to quantify “mass nouns,” and collectives/aggregates of count nouns.

In order to claim that classifiers and measure words are truly distinct, we would like to find some evidence of a morphosyntactic distinction between them: without the evidence of a formal distinction between the two, we will very likely be diminished in our ability to argue for a grammaticized mass/count distinction in Mandarin (as the third part of this literature review will demonstrate). In a study on numeratives in general, and thus not focusing on Chinese per se, Lehman (1979) suggests that there are syntactic grounds for separating the two types. Lehman points out that classifiers are used to count unit members of a set--which look very much to be something analogous to count nouns. Furthermore, there are different kinds of numeratives--measure words and grouping words--which are used with mass nouns and collectives of count nouns, respectively. It is not clear, however, on which syntactic grounds the distinction should be made. The phenomenon that I pointed out earlier--that of classifiers being suppressed by measure words in collective senses of count nouns--might appear to be a syntactic test of a sort, except that in so doing one would need to presuppose a difference that might not in fact be present. Put another way, if one chooses not to hypothesize that there are two different syntactic entities named “classifiers” and “measure words,” but rather

that there is a single syntactic entity “numeration,” then one could explain the data by saying that any given noun phrase is only allowed to have one numerative. That is to say, the earlier-mentioned example can be used to argue against a morphosyntactic distinction between the two types.

This issue of teasing the two types of numeratives apart seems to lead us into a circular argument. We ask ourselves if there is a mass/count distinction in Chinese, and find ourselves (possibly!) admitting that there is. How do we know this might be the case? Mass nouns, and collectives of count nouns, take measure words, while count nouns take classifiers. But, how do we know which of the numeratives are classifiers, and which are measure words? We say the proof lies in measure words being in distribution with mass nouns and collectives, and classifiers with count nouns! As can be seen here, we are getting nowhere in particular arguing this way. Mass and count are being defined in relation to measure word and classifier distribution, neither of which have been settled on independent distributional grounds.

Hence, it might well be that those who claim that Chinese does not have a mass/count distinction, at the lexical level at least, are in fact correct: it looks as though their opponents will be hard pressed to find something in the morphosyntax of Chinese to suggest otherwise. After all, the addition of a numerative to a noun phrase results in that noun phrase being countable, while the lack of a numerative would not give us any means of claiming that the individual noun itself has its particular countability preference. To this I will concede that even when this work

of mine is complete, we will still find that the mass/count distinction in Chinese is faint at best, especially when compared with English. Notice that I say “faint,” not non-existent! The next section is an attempt to explicate the following: what we might want to seize upon as morphosyntactic evidence for a possible mass/count distinction at the lexical noun level.

Chapter Four

The Mass/Count Distinction in Chinese

4.1 Where Will We Look for a Solution? Not Here!

Before delving into the proposed solution that I wish to offer, I would like to point out the following: it seems that when one looks at how the mass/count distinction is formalized in English, one can make reference to a number of morphosyntactic phenomena that are not found at all in Mandarin, or, if present, do not offer the distribution patterns which are noticeable in English. In particular I am thinking of the mass/count distinction as it is grammatically realized in terms of the following: plural morphemes, articles, quantifiers, and numeratives. The first of these three are the very ones that Gordon (1988) discusses, while the last is the focus of the just-finished sections of this review of the literature.

The first, plural morphemes, are a part of English morphosyntax. They are, by definition, used to denote plurality--that is, to indicate that there is more than one of something:

(1a) pen
pens

(1b) child
children

This singular/plural dichotomy can only be found with those nouns which are countable, which is why mass nouns in English generally cannot take the plural morpheme. On the other hand, if a mass noun is used with a measure word, the measure word can take a plural morpheme, but the mass noun itself does not:

- (2) water
 * waters
 cups of water

This is not to say that mass nouns never take plural morphemes. For example, there are a few idiosyncratic uses of plural morphemes with mass nouns:

- (3) oats
 * two oats
 a bag of oats
 three bags of oats

This usage, however, seems to be a frozen form: whereas prototypical count nouns can either add or leave off the plural morpheme, idiosyncratic mass nouns such as “oats” cannot. As for other examples of mass nouns taking on the plural morpheme, this can happen when one is discussing varieties, or types, of some mass noun. In this case, the usage “waters,” marked as ungrammatical above, is actually well-formed in special (read marked or poetic) contexts. The point is that plural morphemes are a fairly reliable indicator of unmarked usages of mass and count nouns. Of course, it should be pointed out that this view is conducive to the idea that morphosyntactic elements tend to reflect, rather than create, a mass/count distinction.

In any case, the question of the significance of plural morphemes in determining mass/count may be controversial where English is concerned, but it is a non-issue with regard to Mandarin: the reason for this is that there is no plural morphology in Chinese. Sweeping generalizations of this sort are often (rightfully!) objected to, and so it is possible that one could point to the existence of the Mandarin noun suffix *men* as an example of a plural morpheme. This suffix is used with pronouns:

(4a) wo
“I”
wo-men
“we”

(4b) ni
“you”
ni-men
(plural) “you”

It is also used with some common nouns referring to people:

(4c) peng-you
“friend”
peng-you-men
“friends”

(4d) tong-xue
“classmate”
tong-xue-men
“classmates”

(4e) hai-zi
“child”
hai-zi-men
“children”

There do seem to be limits on its usage with nouns of this sort, however. In particular, it seems to me that nouns referring to people with relatively informal relations tend to be more compatible with *men*, though I must point out that this has not been discussed in the literature that I have read, nor do I plan to substantiate it in the current study. I am simply pointing out that the use of *men* seems more odd where nouns referring to people with more formal relations:

(5a) yuan-gong
 “employee”
 ? yuan-gong-men

(5b) jiao-shou
 “professor”
 ? jiao-shou-men

compare:

(5c) lao-shi
 “teacher”
 lao-shi-men
 “teachers”

Perhaps the above are acceptable in certain contexts; on the other hand, the use of *men* is not allowed with nouns referring to non-humans:

(6a) shi-zi
 “lion”
 * shi-zi-men

(6b) shui-jiao
 “dumpling”
 * shui-jiao-men

Furthermore, not only is the use of *men* restricted to a subset of the nouns that refer to people (a subset of nouns itself), but more importantly for the issue of

mass/count, the use of *men* is incompatible with the counting of nouns that take the *men* suffix. In other words, *men* seems to work best in contexts where an indeterminate amount of people are involved. Chao (1968) calls attention to this by pointing out that the use of *men* results in a collective sense: not a mass quantity, but not countable, either. Some examples of these are as follows:

(7a) liang ge hai-zi
two (cl) kid
“two kids”

(7b) ? liang ge hai-zi-men
two (cl) kid-plural suffix

(7c) hen-duo hai-zi-men
many kid-plural suffix
“many kids”

The only time in which the *men* suffix is unequivocally well-formed with numeratives is when the numeral + numerative follow the noun; furthermore, the noun used in these instances is usually a pronoun:

(7d) * liang ge ni-men
two (classifier) you-plural suffix

(7e) ni-men liang ge
you-plural suffix two (classifier)
“You two”

Perhaps (7e) is well-formed where (7d) is not, due to the fact that “two” follows the otherwise-indeterminate *ni-men*, picking out two of that set. In any case, it turns out that even if there is a plural morpheme in Chinese, it is of such restricted usage that it is not helpful as a diagnostic for illustrating the mass/count distinction in the same way that plural morphology does in English.

The second grammatical phenomenon in English that points toward a mass/count distinction is the use of articles. Generally speaking, unmarked usages of mass nouns cannot take the indefinite singular “a/an.” Mass nouns also can occur without any articles (or other determiners) at all, while singular nouns cannot. The definite article “the” can be used with mass nouns, but “the” does not specify for number, as witnessed by the fact that “the” is compatible with both singular and plural nouns. If a mass noun is used with a measure word, the resulting noun phrase can take “a/an”, but not without the measure word. The above remarks on article use with mass nouns are illustrated below:

- (8) water
- the water
- * a water
- a cup of water

However, there are marked usages of indefinite singular articles with prototypically mass nouns: these are common when the context that listener and speaker are in affords them the option of deleting the assumed measure word:

- (9) a (mug of) beer
- “a beer”

Note, however, that this strategy only works if both speaker and listener are clear on what the deleted measure word is. If there is any ambiguity, a measure word needs to be used. For example, a given speaker seated at a table with others might say to the server: “A beer, please.” The server might then reply, “A glass for yourself, or a pitcher for the bunch of ya?” In our individualistic “dutch-treat” society, perhaps we would tend to assume that a single-person serving--a glass (or

mug)--is the deleted measure, but then that is a function of pragmatics and cultural knowledge, not the morphosyntax of the language.

Count nouns, on the other hand, can take both “the” and “a/an.” As noted above, the definite article “the” is compatible with both singular and plural nouns, while “a/an” is, by definition, incompatible with plural nouns. Conversely, plurals can occur without any articles (or determiners) at all, while singular nouns cannot.

These features of count nouns are demonstrated below:

- (10) * pen
- pens
- the pen
- a pen
- the pens
- * a pens

(Note: “Pen” is ungrammatical, insofar as any sentential context in which it can occur requires the presence of either an article or the numeral “one.”) Taken together, plural morphemes and the use of articles in English illustrate that mass nouns are morphosyntactically distinct from count nouns: they are unlike plurals (plural morphology), and also unlike singulars (use of articles).

Article usage as a diagnostic for looking into a mass/count distinction is likely to be a non-issue in Mandarin Chinese, just as plural morphology was shown to be. The reason for this is the same as in the first case: there are no articles in Mandarin, per se. There are demonstratives--words comparable to English “this” and “that”--which are followed by numerals (optional) and numeratives (obligatory), and these are necessarily definite. Indefiniteness can be expressed

with words translatable as “have” or “(a) certain,” with are then typically followed by the numeral “one” (optional) and numeratives (again, obligatory). The point is that these are not articles, just as the demonstratives are not articles. More importantly, no insights into a formal mass/count distinction can be made of these usages, because the form for all nouns is the same.

One might assume that there would be more to say about the use of quantifiers as an indicator of a mass/count distinction, given that both English and Chinese have quantifiers. For example, in English certain quantifiers are used exclusively with either count nouns (e.g. “many,” “a few”) or with mass nouns (e.g. “much,” “a little”), while some quantifiers are compatible with either (e.g. “some”). Mass nouns cannot be used with count noun quantifiers, unless there is a measure word in the noun phrase:

(11a) so much water/ a little water
 * so many water/ * a few water

(11b) * so much bowls of water/ * a little bowls of water
 so many bowls of water/ a few bowls of water

One could conclude that the quantifier pairs “many/much” and “a few/a little” are in complementary distribution, given the examples above.

As for quantifiers in Mandarin Chinese, even though it might appear at first as though there is finally a grounds for comparison, the real picture is not nearly as optimistic. Mandarin has two quantifiers in particular that look as if they are comparable to English “much” and “many.” The one that looks as if it might be

similar to English “much” is *hen-duo* (literally “very-many”). It is compatible with mass nouns that are without measure words; however, it is also acceptable with count nouns that have no classifier. In fact, *hen-duo* seems to resist co-occurring with both measure words and classifiers--especially measure words--even though it is not itself a measure word:

(12a) *hen-duo shui*
(quantifier) water
“a lot of water”

(12b) ? *hen-duo bei shui*
(quantifier) glass water

(12c) *hen-duo ren*
(quantifier) people
“a lot of people”

(12d) ? *hen-duo ge ren*
(quantifier) (classifier) people

According to my subjective impression, the “people” sentence without the classifier *ge* refers to an aggregate of undifferentiated people, whereas the one with *ge* is more individuating. More relevant to the analysis at hand is that the sentence with *ge* seems to me to be marked, relative to the one without *ge*. It should be repeated that this is my opinion, and is not based on any studies that I have come across. Nevertheless, even if my sense of Mandarin grammar fails me here, it is nonetheless true that *hen-duo* can quantify both count and non-count nouns, so it is not much like English “much” at all, as my translations of these phrases also suggest.

The case for a count noun quantifier in Mandarin is not really any stronger. If there is a candidate at all, it is the quantifier *hao-ji* (literally “good-(indeterminate) number”), which at first glance seems to be comparable to English “many,” or perhaps “several.” However, it must be followed by either a measure word or a classifier. That is to say, it too can co-occur with both mass and count nouns:

(13a) hao-ji bei shui
 (quantifier) cup water
 “many/several cups of water”

(13b) * hao-ji shui
 (quantifier) water

(13c) hao-ji ge ren
 (quantifier) (classifier) person
 “many/several people”

(13d) * hao-ji ren
 (quantifier) person

This would indicate that what *hao-ji* really does is demarcate [+count] noun phrases, rather than lexical nouns. This makes sense, insofar as *ji* is essentially a stand-in (albeit unspecific) numeral--given this observation, we would expect *ji* to be unable to be used without numeratives, for the same reasons that numerals cannot be used without numeratives. Hence, it turns out that Mandarin has quantifiers which are in something like complementary distribution--only not with mass and count nouns, but rather with numerative and numerative-less noun phrases.

Given the failure of plural morphology, articles and quantifiers to lend a means of looking into a possible mass/count distinction in Chinese, one might expect that if there is a case to be made at all, it might be in terms of numerative use--that is, measure words and classifiers. However, the previous section raised the problems that are inherent in looking for a mass/count distinction along measure word/classifier lines, and those problems will be revisited here.

In English, measure words can--and sometimes must--be used with mass nouns. This allows for [+count] noun phrases, by virtue of the measure word.

- (14) a cup of water
two cups of water

Note that “water” does not take a plural, but the measure word does. The situation is much different where count nouns are concerned--they do not take classifiers:

- (15) * a (classifier) dog

There are a few idiosyncratic count nouns, or nouns that seem as though they could be count nouns, that behave differently:

- (16a) * a scissor
* a scissors
* two scissors
many (* much) scissors
a pair of scissors
two pairs of scissors

- (16b) * a cattle
* two cattle
* two cattles
many (* much) cattle
(?) a head of cattle
two head of cattle

What are “pair” and “head,” exactly? Are they measure words or classifiers? That depends on how these plural tantums are interpreted. On the basis of the inability of such nouns as “scissors” and “cattle” to co-occur with the indefinite article, they are not like count nouns; however, the fact that they take the quantifier “many,” rather than “much,” is an argument that they are count nouns. These are very much like the diagnostic tests that Allen (1980) uses to test the “countability preferences” of nouns: Allen’s diagnostics show that nouns like “cattle” and “scissors” occupy a position somewhere in the middle of the continuum (though Allen’s analysis is much more thorough than what I have given here). So, the status of “pair” and “head” here is not altogether clear.

In any case, the vast majority of count nouns do not have anything remotely resembling Chinese classifiers. Count nouns in the aggregate take measure words:

- (17) a pack of dogs
two packs of dogs

Here “dog” must take a plural morpheme in both instances, as it is being used in the aggregate. This measure word “pack” is just that--a measure word--and the noun phrase as a whole focuses on a non-individuated aggregate.

Chinese is similar to English with respect to the use of measure words with mass nouns. That is to say, measure words can--and sometimes must--be used with mass nouns:

- (18a) yi bei shui
one cup water
“one cup of water”

- (18b) liang wan fan
two bowl rice
“two bowls of rice”

These noun phrases could be said to be [+count], as there are numeratives being used in them. These mass nouns, like English mass nouns, do not have [+count] as an inherent property--else they would not be mass nouns--and so in order to become countable, they require measure words.

As for count nouns--or, more specifically, what I would like to claim are count nouns--classifiers can, and sometimes must, be used:

- (19a) yi zhi gou
one (classifier) dog
“one dog”

- (19b) *yi gou
one dog

Also, aggregates of count nouns take measure words, just as in English:

- (20a) yi qun gou
one pack dog
“a pack of dogs”

- (20b) *yi qun zhi gou
one pack (classifier) dog

- (20c) *yi zhi qun gou
one (classifier) pack dog

When the aggregate measure word is used, a classifier cannot be used.

As has been pointed out already, there are problems with using the above account of measure words and classifiers in Mandarin as “proof” that Chinese formalizes a mass/count distinction. The biggest problem is that measure words

and classifiers are distributed similarly: there do not seem to be any morphosyntactic grounds for teasing the two apart, despite the fact that there may be semantic reasons for wanting to do so. That aggregate measure words push out classifiers suggests that, syntactically speaking, they are fulfilling the same function. Another piece of evidence militating against a mass/count distinction in Chinese is that in noun phrases without any numeratives--measure words or classifiers--there is nothing to distinguish supposed mass nouns and count nouns from one another:

(21a) wo xi-huan he niu-nai
I like drink milk
“I like to drink milk”
(* “I like to drink milks/a milk”)

(21b) wo xi-huan yang chong-wu
I like raise pet
“I like to raise pets”
(* “I like to raise pet”)

The mass noun phrases in both English and Mandarin are potentially well-formed in the absence of accompanying morphosyntactic elements: they occur in at least some environments without the aid of plural morphemes, articles, quantifiers or measure words. However, this is not true of count nouns in English, while it is true of count nouns (if they are such) in Chinese. This further suggests that the mass/count distinction is tenable in English, but much more problematic to demonstrate in Chinese.

The gist of the preceding discussion of plural morphology, articles, quantifiers and numeratives is summarized below:

Table 4.1
The Formalization of Mass/Count in English and Chinese

	English		Chinese	
	mass nouns	count nouns	mass nouns	count nouns
plural morphemes	Cannot generally take them	Can take them	No plural morphology, per se--at least none that can be used consistently for all, or even most, nouns	
articles	Unmarked usages cannot take "a/an," but can occur without articles	Singular ones can take both "the" and "a/an," but cannot occur without articles	No articles, per se--though demonstratives and numerals are used, no mass/count distinction can be made of this; also, all nouns can occur without demonstratives in indefinite contexts	
quantifiers	Some are used exclusively with mass nouns, such as "much/a little"	Some are used exclusively with count nouns, such as "many/a few"	Chinese <i>hen duo</i> is compatible with (measure word-less) mass nouns, but it is also OK with (classifier-less) count nouns	Chinese <i>hao ji</i> seems to be comparable to English "many/several." However, it must be followed by either measure words or classifiers
classifiers & measure words	Measure words can, and sometimes must, be used with mass nouns--this allows for [+count] noun phrases by virtue of the measure words	No classifiers Do have measure words that give aggregates of count nouns	Measure words can, and sometimes must, be used for mass nouns--this allows for [+count] noun phrases by virtue of the measure words	Classifiers can, and sometimes must, be used with count nouns Do have measure words that give aggregates of count nouns

BUT, the problems with distinguishing mass and count nouns in Chinese via the distribution of measure words and classifiers are as follows:

- (1) Measure words and classifiers are distributed similarly--there do not seem to be any morphosyntactic or distributional grounds for teasing the two apart, despite the fact that there are semantic reasons, and possibly lexical category reasons, for wanting to do so. Note too that aggregate measure words "push out" classifiers--suggesting that, syntactically speaking, they are fulfilling the same function.
- (2) In noun phrases without any measure words or classifiers, there is nothing to distinguish the mass and count nouns from one another.

4.2 A Better Place to Look for a Solution

My belief that there may yet be a way in which it makes sense to speak of a mass/count distinction at the lexical noun level in Chinese arises from the particular distribution of a pair of measure words in that language. These measure words are *xie* and *dian*. They function much more like measure words than they do as classifiers, as they tend to demarcate amounts, or portions, of things. An example with *xie* makes this clear:

(22a) yi xie ren
 one (measure) person
 “some/a few people”

(22b) yi ge ren
 one (classifier) person
 “one person”

The use of *xie* refers to a grouping, or a certain amount, of people; it does not refer to a single person, as the use of a classifier does. The use of *dian* is perhaps more problematic than the use of *xie*, because *dian* typically occurs in noun phrases in which the head noun does not tend to take a classifier:

(23a) yi dian bai-fan
 one (measure) white rice
 “some/a little rice”

(23b) ? yi ke/li bai-fan
 one (classifier) white rice

However, this does depend in some part on the nature of the numeratives, and whether one interprets them to be classifiers. An example of this is as follows:

(24a) yi dian bai-mi
one (measure) uncooked white rice
“some/a little uncooked rice”

(24b) yi li/ke bai-mi
one (classifier) uncooked white rice
“a grain of uncooked rice”

The classifiers *li* and *ke* are prototypically used with small, particle-like things. I believe that the kinds of nouns which are capable of taking *li* and *ke* as classifiers will tend to be able to take *dian* as a partitive measure as well. However, I am getting ahead of myself here: I will return to this issue of the distribution of *xie* and *dian* shortly.

It bears noting that *xie* and *dian* are a special sub-type of measure word, in that it is not really possible to ever use them to count above one (Chao (1968)). For example, measure words like *bei* (“cup”) or even the collective *qun* (“pack,” or “group”), can be counted above one, such that we can say the following:

(25a) liang bei shui
two cup water
“two cups of water”

(25b) si qun gou
four pack dog
“four packs of dogs”

However, *xie* and *dian* are only well-formed with *yi* (“one”):

(26a) yi xie peng-you
one (measure) friend
“some/a few friends”

(26b) * liang xie peng-you
two (measure) friend

(26c) yi dian bai-fan
one (measure) white rice
“some/a little white rice”

(26d) * san dian bai-fan
three (measure) white rice

Also, while they--*xie* unequivocally so, and *dian* much less so--are also compatible with the demonstratives *zhe* (“this”) and *na* (“that”), the meaning is invariably singular, as in *zhe-yi (zhei) xie...* (“this one *xie*...”) or *na-yi (nei) xie...* (“that one *xie*...”). This restriction does not hold for other measure words--hence one can say the following:

(27a) zhe liang bei shui
this two cup water
“these two cups of water”

(27b) na si qun gou
that four pack dog
“those four packs of dogs”

Given the fact that I am translating *xie* and *dian* as “some (a few)” and “some (a little),” respectively, one might speculate that what we have here are instances of quantifiers, rather than measure words. The fact that *xie* and *dian* cannot be used with numerals other than “one,” and that *dian* at least does not seem to configure quite so well with demonstratives, are additional pieces of evidence against classifying them as measure words. On the other hand, they are in other ways more like measure words than they are like quantifiers. First, their form of “number(/demonstrative) + *xie/dian* + noun” fits the numerative pattern. Second, they suppress classifiers or other measure words when they are used in a noun

phrase, fulfilling the earlier-stated requirement that each noun phrase in Mandarin

Chinese can have only one numerative:

(28a) yi xie ren
 one (measure) person
“some/a few people”

(28b) * yi xie ge ren
 one (measure) (classifier) person

(28c) * yi ge xie ren
 one (classifier) (measure) person

Apparently (28b) is used in Mainland China, though this pattern is found only with the classifier *ge*, and only when *ge* is followed by a noun with the feature [+human]. Hence, the observation that *xie* and *dian* cannot co-occur with other numeratives is still mostly true.

Quantifiers do not function in the same way at all. For example, the quantifiers *hen-duo* and *hao-ji* do not really fulfill either of the two above conditions. First, neither of these quantifiers can be preceded by a number or a demonstrative--a strong indicator that they are not at all like numeratives:

(29a) hen-duo dian-hua
 (quantifier) telephone
“many (a lot of) telephones”

(29b) * yi hen-duo dian-hua
 one (quantifier) telephone

(29c) hao-ji ge dian-nao
 (quantifier) (classifier) computer
“many/several computers”

(29d) * yi hao-ji ge dian-nao
 one (quantifier) (classifier) computer

Second, neither of these quantifiers can exclude the presence of numerative in a noun phrase. For *hao-ji* this is obviously the case, as it requires the use of a numerative following it:

(30a) * hao-ji chuan
 (quantifier) boat

(30b) hao-ji sou chuan
 (quantifier) (classifier) boat
 “several (many) boats”

(30c) * hao-ji mai-pian
 (quantifier) cereal

(30d) hao-ji wan mai-pian
 (quantifier) bowl (measure word) cereal
 “several (many) bowls of cereal”

The case for *hen-duo* is more complex, as it is quite often used without classifiers following it, and it may even be the case that measure words are not truly well-formed in juxtaposition with it. However, I believe that this is explicable on semantic grounds: *hen duo* is inherently more indeterminate than *hao-ji*, and so using it with numeratives might be, in some usages, semantically odd.

Syntactically, however, it is possible to use numeratives with *hen duo*. Although the indeterminacy of *hen-duo* renders the use of classifiers unnecessary, it does not entirely rule out the possibility of using classifiers. It may be that *hao-ji* indicates that a given noun phrase has the feature [+count], while those with *hen-duo* (and without a numerative) are [-count], to use Allen’s (1980) notion that a binary mass/count distinction is more accurately predicated at the noun phrase level.

Perhaps determining whether *xie* and *dian* are measure words is not such a simple matter after all. It seems that *xie* and *dian* may share a sense of indeterminacy in common with *hen duo*. Also, although it was pointed out that quantifiers do not push numeratives out of noun phrases, it should be noted that quantifiers are unable to co-occur with the partitive measures *xie* and *dian*:

(31a) hao-ji zhi ye-lang
 (quantifier) (classifier) wolf
 “many wolves”

(31b) hao-ji qun ye-lang
 (quantifier) (measure) wolf
 “many packs of wolves”

(31c) * hao-ji xie/dian ye-lang
 (quantifier) (measure) wolf

(31d) hen-duo shui
 (quantifier) water
 “A lot of water”

(31e) ? hen-duo bei shui
 (quantifier) (measure) water
 “A lot of cups of water”

(31f) * hen-duo xie/dian shui
 (quantifier) (measure) water

Perhaps it is the case that *xie* and *dian* occupy a kind of grey area between quantifiers and numeratives: syntactically and distributionally they are numeratives, but their senses and limited use with counting above one indicate that they are not prototypical measure words. Whether they are quantifiers or numeratives will not ultimately affect their potential usefulness as a diagnostic for illuminating a

mass/count distinction among lexical nouns, but the question is nonetheless an interesting one to ponder for its own sake.

Hitherto I have been reluctant to give unqualified translations for *xie* and *dian*. For both of them I provide a possible translation of “some,” emphasizing their similarities; I also provide for *xie* a translation of “a few” and for *dian* “a little,” thus pointing to possible differences. My ambivalence arises largely because my hypothesis with respect to looking into a possible mass/count distinction at the lexical noun level is one that involves an investigation of how *xie* and *dian* interact with individual nouns. To put it another way, I fear that in giving translations, I am presupposing that which I am setting out to investigate. In any event, my hypothesis is as follows: *xie* is more likely to be judged by native speakers of Chinese as being well-formed with nouns that manifest the feature of [+count] for their countability preference, while *dian* is not likely to be judged as being well-formed with these same nouns. As for nouns that tend to manifest the feature of [-count] for their countability preference, *dian* and *xie* are both acceptable. In Mandarin Chinese, it is mass nouns that have an extra morphosyntactic structure available to be used with them, and this structure is not acceptable with count nouns.

When I first began considering this problem of *xie* and *dian*, and their role in possibly demarcating a mass/count distinction, I felt that perhaps *xie* would be more “agreeable” with count nouns than it would be with mass nouns, even if but ever-so-slightly. Originally I had considered that *xie* was analogous to English “a

few” in meaning and distribution, while *dian* was analogous to “a little.” However, in English “a few” is not allowable with mass nouns, and yet I found myself unable to deny that *xie* does co-occur with nouns that I would hypothesize to be mass.

As a result, I came to see *xie* as being analogous to English “some”--for two reasons, the first of which is much stronger than the second. First, English “some” is compatible with both mass and count nouns, and it seems to me that I would hypothesize the same about *xie*. Second, the quantity referred to by “some” seems to me to be a slightly larger amount than either “a few” or “a little.” “some water” is a little more than “a little water,” and “some pretzels” are a few more than “a few pretzels.” Similarly, the quantity referred to by *xie* seems to me to be slightly more--or at least potentially so--than the quantity referred to by *dian*. This is also borne out in the use (in Mainland China) of *xie* with *hao*, resulting in a larger amount than *yi xie* does. I do not believe that they are so divergent in quantity as to render them incomparable; furthermore, I think that in many (if not most) contexts, the difference in quantity--in terms of amount of space displaced by said matter--is very likely inconsequential.

More important than the above is the question of discreteness, or individuation. That is, it seems to me that *xie* does carry a sense of discreteness, in a way that *dian* does not. For example, when I think of *xie* and *dian* being used with the noun *dong-xi* (“things,” or “stuff”), I feel that the senses are not entirely identical, though I do not doubt that they are often used interchangeably. For *xie*, I find myself imagining that the “things/stuff” involved are somehow more

separable: perhaps the quantity involved is ever-so-slightly larger than that as used with *dian*, but more than this there is a sense of discrete items. For *dian*, I am more likely--perhaps only ever-so-slightly so--to imagine the “things/stuff” as a collective whole. It is this sense of discreteness, coupled with my hypothesis that *dian* does not co-occur well with nouns that I would posit to be count nouns, that has motivated me to put forth this proposal concerning a possible mass/count distinction in Chinese.

What have other researchers had to say about *xie* and *dian*? Chao (1968) gives some attention to both forms in his work on Chinese grammar. Chao defines *xie* as “some, an amount of, a number of.” (p. 598). He claims that *xie* is, semantically speaking, a group measure--it measures off groups of things. As such, I would say that it denotes aggregates of countable things. However, Chao adds that, distributionally, *xie* seems to behave like a partitive measure, the same category in which we find *dian*. Chao contrasts group and partitive measures in positing that the latter tend to measure off portions, not groups. In this schema, *dian* is a prototypical partitive measure if it is only compatible with nouns that have the feature [-count] as their countability preference; *xie* is in the partitive category not for these semantic reasons, but because it is not conducive to use with numbers above “one.” On the other hand, if *xie* is also compatible with [-count] nouns, then there are semantic grounds for placing it in Chao’s partitive measure category.

Li & Thompson (1981) state that *xie*--which they term a “classifier” (though it should be pointed out that they tend to use the term “classifier” in a manner

similar to my use of “numerative”)--is essentially plural in meaning: if this is the case, we might expect that *xie* is only allowed to co-occur with nouns which can be pluralized. This ability to be made plural seems to be one that nouns with the feature [+count] should certainly have, while nouns with the feature [-count] should not have it. D. Li (1988) claims that both *xie* and *dian* are “indefinite units” (p. 76), and continues on to claim that *dian* is compatible with small quantities, with the only restriction being against using *dian* in reference to nouns denoting people. If in fact this is the only restriction, then *dian* should be able to co-occur with any number of non-human nouns with the feature [+count].

As for how the above explications of *xie* and *dian* relate to my hypothesis, I tend to find Chao’s (1968) accounting of them the most satisfactory: he manages to define possible semantic distinctions between the two, while also pointing out formal similarities. Li & Thompson (1981) do not have a great deal to say on this subject, though what they do say is very probably not accurate: if *xie* is a plural measure word, then we really have to wonder what this would mean if it is borne out that *xie* is compatible with both [+count] and [-count] nouns. However, I most disagree with Li (1988), in that I hypothesize that proficient speakers of Chinese will find *dian* to be incompatible with [+count] nouns in general, not simply nouns with the feature [+human].

If my hypothesis holds true, it would suggest that there are some grounds for claiming that Chinese contains a morphosyntactic means of differentiating mass/count at the lexical noun level, even if the evidence is not as copious, nor as obvious, as that found in certain other languages, such as English.

Chapter Five

Methodology

5.1 General Design: Hypothesis, Writ Large

My hypothesis is essentially this: the measure words *xie* and *dian* will have different distribution patterns, and these differences will be illustrative of a mass/count distinction among lexical nouns in Chinese. More specifically, I postulate that *xie* will be judged as acceptable with all nouns, regardless of mass/count status; *dian*, on the other hand, will be more selective in its distribution. *Dian* will resist co-occurring with nouns that I posit to be [+count]--that is, nouns that refer to objects which are individuated, and perceptually construed such that one cannot divide any one of them into pieces and still have instances of those things. In other words, prototypically [+count] nouns are not “sliceable;” prototypically [-count] nouns, on the other hand, are very much “sliceable,” meaning that they are perceptually construed such that one can divide them into pieces and still have instances of those things.

In the context of the survey instrument that I am using for this thesis, I hypothesize the following (references are briefly made to the instruments, and a complete set of the survey instrument can be found in the appendices).

For the short story that includes various errors:

1. Participants will correct those usages of *dian* that are used with [+count] nouns.

That is to say, errors of this sort are noticeable and will be corrected without prompting.

For the appropriateness judgment task:

1. The usages of *xie* will be judged as acceptable with all of the nouns, regardless of mass/count status.
2. The usages of *dian* will be more selective. *Dian* will be judged as unacceptable with nouns that I posit are [+count], but acceptable with nouns that I posit are [-count]. Even though *dian* does carry a semantic sense of “little,” it is still much more likely to be judged as acceptable with big, [-count] nouns than with little, [+count] nouns.
3. Ordering effects will be minimal, if present at all--that is, it does not matter what order the sentences are being read in.
4. Participants from Taiwan and China will give similar, if not essentially identical, responses.

5.2 Testing Stimuli and Variables: Hypotheses, in *Minutia*

The testing stimuli used in the instrument are the measure words *xie* and *dian*. The variables of major interest to me are mass and count, or, in other words, [-count] and [+count]. I posit that both [-count] and [+count] are compatible with *xie*, while only those that are [-count] are compatible with *dian*. *Dian* has a limited distribution relative to *xie*; [-count] nouns are less restricted than [+count] nouns, in terms of distribution with *xie* and *dian*.

As for the issue of size, I believe that it may be true that small, [-count] nouns are more acceptable with *dian* than are big, [-count] nouns. Furthermore, it might be the case that small, [+count] nouns are more acceptable with *dian* than are big, [+count] nouns. However, I posit that the mass/count dimension is more significant than the size component, and hence big, [-count] nouns are much more acceptable with *dian* than are small, [+count] nouns.

A look at the words used in the survey instrument will give some much needed context to these somewhat abstract notions. In the short story, I chose eight words to use with *xie* and *dian*, and in the acceptability judgment task, I chose thirteen. They are provided in the table below, in the order that they appeared in the survey:

Table 5.1
List of Lexical Noun Stimuli

Words used in Short Story	Words used in Appropriateness Judgment Task
1. <i>dong-xi</i> (“thing/stuff”)	1. <i>dong-xi</i> (“thing/stuff”)
2. <i>guo-zhi</i> (“juice”)	2. <i>guo-zhi</i> (“juice”)
3. <i>bei-zi</i> (“cup”)	3. <i>bei-zi</i> (“cup”)
4. <i>kong-qi</i> (“air”)	4. <i>jia-ju</i> (“furniture”)
5. <i>bao-mi-hua</i> (“popcorn”)	5. <i>mu-chai</i> (“firewood”)
6. <i>bing-bang</i> (“popsicle”)	6. <i>bing-bang</i> (“popsicle”)
7. <i>jia-ju</i> (“furniture”)	7. <i>shi-wu</i> (“food”)
8. <i>ke-ben</i> (“textbook”)	8. <i>zhu-bao</i> (“jewel”)
	9. <i>bao-mi-hua</i> (“popcorn”)
	10. <i>shu-cai</i> (“vegetable”)
	11. <i>dong-wu</i> (“animal”)
	12. <i>ping-guo</i> “#1” (“apple”: whole)
	13. <i>ping-guo</i> “#2” (“apple”: sliced)

Participants are not ranking the words in the short story according to appropriateness with measure words: rather, the sole purpose for including the short story in the survey is to check whether participants will find certain occurrences of these nouns with *xie* or *dian* to be erroneous. More specifically, I posit that mass nouns will not be corrected at all, as they should be compatible with both *xie* and *dian*. The count nouns, on the other hand, will be corrected when they occur with *dian*, as *dian* is only acceptable with [-count] nouns. I claim that these eight nouns have the following mass/count preferabilities (using the English translations):

Table 5.2
Stimuli Used in Short Story, and Proposed Mass/Count Status

Mass ([-count]) nouns: compatible with <i>dian</i>	Count ([+count]) nouns not compatible with <i>dian</i>
1. “thing/stuff” 2. “juice” 3. “air” 4. “popcorn”	1. “cup” 2. “popsicle” 3. “furniture” 4. “textbook”

The nouns in the “mass” column are mostly prototypical mass nouns along both ontological (the physical make-up of the referent) and semantic (conceptualization) lines, and one would perhaps expect to see them show up as mass nouns in those languages that have a mass/count distinction. “Juice” and “air,” representing liquids and gases, respectively, are unequivocally [-count], “sliceable” nouns. For “thing/stuff,” its very indeterminateness--or, in other words, lack of boundedness--tends to favor a [-count] interpretation. As for “popcorn,” it may not be obvious whether or not we have a noun that will be [-count] in Chinese: after all, “popcorn” is composed of individuated particles which can be said to be perceptually salient in a way that is not true of the microscopic components of liquids or gases. This ambiguity is exacerbated by the seeming inconsistency, both between various languages and within individual languages, of the mass/count status of the class of small particle nouns. An example of an apparent language-internal inconsistency in English can be found with the mass/count status of “beans” ([+count]) on the one hand, and “rice” ([-count]) on the other. Wierzbicka (1985) devotes a lot of attention to this very question, and posits that mass/count classifications of these

nouns are not nearly as haphazard as they may seem: those small particle-like nouns which are perceived by the users of a language as salient and individuated are more likely to be [+count] than those nouns which are not so perceived. One might say that the ontological status of the referent, though it is an important criterion in determining mass/count status, is not the final one: this distinction belongs to the cognitive realm, and how perceivers tend to conceptualize their world. To get back to the noun “popcorn,” I posit that the individual kernels are not typically individuated or perceptually salient, and so “popcorn” will have a [-count] interpretation.

I also posit that the nouns in the [+count] column are, by and large, prototypical count nouns--at least along ontological/semantic lines. “Cup” and “textbook” are perhaps the most prototypical of the set, as they are very much individuated, and not at all “sliceable” (in the sense of being able to be sliced up and still maintain their original constitution). “Popsicle” is perhaps more “sliceable” than the aforementioned pair, as one could conceivably cut up a popsicle into pieces and be left with “popsicle matter.” However, I maintain that “popsicle” is sufficiently individuated and perceptually salient such that it is [+count]. The inclusion of “furniture,” however, might strike some as a strange candidate for the [+count] column--after all, in English it certainly is not used as a count noun. One reason for this is suggested by McPherson (1991): mass, being unmarked relative to count, is available for use by superordinate terms. Interestingly, this can occur even when the members of the set (in this case the members of the set “furniture”) seem

to be composed entirely of count nouns. English is not very consistent in this regard, however: “animal” is a superordinate as well, and yet it is used as a count noun. Perhaps even more illustrative yet is the English pair “vegetable” and “fruit”: the former is count, while the latter is mass, morphosyntactically. It would appear that in English, superordinates are inconsistent in terms of their mass/count status. However, I posit that in Chinese “furniture” is a count noun, and that there are ontological and semantic reasons for claiming this. Even though “furniture” comprises a set of objects, and these objects are indeterminate until specifically denoted, it is the case that any member of this set is likely to be a count noun, at least along ontological and semantic grounds. As a result, the class as a whole will tend to be [+count] as well. Furthermore, I hypothesize that this is not only true of “furniture,” but also of any superordinate which is composed of a set of nouns, such that said nouns refer to objects which are prototypically [+count]. However, if a superordinate is composed of nouns whose referents are very likely to be “sliceable,” then the superordinate itself will tend to be [-count]. As the members of the set “furniture” are not sliceable--able to be sliced up and yet retain their original constitution--then “furniture” itself is likely to be used as a count noun, and hence to be incompatible with *dian*.

I believe that it may well be the case that the potential “slicability” of the referent of a noun as a factor in determining its mass/count status will differ between basic level nouns and superordinates. For basic level nouns, being potentially sliceable is not sufficient reason for classifying it as [-count]: for

superordinates, potential slicability is sufficient grounds for classification as [-count]. This asymmetry is due to the nature of what is being conceptualized: in using basic level nouns, a relatively more concrete conceptualization takes place, while superordinates tend to be a more abstract class of nouns. By definition, superordinates have fewer features than do basic level nouns, and are hence more abstract. Because individual basic level nouns have more features than do the superordinate classes to which they belong, I believe that if the referent is sufficiently individuated, the noun will be [+count], whereas if the referent is not individuated, the noun will be [-count]. Superordinates, on the other hand, are relatively inexact, and so the potential slicability of the members of the class is a relevant factor in determining mass/count status.

The implications of the above discussion are worthy of being stated in more explicit terms. What I am saying is that the morphosyntactic realization of the mass/count distinction in Chinese will adhere to the ontological and semantic senses of mass/count in a more consistent manner than is seen in English. That is to say--if I am correct in my hypotheses--the mapping of mass/count from ontological/semantic criteria to morphosyntactic form is more reliable in Chinese than it is in English. It is true that researchers such as Wierzbicka (1985) have shown that the supposedly arbitrariness of mass/count status with regard to certain nouns in English is in fact overstated, and I tend to agree with this view. However, that does not mean that there is no arbitrariness at all. Furthermore, it may turn out that Chinese has more arbitrariness in this area than I am claiming--that is,

assuming that we find evidence of a formalized mass/count distinction at all! In any case, my hypothesis is that the mass/count distinction will be shown to be more semantically transparent in Chinese than it is in English.

As for the words used in the appropriateness judgment task, there is some overlap with the words used in the short story. The overlap is intentional: I want to check for cross-task consistency. That is, will participants be consistent in their corrections and judgments such that if they correct a given usage in the story, will they judge that same usage to be inappropriate in the second task? In a related vein, if they do not correct a given usage, will they then go on to judge that same usage to be appropriate? Low cross-task consistency would have implications for the usefulness, or rather the lack thereof, of *xie* and *dian* as diagnostics.

On the other hand, I also added some nouns that are not in the short story. This is intentional as well: I deliberately chose stimuli that I believe will allow me to make certain claims about *xie* and *dian* as useful diagnostics toward figuring out a mass/count distinction in Chinese. More specifically, I want to investigate the importance of the size factor in determining the well-formedness of *dian* with nouns. My position is that the size factor, while perhaps existent, is minor in comparison with the mass/count factor. That is to say, the [+/- count] status of a noun is more important than the size of the referent in determining *xie/dian* distribution.

The above discussion will be more apparent when seen in context--hence, below is a table of the thirteen nouns used in the appropriateness judgment task, according to the mass/count status that I posit will hold true for them:

Table 5.3
Stimuli Used in the Judgment Task, and Proposed Mass/Count Status

Mass ([−count]) nouns: compatible with dian	Count ([+count]) nouns: not compatible with dian
1. “thing/stuff” 2. “juice” 3. “firewood” 4. “food” 5. “popcorn” 6. “vegetable” 7. “apple” #2 (sliced)	1. “cup” 2. “furniture” 3. “popsicle” 4. “jewel” 5. “animal” 6. “apple” #1 (whole)

The nouns that are also used in the story will not be discussed below, as they were already explained above.

In the mass column, there are four new nouns: “firewood,” “food,” “vegetable” and “apple” (sliced). The superordinate “food,” like “thing/stuff,” is sufficiently indeterminate that it will not carry a sense of being individuated--hence, it is [−count]. As for the superordinate “vegetable,” even though its members are able to be individuated and are perceptually salient, the class as a whole is very much “sliceable.” In fact, they are literally sliced up in all contexts when Chinese people come into contact with them. This ability to be sliced up and still retain their original constitution qualifies “vegetable” as a mass noun. The basic-level “apple” (sliced) is also posited to be [−count], as it is no longer an

individuated whole: it has become, in a sense, “apple matter.” This leaves “firewood” to be explained: the largeness of prototypical pieces of firewood--and hence their enhanced perceptual saliency--might lead one to believe that “firewood” should be considered a [+count] noun. However, I hypothesize that it is indeed a mass noun, on the grounds that it is prototypically sliceable, and so its potential individuation is suppressed relative to its ability to be sliced up and still retain its identity.

As for the count column, there are three new nouns: “jewel,” “animal” and “apple” (whole). The superordinate “animal” is obviously individuated: the members of the set “animal” are highly individuated, and not at all “sliceable.” It is true that one could literally slice up the members of the set “animal”: however, these pieces are not instances of “animal,” but rather are instances of “meat.” I would predict that “meat” is mass, being very much sliceable--though I did not include it in the appropriateness judgment task. “Animal,” however, is very much [+count]. As for “apple” (whole), I believe that it is sufficiently individuated, such that it is [+count]. It is true that a whole apple is potentially sliceable, and that I have been tending to place those nouns that are sliceable in the category of [-count]. However, “apple,” being a basic level term--that is, not a superordinate--has more semantic features associated with it, and thus tends to have a more concrete conceptualization (in a way that superordinates do not tend to have). That leaves “jewel,” which I have placed in the count column. I posit that “jewel,” although a superordinate, is such that its members are highly individuated, and not

prototypically sliceable. If this is true, then it would follow that “jewel” is a count noun.

The fifteen nouns--eight in the story, thirteen in the appropriateness judgment task, and with six being shared between them--discussed in detail above have been placed in one of two categories: mass on the one hand, and count on the other. However, it bears noting that some of the nouns are more prototypically mass, or count, than others in the same class. In other words, Allen's (1980) notion of lexical nouns as having countability preferences is very much the reality. Despite this, I still commit to a mass/count distinction, though it is one in which some nouns are more core members of their categories than are other nouns. For the thirteen nouns that are included in the appropriateness judgment task, I posit the following mass/count continuum:

Table 5.4
Stimuli Used in the Judgment Task: The Mass/Count Continuum

most [+count]: highly individuated; not at all sliceable	"cup": basic level "furniture" and "animal": superordinates
second-most [+count]: highly individuated; potentially sliceable, but not sliced up (basic level)	"apple" (whole) and "popsicle"
third-most [+count]: highly individuated; potentially sliceable, but not likely (superordinate)	"jewel"
THE GREAT MASS/COUNT DIVIDE	
third-most [-count]: composed of pieces, but not seen as individuated	"firewood" "popcorn" ("popcorn" more strongly [-count] than "firewood")
second-most [-count]: sliced up (basic level), or potentially sliceable (superordinates)	"apple" (sliced): basic level "vegetable": superordinate
most [-count]: completely unindividuated; very much sliceable	"juice": basic level "stuff/thing" and "food": superordinates (the former being especially indeterminate)

The table above, encapsulating as it does my position on the mass/count status of the various nouns, is essentially a prediction of acceptability with *dian*. More specifically, the nouns toward the top of the chart are expected to be incompatible with *dian*, as they are [+count]. As one moves down the chart, one will find increasing compatibility with *dian*. Note that I am expecting that there are core members of "count" and "mass," and also that there are more peripheral members; also note, however, that I predict a "great divide" between the two categories. Accordingly, I believe that there should be noticeable differences in compatibility with *dian*, and more specifically that the members on either side of the divide will

be closer together than the peripheral members of both sides will be with one another. In quantitative terms, what this means is that ideally I might expect the nouns that I have posited to be [+count] will reject co-occurrence with *dian* at least 75% of the time, and the most prototypical of the class will do so 100% of the time. The nouns that I have posited to be [-count] will be able to co-occur with *dian* at least 75% of the time, and the most prototypical of the category will do so 100% of the time. This is of course an idealization, but it is roughly what I am expecting--that is, if mass/count is the only relevant factor in determining compatibility with *dian*.

The other possible factor alluded to previously is that of size. That is, one might propose that the acceptability of *dian* with nouns will be a function of the size of the referent. *Dian* does tend to carry a semantic sense of “small” in its non-measure word usages:

- (1a) pang le yi-dian
fat (particle) one-indeterminate amount
“a little fatter” (than before)
- (1b) duo chi yi-dian
more eat one-indeterminate amount
“eat a little more”

If this is true, then the predicted order of acceptability with *dian* will have to be radically altered. The table below illustrates this:

Table 5.5
Stimuli Used in the Judgment Task, and Ranking According to Size

Prototypically large	None
Tend to be large	“furniture” and “animal”
Can be large or small	“thing/stuff” and “firewood”
Tend to be small	“food,” “vegetable” “cup,” “popsicle,” “apple” (whole) and “juice” (a portion)
Prototypically small	“apple” (sliced), “jewel” and “popcorn”

The above are my judgments, and I do not doubt that some, if not most, of them will be subject to some controversy. I have placed “furniture” and “animal” in the category of “tend to be large,” though of course there are members of the sets “furniture” and “animal” that are not large. Still, I tend to think of them as representing sets whose members are often thought of as large: as such, placement in the “tend to be large” category is a compromise between “prototypically large” and “can be large or small.” As for “juice,” it does not make sense to speak of large or small with respect to it--though I believe it does make sense to think of the size of prototypical serving of juice, which I take to be more small than large. It bears noting that the boundaries between these various size categories are not as fixed as the boundaries between count and mass; furthermore, they are perhaps even not as fixed as the boundaries within the categories count and mass as I have shown them in Table 5.4.

If the above is an accurate assessment of compatibility with *dian*, then there are no nouns that will be completely incompatible with it, though the “tend to be large” nouns will be mostly incompatible with *dian*. Most of the nouns (the “tend

to be small” and “prototypically small” ones) will be compatible with *dian*, and a minority (the “can be “large or small” ones) will hover somewhere in the middle, perhaps. We could even line up the two possibilities side-by-side, to get a better sense of the different predictions being made:

Table 5.6
Stimuli Used in the Judgment Task: Mass/Count and Size Factors, Juxtaposed

If compatibility with <i>dian</i> is contingent on mass/count (least-to-most)	If compatibility with <i>dian</i> is contingent on size factors (least-to-most)
<ul style="list-style-type: none"> • “cup,” “furniture” and “animal” • “apple,” “popsicle” • “jewel” <p style="text-align: center;">G R E A T D I V I D E</p> <ul style="list-style-type: none"> • “firewood” and “popcorn” • “apple” (sliced) and “vegetable” • “juice,” “food” and “thing/stuff” 	<ul style="list-style-type: none"> • “animal” and “furniture” • “thing/stuff” and “firewood” • “food,” “vegetable,” “cup,” “popsicle,” “apple” (whole) and “juice” (a portion) • “apple” (sliced), “jewel” and “popcorn”

This table is not ideal for predicting quantifiable differences, but it is helpful for looking at ordinal differences: the two columns make different predictions with regard to rank ordering of the various noun stimuli. In certain places the two possibilities make similar predictions: for example, both predict that “furniture” and “animal” will be incompatible with *dian* (the mass/count column more strongly so than the size factor column). Also, the “apple” (sliced), “juice,” “food,” “vegetable” and “popcorn” are roughly similar, though not at all identical. Put another way, the two columns give similar predictions when the nouns in question are either large, [+count] or small, [-count]: namely, large, [+count] nouns will not be compatible with *dian*, but small, [-count] nouns will be compatible with it.

The most interesting cases, however, are those where there is a “clash” between mass/count status on the one hand, and size factor on the other. That is to say, the two possibilities make different predictions when the nouns in question are either small, [+count] or not-small, [-count]. The small, [+count] nouns are “apple” (whole), “cup,” “popsicle” and “jewel”; there are no unequivocal large, [-count] nouns, per se, though “thing/stuff” and “firewood” can be large or small, and are [-count]. Essentially, if the size factor is more powerful an indicator of compatibility with *dian* than mass/count, then the small, [+count] nouns should be compatible with *dian*, and the “can be large or small” nouns should be at most only partly compatible with *dian*: in terms of rank order, they should be less compatible with *dian* than the small, [+count] nouns.

Of course, in addition to all of the above, there is the possibility that *dian* will be judged compatible with all nouns, regardless of mass/count or size factors. Obviously I am not expecting to see this borne out in the results, but it cannot be ruled out entirely.

5.3 Participants

I will solicit the participation of native, or extremely proficient, speakers of Mandarin Chinese. This means speakers--and readers and writers, as this is a written survey--who can claim Mandarin as their first language, or at least who were educated in Mandarin from grade school on (preferably Mandarin being the

primary, or at least major, mode of education). I believe that most of my subjects will be from Taiwan and Mainland China, though I am willing to administer the survey to anyone who meets the aforementioned requirements. In accordance with Human Subjects Protocol, I will solicit adult speakers only.

5.4 Instruments and Materials

The survey is composed of three parts: a personal information questionnaire, a short story and an “appropriateness” judgment task. I will describe each of these in turn, and a copy of the entire instrument (with translations) can be found in the appendices.

The personal information sheet asks for five pieces of information:

1. age
2. sex
3. schooling
4. place of origin
5. Mandarin: native language?

The purpose of this questionnaire is to be able to know more about the population I am looking at. More specifically, since I am hypothesizing that there will be minimal, if any, “ordering effects,” and also that participants from Taiwan and Mainland China will give similar results, I need to know if the populations being comparing are by-and-large homogeneous.

The second part of the survey is a short story titled “My Friend.” This is a story that I have written myself. It is perhaps not the most sociolinguistically, or

stylistically, appropriate piece of Chinese writing that I have seen, but by writing it myself I was able to control the stimuli--in this case, *xie* and *dian* as used with various nouns (see Table 5.1). The gist of the story is this: I go to a friend's house, and in the course of the story there are a number of instances in which things are eaten, or shown, or otherwise encountered. For each of these instances, the amount of the thing involved is a small, yet indeterminate, amount--exactly the kinds of environments in which one would expect to see *xie* and/or *dian* being used.

I have also deliberately added seven to eight non-measure word sentence-level errors; however, I do not rule out the possibility that participants will find errors in places which I have not intended to be taken as errors. The reason for adding non-measure word related errors is that I did not want the uses of *dian* which I have proposed will be identified as errors to be the only errors on the page. Instead, I thought it better to "hide" the alleged *dian* errors in a thicket of other attention-grabbing mistakes, in the hopes that if the *dian* errors are corrected as well, then they are indeed sufficiently noticeable errors, rather than being simple annoyances.

The directions for the short story "My Friend" are written in English, and they ask participants to circle any grammatical errors that they might find, and to make corrections if they know how to do so. The only English word that has a Chinese translation is "grammatical." I thought that in translating this word, it might be clear to the participants that I am asking for syntactically-oriented corrections, rather than usage problems or stylistics per se.

The short story has a Form A and a Form B version, which are identical in every respect but one: wherever Form A has *xie*, Form B has *dian*, and visa versa. What this means is that in Form A, the first, second, fifth and sixth nouns are used with *xie*, and the third, fourth, seventh and eighth nouns are used with *dian*; Form B is the exact reverse of this. In this way, there are an equal number of *xie* and *dian* in both forms.

The third part of the survey is an appropriateness judgment task. There are twenty-six sentences total: thirteen using *xie*, and thirteen using *dian*. In fact, the two sets of sentences are identical except for the use of the variables *xie* and *dian* (the thirteen nouns used in this final part of the survey can be found in Table 5.1). Not only are they identical across sets, but they are nearly identical within sets: for each set, ten of the thirteen sentences can be translated as “I went to the store to buy some (noun).” The final three sentences do not fit this pattern, however. One of them, “animal,” seemed entirely inappropriate to use in the “store” context, and so I changed the sentence with “animal” (in both sets, of course) to “I went to the zoo to see some ‘animal’.” As for the last two sentences, using “apple” (whole) and “apple” (sliced), I wanted the context to be entirely clear regarding which interpretation was appropriate. For the whole-apple sentence, I wrote “I found an apple tree, discovered that the apples were already ripe, and I picked some to eat.” For the sliced-apple sentence, I wrote “I peeled and cut up all of the apples, and took some to my friends.”

The directions for the appropriateness judgment task are as follows: participants are to read each sentence, focusing entirely on the use of *xie* and *dian*. If they find the use of *xie* or *dian* for a given sentence to be “appropriate,” they are to check the column labeled “OK.” If the use is marginal, or questionable, they are to check the column labeled “?”. If the use is not appropriate, they are to check the column labeled “not OK.” I decided on the use of “appropriateness” as a criterion for judging, because I thought the Chinese translation of the word--which I have provided in the directions--would make the task clear to anyone who takes the survey.

Perhaps more needs to be said about why there is a middle “?” option. I confess that it may have been simpler, for data collection purposes, to force participants to choose between “OK” and “not OK.” However, given the notion of “countability preference,” it seems to me a fair option to give. This way, if a participant reads a sentence and finds themselves unable to decide that it is either unambiguously appropriate or inappropriate, there is a way to register this ambivalence. Of course, this ambivalence is not necessarily indicative of mass/count and countability preferences; for that matter, a rating of “inappropriate” does not, in and of itself, mean that there is a mass/count distinction-related reason.

That is why I will need to compare the percentage difference between the appropriateness ratings for *xie* and *dian* across the thirteen noun stimuli. For example, if a given item is judged to be inappropriate with both *xie* and *dian*--a possibility that I have not considered before, but cannot rule out entirely--then it is

very likely the case that nothing of a mass/count distinction will be learned, at least with respect to that particular sample. In a “worst-case scenario” (for my survey design and/or my hypothesis, that is), all of the participants will find all of the noun stimuli to be inappropriate--or all appropriate--with both *xie* and *dian*. Were this to happen, I would have to entertain several possibilities: (1) my sentences are all “really strange” in some way, (2) *xie* and *dian* are not suitable for use as a diagnostic for finding a mass/count distinction, or even (3) there is no morphosyntactically realized mass/count distinction in Chinese, after all.

In any case, I am providing the option of “questionable appropriateness.” When all the data has been collected, I will code the replies as such: “OK” is 100% appropriate, “?” is 50% appropriate, and “not OK” is 0% appropriate. From these values I will calculate an acceptability rating for each noun, in use with both *xie* and *dian*. For example, suppose a group of five participants judge the use of “cup” with both *xie* and *dian* as follows:

“cup” with *xie*: 3 “OK,” 1 “?,” 1 “not OK”
“cup” with *dian*: 1 “OK,” 2 “?,” 2 “not OK”

The acceptability rating of “cup” with *xie* would be 70% $((3 \times 100\%) + (1 \times 50\%) / 5)$, while the rating of “cup” with *dian* would be 40% $((1 \times 100\%) + (2 \times 50\%) / 5)$. Furthermore, the percentage gap would be 30% (70% - 40%). All of these numbers might not mean very much in isolation, but when compared with the acceptability ratings of the other nouns, and when compared against the predictions made in

section 5.2, there would very likely be more interesting things about which one could speculate.

The appropriateness judgment task has a Form A and Form B as well. In Form A, the sentences with *dian* come first; Form B has the sentences with *xie* coming first.

Chapter Six

Results

This chapter looks at the results obtained from the three components of the survey: the personal information questionnaire, the short story and the appropriateness judgment task. The emphasis is on results for the participants taken as a whole, though I have also tried to include results according to the form of the instrument used, as well as the nationality of the participants.

The first table summarizes the results of the personal information questionnaire:

Table 6.1
Characteristics of Participants

		“Ordering Effect”		Place of Origin	
	All Participants	Form A	Form B	Taiwan	China
Age (average)	31.0	30.2	31.7	27.5	36.4
Sex (percentage)	59.0% F 41.0% M	63.6% F 36.4% M	54.5% F 45.5% M	71.4% F 28.6% M	37.5% F 62.5% M
Education Level (percentage)	77.2% college 22.8% M.A./PhD	72.7% college 27.3% M.A./PhD	81.8% college 18.2% M.A./PhD	92.9% college 7.1 % M.A./PhD	50.0% college 50.0% M.A./PhD
Mandarin: Native?	97.7%	95.5%	100%	100%	93.8%
Taiwan (number)	28	14	14		
China (number)	16	8	8		

For education level, I coded responses as such: anyone who answered “college” or anything other than “Master’s” or “PhD” was placed in the “college” category.

Nearly all of my participants were solicited from the P.S.U. community, so I know that the population I have is at the very least post-secondary. This means that if there are participants who are currently enrolled in graduate programs who responded “college”, they will be classified as “college” along with students who might have just completed high school. The “Master’s” and “PhD” is reserved for those participants who explicitly noted that they held either of those degrees.

As for the second part of the survey--the short story--there are several things that I would like to say about the data obtained therein. The first table concerns the corrections of non-measure word (non-*xie* or *dian*) errors, in average number of corrections made:

Table 6.2
Short Story: Corrections of Perceived Non-Measure Word Errors

	All Participants (44)	“Ordering Effect”		Place of Origin	
		Form A (22)	Form B (22)	Taiwan (28)	China (16)
all non- measure word errors	10.0	10.9	9.1	8.7	12.2
predicted errors	5.0	5.3	4.7	5.0	4.9
other errors	5.0	5.6	4.4	3.7	7.3

I have divided these non-measure word errors into two classes: those that I had intentionally placed--and hence had predicted would be corrected--and those that were not intentionally placed by me, but were yet perceived to be errors.

More important for the purposes of the study at hand are the tables given below-- they summarize the measure word (*xie/dian*) corrections made by participants. Since the uses of *xie* and *dian* in the story are in complementary distribution in Form A and Form B, the results are summarized in two separate tables. In addition, I have included information regarding what participants changed the measure words to:

Table 6.3a
Short Story: Corrections of Perceived Measure Word Errors for Form A

noun phrases	Form A (22)	
	Corrections by participants (number & percentage)	What respondents changed the measure words to (number)
<i>yi xie dong-xi</i> one (m) thing	0 0%	N/A
<i>na xie guo-zhi</i> that (m) juice	2 9.1%	deleted: 2
<i>na dian bei-zi</i> that (m) cup	21 95.5%	deleted: 10 <i>xie</i> : 6 <i>ge</i> (classifier): 5
<i>yi dian...kong-qi</i> one (m) air	5 22.7%	<i>xie</i> : 3 deleted: 2
<i>yi xie bao-mi-hua</i> one (m) popcorn	0 0%	N/A
<i>yi xie bing-bang</i> one (m) popsicle	0 0%	N/A
<i>yi dian jia-ju</i> one (m) furniture	18 81.8%	<i>xie</i> : 13 deleted: 5
<i>yi dian ke-ben</i> one (m) textbook	18 81.8%	<i>xie</i> : 11 deleted: 7

Table 6.3b
Short Story: Corrections of Perceived Measure Word Errors for Form B

noun phrases	Form B (22)	
	Corrections by participants (number & percentages)	What respondents changed the measure words to (number)
<i>yi dian dong-xi</i> one (m) thing	3 13.6%	<i>xie</i> : 2 deleted: 1
<i>na dian guo-zhi</i> that (m) juice	2 9.1%	deleted: 2
<i>na xie bei-zi</i> that (m) cup	0 0%	N/A
<i>yi xie...kong-qi</i> one (m) air	1 4.5%	deleted: 1
<i>yi dian bao-mi-hua</i> one (m) popcorn	0 0%	N/A
<i>yi dian bing-bang</i> one (m) popsicle	9 40.9%	<i>zhi</i> (classifier): 5 <i>gen</i> (classifier): 2 <i>xie</i> : 2
<i>yi xie jia-ju</i> one (m) furniture	0 0%	N/A
<i>yi xie ke-ben</i> one (m) textbook	0 0%	N/A

In addition to the above, I have also shown the rate of *xie/dian* corrections made by participants from Taiwan and Mainland China:

Table 6.4
Short Story: Corrections of Perceived Measure Word Errors, Across Nationality

	Form A (22)	Form B (22)
Total number of corrected <i>xie/dian</i> errors	64	15
Taiwan (number)	44	9
China (number)	20	6
Ratio: Taiwan: China	1.26: 1	1: 1.17

The above concludes the results that are related to the short story; the rest of this chapter is devoted to the results from the appropriateness judgment task. The first of these tables looks at acceptability ratings with *xie* and *dian*, and the percentage difference between these two (calculated by subtracting the acceptability rating of *dian* from that of *xie*). These values are tabulated for all thirteen nouns taken as a whole, and then for the “count” (the six nouns “cup,” “furniture,” “popsicle,” “jewel,” “animal” and “apple” (whole)) class and the “mass” class (the seven nouns “thing/stuff,” “juice,” “firewood,” “food,” “popcorn,” “vegetables” and “apple” (sliced)):

Table 6.5
Judgment Task: Acceptability Ratings for All Nouns, and for Count and Mass

			“Ordering Effect”		Place of Origin	
		All Participants (44)	Form A (22)	Form B (22)	Taiwan (28)	China (16)
both count and mass (13 nouns)	with <i>xie</i>	87.9%	93.0%	82.9%	87.9%	88.0%
	with <i>dian</i>	62.9%	59.6%	66.2%	61.0%	66.4%
	percentage difference	25.0%	33.4%	16.6%	26.9%	21.6%
count (6 nouns)	with <i>xie</i>	84.5%	88.3%	80.7%	82.2%	88.5%
	with <i>dian</i>	39.6%	34.9%	44.3%	36.0%	45.9%
	percentage difference	44.9%	53.4%	36.4%	46.1%	42.7%
mass (7 nouns)	with <i>xie</i>	90.9%	97.1%	84.7%	92.8%	87.5%
	with <i>dian</i>	82.9%	80.8%	85.0%	82.4%	84.0%
	percentage difference	8.0%	16.2%	-0.3%	10.4%	3.6%

However, looking at all thirteen nouns as a single grouping, or even at the proposed classes “count” and “mass,” is not sufficient: that is the reason for the

following three tables. Each table contains the acceptability ratings for each of the thirteen nouns--first with *xie*, then with *dian*, and last the percentage difference between them:

Table 6.6a
Judgment Task: *Xie* Acceptability Ratings

	Use of <i>xie</i> : acceptability rates (percentages)				
	Total (44)	“Ordering Effect”		Place of Origin	
		Form A (22)	Form B (22)	Taiwan (28)	China (16)
<i>dong-xi</i> thing/stuff	95.5%	100%	90.9%	100%	87.5%
<i>guo-zhi</i> juice	72.7%	86.4%	59.1%	78.6%	62.5%
<i>bei-zi</i> cup	93.2%	95.5%	90.9%	94.6%	90.6%
<i>jia-ju</i> furniture	92.0%	97.7%	86.4%	92.9%	90.6%
<i>mu-chai</i> firewood	94.3%	100%	88.6%	94.6%	93.8%
<i>bing-bang</i> popsicle	92.0%	97.7%	86.4%	87.5%	100%
<i>shi-wu</i> food	96.6%	100%	93.2%	98.2%	93.8%
<i>zhu-bao</i> jewel	68.2%	68.2%	68.2%	66.1%	71.9%
<i>bao-mi-hua</i> popcorn	85.2%	93.2%	77.3%	83.9%	87.5%
<i>shu-cai</i> vegetable	97.7%	100%	95.5%	100%	93.8%
<i>dong-wu</i> animal	67.0%	75.0%	59.1%	60.7%	78.1%
<i>ping-guo</i> (1) apple (whole)	94.3%	95.5%	93.2%	91.1%	100%
<i>ping-guo</i> (2) apple (sliced)	94.3%	100%	88.6%	94.6%	93.8%
total	87.9%	93.0%	82.9%	87.9%	88%

Table 6.6b
Judgment Task: *Dian* Acceptability Ratings

	Use of <i>dian</i> : acceptability rates (percentages)				
	Total (44)	“Ordering Effect”		Place of Origin	
		Form A (22)	Form B (22)	Taiwan (28)	China (16)
<i>dong-xi</i> thing/stuff	97.7%	97.7%	97.7%	96.4%	100%
<i>guo-zhi</i> juice	73.9%	65.9%	81.8%	69.6%	81.3%
<i>bei-zi</i> cup	19.3%	13.6%	25.0%	21.4%	15.6%
<i>jia-ju</i> furniture	36.4%	34.1%	38.6%	25.0%	56.3%
<i>mu-chai</i> firewood	59.1%	50.0%	68.2%	55.4%	65.6%
<i>bing-bang</i> popsicle	53.4%	47.7%	59.1%	50.0%	59.4%
<i>shi-wu</i> food	92.0%	97.7%	86.3%	91.1%	93.8%
<i>zhu-bao</i> jewel	52.3%	45.5%	59.1%	50.0%	59.4%
<i>bao-mi-hua</i> popcorn	85.2%	86.4%	84.1%	87.5%	81.3%
<i>shu-cai</i> vegetable	92.0%	93.2%	90.9%	91.1%	93.8%
<i>dong-wu</i> animal	8.0%	6.8%	9.1%	5.4%	12.5%
<i>ping-guo</i> (1) apple (whole)	68.2%	61.4%	75.0%	71.4%	62.5%
<i>ping-guo</i> (2) apple (sliced)	80.7%	75.0%	86.3%	85.7%	71.9%
total	62.9%	59.6%	66.2%	61.0%	66.4%

Table 6.6c
Judgment Task: *Xie/Dian* Percentage Differences

	Percentage differences: <i>xie</i> minus <i>dian</i>				
	Total (44)	“Ordering Effect”		Place of Origin	
		Form A (22)	Form B (22)	Taiwan (28)	China (16)
<i>dong-xi</i> thing/stuff	-2.2%	2.3%	-6.8%	3.6%	-12.5%
<i>guo-zhi</i> juice	-1.2%	20.5%	-22.7%	9.0%	-18.8%
<i>bei-zi</i> cup	73.9%	81.9%	65.9%	73.2%	75.0%
<i>jia-ju</i> furniture	55.6%	63.6%	47.8%	67.9%	34.3%
<i>mu-chai</i> firewood	35.2%	50.0%	20.4%	39.2%	28.2%
<i>bing-bang</i> popsicle	38.6%	50.0%	27.3%	37.5%	40.6%
<i>shi-wu</i> food	4.6%	2.3%	6.9%	7.1%	0%
<i>zhu-bao</i> jewel	15.9%	22.7%	9.1%	23.2%	3.1%
<i>bao-mi-hua</i> popcorn	0%	6.8%	-6.8%	-3.6%	6.2%
<i>shu-cai</i> vegetables	5.7%	6.8%	4.6%	8.9%	0%
<i>dong-wu</i> animal	59.0%	68.2%	50.0%	55.3%	65.6%
<i>ping-guo</i> (1) apple (whole)	26.1%	34.1%	18.2%	19.7%	37.5%
<i>ping-guo</i> (2) apple (sliced)	13.6%	25.0%	2.3%	8.9%	21.9%
total	25.0%	33.4%	16.6%	26.9%	21.6%

The last table that I am including is a “consistency rating.” The purpose of this is to check, for each form, whether the six noun phrases that the story and the appropriateness judgment task have in common are responded to consistently.

Participants' corrections and judgments are consistent--and are thus assigned a consistency rating of 100%--if (1) they do not correct a given measure word usage in the story, and judge the same usage to be "OK" in the appropriateness task, or (2) they correct a given measure word usage in the story, and judge the same usage to be "not OK" in the appropriateness task. If the participants judge a given measure word usage to be "?", then the consistency rating is 50%. Inconsistencies (0% consistency rating) occur when (1) corrections are made in the story, but then the same usage is judged to be "OK" in the appropriateness task, or (2) no corrections are made in the story, but then the same usage is judged to be "not OK" in the appropriateness task. There is another substantial group that has not been addressed yet: those participants who did not make any measure word corrections in the short story. No one using Form A fit this description; on the other hand, nearly half of those who used Form B did not make any *xie/dian* corrections in the short story (though they, like everyone else, made at least some corrections for non-measure word errors). Because of this, the results of those participants who did not make measure word correction are not included in the consistency ratings. The consistency ratings are as follows:

Table 6.7a
Form A Consistency Ratings: Across Short Story and Judgment Task

	Form A		
	All Participants (22) (percentage)	Taiwan (14) (percentage)	China (8) (percentage)
... <i>dian bei-zi</i> ...(m) cup	81.8%	92.9%	62.5%
... <i>dian jia-ju</i> ...(m) furniture	68.2%	78.6%	50.0%
... <i>xie dong-xi</i> ...(m) thing	100%	100%	100%
... <i>xie guo-zhi</i> ...(m) juice	77.3%	78.6%	75.0%
... <i>xie bao-mi-hua</i> ...(m) popcorn	93.2%	89.3%	100%
... <i>xie bing-bang</i> ...(m) popsicle	100%	100%	100%
Total	86.8%	89.9%	81.3%

Table 6.7b
Form B Consistency Ratings: Across Short Story and Judgment Task

	Form B		
	All Participants (12) (Note: 10 of the 22 participants, did not correct any <i>xie/dian</i> in the story)	Taiwan (8) (Note: 6 of the original 14 did not correct any <i>xie/dian</i> in the story)	China (4) (Note: 4 of the original 8 did not correct any <i>xie/dian</i> in the story)
... <i>dian dong-xi</i> ...(m) thing	75.0%	75.0%	75.0%
... <i>dian guo-zhi</i> ...(m) juice	70.8%	68.8%	75.0%
... <i>dian bao-mi-hua</i> ...(m) popcorn	79.2%	81.3%	75.0%
... <i>dian bing-bang</i> ...(m) popsicle	58.0%	87.5%	25.0%
... <i>xie bei-zi</i> ...(m) cup	87.5%	100%	62.5%
... <i>xie jia-ju</i> ...(m) furniture	75.0%	81.3%	62.5%
Total	74.3%	82.3%	62.5%

Chapter Seven

Discussion

7.1 Hypotheses Revisited

The hypotheses that I proposed in the methodology chapter are repeated here.

For the short story that includes various intentional errors:

1. Participants will correct those usages of *dian* that are used with [+count] nouns.

That is to say, errors of this sort are noticeable and will be corrected without prompting.

For the appropriateness judgment task:

1. The usages of *xie* will be judged as acceptable with all of the nouns, regardless of mass/count status.
2. The usages of *dian* will be more selective. *Dian* will be judged as unacceptable with nouns that I posit are [+count], but acceptable with nouns that I posit are [-count]. Even though *dian* does carry a semantic sense of “little,” it is still much more likely to be judged as acceptable with big, [-count] nouns than with little, [+count] nouns.
3. Ordering effects will be minimal, if present at all--that is, it does not matter what order the sentences are being read in.

4. Participants from Taiwan and China will give similar, if not essentially identical, responses.

I would like to comment first of all on the characteristics of the participants as culled from the personal information questionnaire (Table 6.1), as these traits can be brought to bear on the comparability of Form A versus Form B participants, and also those from Taiwan versus those from Mainland China.

For all participants, the average age is 31. Note that the average ages of Form A and Form B are very close, being within two years of each other; the gap in age between those from Taiwan and China, however, is much larger, being nearly nine years in distance. As for gender, there are more females than males, 18% more, for the participants as a whole. Again, Form A and Form B reflect this as well, with a somewhat higher gap in Form A than in Form B (nearly 27% difference in the former, and 9% in the latter). When looked at in terms of nationality, the disparity is much more striking: for Taiwan, there are over 42% more women than men; for China, there are 25% more men than women, which is a reversal of all the others. For education level, the numbers speak volumes as well. For participants as a whole, there are nearly 55% more college-level ones than there are Master's or PhDs. This gap is essentially upheld in Form A and Form B, with the gap in Form B being somewhat higher than the gap in Form A (63% gap in the former, and over 45% in the latter). For nationality, however, the difference is much greater: for Taiwan, there are over 85% more college-level ones than Master's or PhDs; for China, there are an equal number of each. As for Mandarin

Chinese as a native language, only one person--from Mainland China--did not claim it as a native language. However, I suspect that he qualifies as a native speaker at least as much as most of the other participants: he brought up the issue of “native” versus “second-language” status with me after he finished the survey, and suggested that most of the people marking Mandarin as their native language were not giving accurate answers, considering that most of them had most likely not been using Mandarin from birth on. His objections aside, I think that he qualifies as a native speaker of Mandarin according to the criteria that I have established--though I register his response as that of a non-native speaker, as he wished it to be marked.

What are the implications of the above? It appears that the characteristics of the Form A and Form B participants are mostly very similar: they have similar ages, genders, education levels, and native Mandarin speaking abilities. Also, there are an equal number of each: twenty-two in each group. Furthermore--and this is completely serendipitous--the number of participants from Taiwan and Mainland China are the same in each (fourteen and eight, respectively). If there are substantial differences in the results between Form A and Form B, these are very likely to be due to “ordering effects,” as the populations are otherwise very much alike. The same can not be said of the characteristics of the participants from Taiwan and Mainland China, however. The only thing they have in common is similarity in the percentage of native Mandarin speakers; when looking at age, gender, and education level, they are quite different. This is perhaps due to sheer

luck on my part, or failure to control for this more rigorously (though in fairness to myself, I must say that I was hardly in a position to turn any participants away). For whatever reason, the participants from Taiwan tend to be younger college women, while those from Mainland China are much more likely to be older, male, and in possession of a graduate-level degree. Furthermore, in terms of sample size, I have nearly twice as many participants from Taiwan as I do from Mainland China. Given these substantial trait differences, it would be surprising if there are no major result differences. Stated another way, if the results are similar despite the differences in participant characteristics, it would suggest that *xie/dian* usage is stable across national/ethnic, age, gender, and educational levels.

Having said that, it is time to analyze the results of the short story task. For the non-measure word corrections (see Table 6.2), participants overall made corrections to predicted errors and unintended errors at an equal rate, with an average of five errors each. Apparently, participants found fault with more than I had originally thought they would. Especially interesting are the results of participants from Taiwan and China: although they corrected the predicted errors at a comparable rate (about five for each), the Mainland China participants corrected twice as many of the unintended errors as did the Taiwan participants. Again, because of the different characteristics of these groups, I am unable to claim that the difference is due to nationality per se. However, it could be that my years spent in Taiwan have something to do with the fact that the Taiwan participants do not seem to object to my Mandarin grammar as much as the China participants do.

As for the hypothesis that participants will correct those usages of *dian* that are used with [+count] nouns--that errors of this sort are noticeable and will be corrected without prompting--I found this was mostly borne out by the results (see Tables 6.3a and 6.3b for the following). Corrections of *xie* were minimal, being restricted to a total of three: in Form A 9.1% (two people) corrected *na xie guo-zhi* (“that (measure) juice”), and in Form B 4.5% (one person) corrected *yi xie...kong-qi* (“one (measure) air”). No corrections were proposed--the measure words (and numeral) were simply deleted. As for corrections of *dian* with [-count] nouns, corrections were more common, but still in the minority: in Form A 22.7% corrected *yi dian...kong-qi* (“one (measure) air”), and in Form B 13.6% and 9.1% corrected *yi dian dong-xi* (“one (measure) thing/stuff”) and *na dian guo-zhi* (“that (measure) juice”), respectively. Of the ten corrections made, half of them were simple deletions, and the other half had *xie* substituted for *dian*--overall, still a very small number. In a side note, it turned out that use of the demonstrative *na* (“that”) with *dian* when the noun is mass (here, “juice”) was not corrected very often at all, contrary to what I was expecting.

The corrections of *dian* with [+count] nouns were plentiful, to say the least: in Form A, 95.5% corrected *na dian bei-zi* (“that (measure) cup”); also in Form A, 81.8% corrected both *yi dian jia-ju* (“one (measure) furniture”) and *yi dian ke-ben* (“one (measure) textbook”). Whether or not the slightly higher correction rate for *dian* with “cup” is due to its co-occurrence with the demonstrative *na* (“that”) is not clear to me--in any case, all three of these prototypically count nouns were

corrected. Furthermore, the corrections reveal that almost two-thirds of those who corrected *dian* with “textbook,” and over two-thirds of those who corrected *dian* with “furniture,” substituted *xie* in the place of *dian*. As for corrections of *dian* with “cup,” nearly half simply deleted it, over a quarter substituted *xie* for *dian*, and the remainder (nearly a quarter) substituted the individuating classifier *ge* for *dian*. As for Form B, 40.9% corrected *yi dian bing-bang* (“one (measure) popsicle”), and over three-quarters of these corrections substituted one of two individuating measure words (*zhi* and *gen*) for *dian*, the remainder substituting *xie* for *dian*. This rate of correction is not as high as I had hypothesized, even given the fact that “popsicle” is not as prototypically [+count] as the aforementioned three. Interestingly, over 40% of participants in Form B did not make any *xie/dian* corrections at all, suggesting that the violations contained therein were not nearly as flagrant as the ones in Form A.

As a final note on the short story data, I do not see much indication that there are any real differences in *xie/dian* corrections along nationality lines (see Table 6.4). Taiwan and China participants tended to make corrections at comparable rates: in Form A Taiwan participants made 26% more corrections, and in Form B they made 17% less corrections.

It would appear that the first hypothesis has turned out to be largely true: co-occurrences of *dian* with [+count] nouns are corrected without prompting. That leaves the second set of hypotheses, the ones related to the appropriateness judgment task.

The first hypothesis in this set is the one related to the use of *xie*: namely, that it is compatible with all nouns, regardless of mass/count status. However, the data show (see Table 6.5) that the overall acceptability rating of *xie* with all nouns is nearly 88%--perhaps high, but not quite 100% compatibility, after all.

Interestingly--considering the many differences in characteristics between the following two groups--the acceptability ratings for Taiwan and China participants are basically identical (88%). Perhaps more interesting than this--considering the many similarities in characteristics between the two groups--the acceptability ratings for Form A and Form B are not at all identical, differing by a 10% gap. The participants who took Form A had the list of *xie* sentence last, and their *xie* acceptability ratings are 10% higher than those of Form B, who had the *xie* list first. A look at the *dian* acceptability ratings shows that Form B participants give higher rating (though 6%--not as pronounced) than do Form A participants. This suggests that there may in fact be an "ordering effect:" namely, participants judge more harshly the first list of sentences that they encounter. Hence, my third hypothesis in this set--that the "ordering effect" would be minimal, if not non-existent--has turned out to be wrong.

The *xie* acceptability ratings between Taiwan and China participants are not identical when looking at the ratings for each of the nouns (see Table 6.6a): even at this noun-by-noun level, however, the similarities in ratings are notable. Only four of the thirteen diverge by more than 10% ("thing/stuff," "juice," "popsicle" and "animals"), and none of these are different by over 20%.

When looking at the *xie* acceptability ratings with count nouns and mass nouns (see Table 6.5), one notes that the mass nouns as a class are higher by a little over 6%--which may not be very significant at all. The use of *xie* with both count and mass nouns seems to get similar ratings among the Taiwan and China participants; Form A and Form B are similar in their results with count nouns, but with mass nouns the Form A rating is over 12% higher (remember that Form A registers a much higher *xie* acceptability rating for the nouns taken as a whole)--another instance of the “ordering effect.”

Which nouns received low *xie* acceptability ratings (see Table 6.6a)? It looks as though there are three major “offenders.” “Juice,” “animal” and “jewel” are all in the vicinity of 70%--quite a bit lower than I had been expecting. Of these, two are ones that I have classified as [+count]. Why are these so much lower than the others? It is possible that there are pragmatic reasons--perhaps the sentential contexts are not natural. If this is the case, then “appropriateness” will definitely be affected. It could also be that certain types of objects are not amenable to being placed in groups of indeterminate quantities. For example, it may be that for some superordinates, the members of their sets are sufficiently heterogeneous that using indeterminate measures like *xie* with them is not ideal (though this does not explain why the superordinates “food,” “vegetables” and “thing/stuff” are well-formed with *xie*). As for “juice”--a [-count] noun--I am not sure why *xie* is not as compatible with it as it is with most mass nouns. Noun selectivity and pragmatic issues will be raised again later in this chapter.

The fact that *xie* is not equally compatible with all nouns means that it will be all the more important to look at the percentage differences between *xie* and *dian* acceptability ratings for each of the nouns. Put another way, if my “universal acceptability of *xie*” hypothesis had been correct, then it would have been sufficient to look at *dian* acceptability ratings in order to get some insights into *xie/dian* use as a possible diagnostic; since the above is not the case, the percentage difference between the two ratings is the only way to really see if it is the use of *dian* that is being judged, or simply the use of any partitive measure word.

A quick glance at the data is enough to see that the acceptability rating of *dian* with the nouns taken together (see Table 6.5) is substantially lower than the *xie* rating--25% lower, to be exact. Even Form B, with its “anti-*xie*” bias, has a *dian* rating that is over 16% lower than the *xie* rating; Form A, with its “pro-*xie*” bias, obviously has a much larger gap (over 33%). The Taiwan and China participants have *dian* ratings that are over 20% lower than *xie* ratings, with China participants having a slightly higher *dian* rating (5% more) than Taiwan participants do.

More significant than the above is looking at the acceptability ratings of *dian* with count nouns as opposed to mass nouns--after all, my second hypothesis (with regard to the appropriateness judgment task) is that *dian* will be incompatible with [+count] nouns.

For the participants taken as a whole, the *dian* rating with the six count nouns is just under 40%, while the *dian* rating with the seven mass nouns is nearly 83%. In

fact, for all groups--Form A versus Form B, and Taiwan versus China--the difference between *dian* ratings for count and mass nouns hovers around 40%: this means that (the nouns that I am claiming are) count nouns are 40% less acceptable with *dian* than (the nouns that I am claiming are) mass nouns.

The parentheticals above are not inconsequential; it is necessary to look at the *dian* acceptability ratings for each of the nouns individually. After all, I may be terribly off in certain of my predictions regarding the mass/count status of the various nouns (see Tables 5.4 and 5.6). When looking at each of the nouns individually for the participants as a whole (Table 6.6b), it is clear that none of the (predicted) count nouns have a *dian* acceptability rating of 0%, though “animal” is pretty close, at 8%. Apparently, none of the allegedly count nouns are crashingly bad--though relative to the mass nouns, some differences are apparent.

Below is a revision of Table 5.6. It contains predictions according to mass/count, predictions according to size, and the actual ranking of the nouns in this study:

Table 7.1
Predictions According to Mass/Count and Size,
and Actual *Dian* Acceptability Ranking

If compatibility with <i>dian</i> is contingent on mass/count (least-to-most)	If compatibility with <i>dian</i> is contingent on size factors (least-to-most)	The actual ranking of <i>dian</i> with the various nouns (least-to-most, rounded)
<ul style="list-style-type: none"> • “cup,” “furniture” and “animal” • “apple” (whole) and “popsicle” • “jewel” <p style="text-align: center;">G R E A T D I V I D E</p> <ul style="list-style-type: none"> • “firewood” and “popcorn” • “apple” (sliced) and “vegetable” • “juice,” “food” and “thing/stuff” 	<ul style="list-style-type: none"> • “animal” and “furniture” • “thing/stuff” and “firewood” • “food,” “vegetable,” “cup,” “popsicle,” “apple” (whole) and “juice” (a portion) • “apple” (sliced), “jewel” and “popcorn” 	<ul style="list-style-type: none"> • “animal” (8%) • “cup” (19%) • “furniture” (36%) • “jewel” (52%) and “popsicle” (53%) • firewood (59%) • “apple” (whole) (68%) • “juice” (74%) • “apple” (sliced) (81%) and “popcorn” (85%) • “food” and “vegetable” (92%) • “thing/stuff” (98%)

The *dian* acceptability ratings for certain of the nouns are consistent with both predictions: “popcorn,” “food” and “vegetable” are very consistent with both, and “animal,” “furniture,” “juice” and “apple” (sliced) are somewhat so. For these nouns, there is no “clash” between the two predictions, because they are examples of either small, [-count] nouns or large, [+count] nouns. The interesting cases, however, regard those nouns in which the predictions contradict one another: that is, in those cases in which the nouns are either large (or at least not prototypically small), [-count] or small, [+count].

One can see that the *dian* acceptability ratings for certain of the nouns at the extreme ends of the continuum are fairly consistent with the predictions according

to mass/count status, and not consistent with the predictions according to size. For example, “cup” is very much incompatible with *dian*--if size is a more important factor than mass/count, then “cup” should not be as incompatible with *dian* as it is. At the “compatible” end of the spectrum, “thing/stuff” is much more compatible with *dian* than we might predict if size were the most important factor. As for nouns that are not as prototypically [-count] or [+count], it seems that “jewel” is more consistent with the predictions according to mass/count status, and probably “popsicle” as well. Note too that according to the size factor prediction, *dian* compatibility for “jewel” and “popcorn” should be nearly identical, but the data show that there is a gap, with “jewel” being less compatible with *dian*. As for “popsicle,” its proximity to “jewel” away from the “compatible” end of the spectrum is more in step with the mass/count predictions. What all of this means is that for the six nouns which have contradictory predictions made of them, four of them seem to be more consistent with the mass/count prediction.

However, that leaves two nouns to be accounted for: “apple” (whole) and “firewood.” The *dian* acceptability ranking shows that participants rank “apple” (whole) as more compatible with *dian* than rank “firewood” as such--this is actually more consistent with the size factor prediction than with the mass/count status prediction. Furthermore, whereas the mass/count prediction is that the gap between “apple” (whole) and “apple” (sliced) will be very substantial, the data suggest that the gap is actually quite a bit smaller--not inconsistent with the slighter gap predicted by the size factor.

The problem with using the above *dian* acceptability analysis is that the *xie* acceptability ratings are not identical for all nouns: whereas I had hypothesized that *xie* would be equally compatible with all nouns, that has turned out to be false (see Table 6.6a). For this reason it is just as important, if not more important, to look at the percentage difference between *xie* and *dian* acceptability ratings for each of the nouns. Most of these values are positive--that is, for most of the nouns, the *xie* acceptability rating is higher than (or equal to) the *dian* one. For only two of the nouns is this not true, and even then the gap is so slight ("thing/stuff": -2%; "juice:" -1%) that for all practical purposes, we could just as well conclude that the *xie* and *dian* acceptability ratings for those two nouns are identical.

Again, I will use a table much like 7.1 above, but with the nouns ranked according to the percentage difference between *xie* and *dian*, rather than the absolute *dian* value:

Table 7.2
Predictions According to Mass/Count and Size,
and Actual *Xie/Dian* Percentage Differences

If percentage gap is contingent on mass/count (most-to-least)	If percentage gap is contingent on size factors (most-to-least)	The percentage gap with the various nouns (most-to-least, rounded)
<ul style="list-style-type: none"> • “cup,” “furniture” and “animal” • “apple” (whole) and “popsicle” • “jewel” <p style="text-align: center;">G R E A T D I V I D E</p> <ul style="list-style-type: none"> • “firewood” and “popcorn” • “apple” (sliced) and “vegetable” • “juice,” “food” and “thing/stuff” 	<ul style="list-style-type: none"> • “animal” and “furniture” • “thing/stuff” and “firewood” • “food,” “vegetable,” “cup,” “popsicle,” “apple” (whole) and “juice” (a portion) • “apple” (sliced), “jewel” and “popcorn” 	<ul style="list-style-type: none"> • “cup” (74%) • “animal” (59%) and “furniture” (56%) • “popsicle” (39%) and “firewood” (35%) • “apple” (whole) (26%) • “jewel” (16%) and “apple” (slice) (14%) • “vegetable” (6%) and “food” (5%) • “popcorn” (0%), “juice” (-1%) and “thing/stuff” (-2%)

Actually, the rankings for most of the nouns does not change substantially when percentage gap is used in the place of *dian* acceptability. Some slight changes are the rankings of “juice” and “popcorn,” which are now much closer to the “compatible” end of the continuum: for “juice,” this constitutes a possible strengthening of the argument that *xie/dian* compatibility is an indicator of mass/count status; for “popcorn,” this appears to be more consistent with the size factor prediction, though it could also very well be that I was erroneous in not predicting “popcorn” to be closer to the mass end of the continuum. The prototypically [+count] nouns show a slight change in order, as well--according to the percentage gap ranking, “cup” shows the most disparity of all. This change

results from the fact that “animal” is not nearly as compatible with *xie* as I had thought it would be.

The most striking difference between the rankings is the placement of “jewel:” because “jewel” has a much lower *xie* acceptability ranking than I had predicted, in the new ranking it comes across as not very compatible with partitive measure words, rather than being incompatible with *dian* in particular. As such, the percentage difference-based ranking of “jewel” is not consistent with either of the predictions.

The above analyses--first in terms of *dian* acceptability ratings, and then in terms of the percentage gap between *xie* and *dian*--constitute an oversimplification of a sort, due to the fact that I have not at all touched upon the rankings according to the different forms used, or to the different nationalities of the participants (though this information is available in Tables 6.6b and 6.6c). For example, in the *dian* acceptability rate data, Form B participants consistently give higher *dian* rates than do Form A participants--for four of the nouns (“juice,” “firewood,” “jewel” and “apple” (whole)), the Form B participants average about 15% higher. For nationality, the rates are much closer, overall--reinforcing the fact that “ordering effects” are more noticeable across nationality differences. However, there is a 30% gap between the two nationalities in their rating of “furniture”--a gap that is greater than any of the gaps that appear for the Form A and Form B data.

As for the percentage difference rates, the Form A and Form B participants differ for eleven of the thirteen nouns. Only “food” and “vegetable” have a similar

gap. One of the eleven, “juice,” shows a gap of over 40%. As for nationality, six of the thirteen nouns show fairly different percentage difference rates. The most blatant of these is, again, “furniture.” It could well be that a noun-by-noun analysis of *dian* acceptability would point to interesting differences across nationality; still, it appears that the “ordering effect” is more powerful yet, at least in this study.

I would like to comment briefly on the small number of instances in which participants preferred *dian* over *xie* for given nouns--that is, the cases where the *xie/dian* percentage differences are negative. I am only looking at the ones where the gap was larger than -5%, as a value less than this is more likely to be a fluke. There are no instances of this in Form A (with its pro-*xie* bias), whereas Form B has three such nouns: “thing/stuff,” “popcorn” and “juice.” The first two are barely under -7%, while the gap for “juice” was over -22%. Along nationality, there are no instances among Taiwan participants (save the slight gap of under -4% for “popcorn”), while the data from the China participants show two instances: “thing/stuff” and “juice,” at over -12% and -18%, respectively. What could such percentage gaps actually mean?

Professor Dieterich (my thesis advisor, in a suggestion to me) has put forth the possibility that there might be a “blocking” phenomenon going on here. That is, for certain prototypically mass nouns (i.e. “thing/stuff” and “juice,” and possibly “popcorn”), it may be that even though *xie* is technically possible, the fact that *dian*--the measure word proposed to be exclusive to mass nouns--is available might result in a blocking of the use of *xie*. It is not the case that *xie* is incorrect per se,

but rather that it does not specify the sense of “unindividuatedness” that is likely to be strong in prototypically mass nouns. Another way of saying this is that *xie* is semantically well-formed with mass nouns, but that pragmatically *dian* is a more exact fit.

The last data that I want to look at are those tied to the consistency ratings (see Tables 6.7a and 6.7b)—that is, whether the kinds of corrections that participants made in the stories are consistent with the acceptability ratings they gave in the appropriateness judgment task. For Form A, the consistency ratings are mostly at or above 80%, and the average consistency rate for all six noun phrases is nearly 87%. Two of the noun phrases are below 80%: “...*dian jia-ju*” (68%) and “...*xie guo-zhi*” (77%). The consistency ratings for Form B are lower, though it bears repeating that nearly half of the participants in Form B did not make any corrections to measure words--as a result, the pool of participants is considerably smaller, and so the data are not as reliable. In Form B, only one of the noun phrases is below 70% (“...*dian bing-bang*,” 58%), and the average consistency rate for all six noun phrases is a little over 74%. Across both forms, the Taiwan participants demonstrated overall higher consistency ratings than the China participants, but the data included for China participants, especially in Form B, are so low that these ratings are not terribly reliable. In any case, I believe that consistency between corrections on the short story and judgments on the appropriateness task is sufficiently high, and that individual participants are not responding to *xie/dian* usage in a haphazard manner.

7.2 Conclusions

Given the complexity of the analyses given above, what kinds of conclusions can be drawn from this study? The conclusion that I had hoped for was a validation of Wierzbicka's (1985) notion of the formalization of the mass/count distinction as being based on semantic criteria. That is, the propensity of nouns to take either mass or count morphology, or to appear in either mass or count distribution, is overwhelmingly consistent with the tendency of speakers of the language to conceptualize said nouns as being mass (unindividuated) or count (bounded). What I have actually found is not nearly so impressive as this, though I do not believe that all hope for my hypothesis is lost.

After all, I did find that participants would, without prompting from me, correct measure word errors. If I had just given the appropriateness judgment task without the short story correction task, I could not be sure if participants were being forced to make choices, as it were. At the very least, by including the correction task and finding the results that I did, I was able to validate my hypothesis that *dian* is not used indiscriminately, at least relative to *xie*.

I also found that quite a few of the nouns--especially those that I had hypothesized to be more-prototypical examples of mass and count nouns--had *dian* acceptability ratings, and percentage difference ratings, that were consistent with my predictions. However, what prevents me from being able to make stronger

claims about *dian* acceptability being correlated with mass/count status is that many of the prototypical mass nouns are small, while many of the count nouns are large. That is, for many of these nouns, I was unable to rule out the possibility that size factors are contributing to *dian* acceptability ratings. In fact, it may be the case that this complicating size factor is going to be extremely difficult to overcome. In other words, the fact that the two predictions--mass/count-based and size-based--make similar predictions for at least half of the nouns in the instrument is itself no accident. I believe that there may be at least a partial association between small and mass on the one hand, and large and count on the other. The smaller that something becomes, the less perceptually salient it is; when there is an aggregate of smaller-and-smaller things, these things are less likely to be perceived as individually salient. Where does the "border" lie between, on the one hand, small things that are salient and hence individuated, and on the other, small things that are not salient and hence unindividuated? I cannot say, though I suspect, as does Wierzbicka (1985), that it varies from culture to culture, language to language. In all likelihood, if it turns out that *xie/dian* is indeed a reliable diagnostic for distinguishing mass and count nouns, I would expect to find some surprises as regards classifier use--and especially with respect to the class of small, particle-like things. In Chinese, many very-small objects can be individuated, and hence counted: these nouns can take the classifiers *ke* or *li*. However, ability to be counted does not mean that said nouns are prototypically [+count]. In fact, I suspect that the class of small particle-nouns are very much compatible with *dian*,

and that the reason for this is that the individual particles are not sufficiently perceptually individuated so as to reject use with *dian*. Hence, the correlation between nouns that take classifiers and nouns that are [+count] may in fact not be nearly as reliable as I had once thought: all count nouns will have classifiers, but not all nouns that can take classifiers are necessarily [+count] (especially small, particle-like nouns). This is, of course, assuming that the use of *dian* with nouns can reveal something of a mass/count distinction--a finding that has not been unambiguously substantiated in this study.

To really get at the issue of what *xie/dian* distribution shows, it is all the more clear to me that the focus needs to be on nouns that are either large, [-count] or small, [+count]--that is, in instances where the size factor contradicts the mass/count status. In this study, I believe that “cup” is such a noun, and that its incompatibility with *dian* is an indication that factors other than size are at work. In addition, I believe that the finding for “popsicle” is promising as well: the nearly 40% percentage difference between *xie/dian* acceptability ratings, and the fact that a little over 40% of Form B participants corrected it in the short story, suggests that it too is nearer the hypothesized count end of the continuum than other--even larger--nouns. The finding for “thing/stuff” may not be as impressive as that for “cup,” considering how indeterminate the term is--it is hard to say. As for “jewel” and “firewood,” I may simply be completely askew in my classifications. Perhaps “firewood” is in fact a count noun; perhaps “jewel” is more mass than count, and more like “jewelry” than I had thought. The findings for “apple” (whole) and

“apple” (sliced), however, are probably the least compatible with my *xie/dian* hypothesis. It may be that food items, by virtue of the fact that they are manipulated in a variety of ways, are less likely to rank high in countability.

Also, the application of mass/count to superordinates and basic-level nouns is not all that clear to me. Both “apple” (whole) and “apple” (sliced) have lower *dian* acceptability ratings than the superordinate “vegetable,” but there are not enough such comparable superordinate/basic-level stimuli in the present survey.

Given the data I have to work with, I would have to conclude that the usefulness of *xie/dian* as a diagnostic for pointing to a morphosyntactically realized mass/count distinction in Chinese is problematic. I see some contradictory findings here, some of which suggest that mass/count status is key in predicting *xie/dian* usage differences, but others which reveal that mass/count may not be quite so central after all. It is, as it were, a mixed bag that I find myself left with.

As an aside, I would like to point to a different morpheme which I have completely overlooked in all of this *xie/dian* investigating of mine. When I was beginning to administer my survey to participants, it occurred to me that “cup,” which was receiving very low *dian* acceptability ratings, has the noun suffix *zi* (the character *zi* literally means “male child”). Granted, not all (potentially) count nouns in Chinese have the *zi* suffix--not by a long shot--but as I thought over a list of nouns ending with *zi*, it occurred to me that they tended to sound awful with *dian*. A phonological explanation seems highly unlikely; rather, I believe that *zi* may be a suffix that can only be joined to count nouns. I am not suggesting that all

nouns which refer to individuated, “non-sliceable” things take the *zi* suffix. Instead, I am simply offering up the possibility that Chinese may have a suffix which denotes [+count]. In fact, it may not be only the *zi* suffix that demonstrates this tendency: other noun suffixes which are not represented in my noun stimuli that may have this characteristic are *tou* (literally “head”) and *er* (literally “child”), with the latter being much more frequent and productive as a noun suffix than the former, especially in Beijing Mandarin. Another noun suffix to look into would be *ju*, as in *jia-ju* (“furniture”), which seems to be used with superordinates that, I would posit, comprise count nouns. This is different from the noun suffix *wu*, which seems to be lacking a mass/count meaning preference (e.g. *dong-wu* (“animal”) is probably [+count], but *shi-wu* (“food”) is likely [-count]). These are all very tentative speculations, to be sure.

7.3 Limitations

I would like to frame my discussion of the limitations of this study in terms of the following three general areas: survey design and instructions, participant characteristics, and noun stimuli selection.

For the first of these, survey design and instructions, there are a number of points that need to be made. First of all, it is a written survey, even though I am trying to use the instrument to gauge general usage issues. There is a very real issue of whether participants respond in a manner consistent with how they use the

language in daily interactions. I tried to always tell participants to make corrections and judgments consistent with how they use the language in their speech; furthermore, I tried to write both the short story and the appropriateness judgment task in a mostly colloquial style, eschewing the formal style that is characteristic of much written Chinese. This does not guarantee, however, that participants did in fact answer in the way that I had hoped they would.

Secondly, the criteria that participants were asked to use in the short story and on the judgment task were not identical. In the short story, they were asked to correct “grammatical” errors--though given a good deal of the corrections I was seeing, I wonder if that is in fact what they were doing! What I mean by this is that a great deal of the “grammatical” corrections looked like stylistic corrections to me. Then again, perhaps this perception on my part is itself problematic: I am presuming that grammatical and stylistic errors are mutually exclusive. This may not be true, especially in written discourse. To get back to the issue of directions, the short story asked for “grammatical” corrections, while the judgment task asked for “appropriateness” judgments. But in fact, are these at all comparable? I made a decision to ask for grammatical-based corrections on the short story, partly in order to avoid the kinds of stylistic-based corrections that I did in fact end up seeing anyway. My rationale for asking participants to make “appropriateness” judgments on the follow-up task was to avoid prescriptivism on one hand, and an “anything goes” attitude on the other. By “prescriptivist,” I mean the tendency to find that none of the usages sound “OK”--which a very few of the participants seemed to

manifest. On the other hand, being too lackadaisical in judgments is not advantageous, either. I noticed that at least a few of the participants, for whatever reason, seemed to speed through the task, and this may affect their judgments. Many of us believe that native speakers are in the best position to indicate what are the acceptable, and unacceptable, constructions in their language. However, giving rarified grammaticality judgments is perhaps an ability that comes with honing and practice; then again, others may question how valuable such judgments really are. In using the term “appropriateness,” I believe that I was trying to capture the fact that I was not expecting the participants in my study to be practitioners of the syntactician’s art--and yet I still wanted to be able to claim that native speakers can at least indicate whether or not something “sounds right.” Of course, what “sounding right” or “not sounding right” mean are very much debatable matters: it could reflect syntactic, semantic or pragmatic usages--or a combination of these. It may be that what I am gauging in my survey is not immediately reducible to any single level of grammatical analysis.

The final limitation related to survey design has to do with the analysis component: this study contains no statistical analysis at all. As a result, I am prevented from generalizing to Chinese speakers as a whole, much less to speakers from Taiwan or China. Furthermore, in the absence of statistical analyses, I am somewhat blind to what exactly constitutes significant differences in *xie/dian* acceptability ratings. A small percentage difference between the ratings for two nouns may in fact be a real difference; a seemingly large percentage difference may

in fact be a statistical accident. As such, I am forced to rely on raw percentages, which are, by their nature, not as powerful in the absence of certain statistical tests.

As for the characteristics of the participants, one trait in particular made itself apparent to me in a very short time--namely, scarcity! I was not able to find the number of participants that I had originally wanted. This is not necessarily due to lack of numbers, *per se*, but rather to the fact that people are busy. I cannot recall the number of people whom I contacted that told me they could do the survey if I could get it to them somehow (via mail, fax or computer). Apparently, the decision to administer it in person was one that reduced the size of the pool of participants that I could draw from. I wanted to administer it in person largely because of the inclusion of the short story task--that is, I feared that having both the short story and the judgment task would contaminate the findings, insofar as participants would be cued that I was interested in looking at *xie/dian* distribution. Still, I could have made a decision to reach as many people as possible on an in-person basis with both tasks, and given the judgment task to anyone who could not do it in-person. However, I fear that doing so might have resulted in them consulting others, which I did not want to happen--perhaps this is not a reasonable fear. In any case, the way that I chose to administer the instrument means that I could not reach as many people.

Related to this availability of participants issue is one that has been pointed out already earlier in this chapter--namely, the differing characteristics of the

Taiwan participants and the China participants. I was not in any position to turn any participants away, and as a result, the populations are not very comparable.

As for other characteristics of participants, it bears noting that all of them have been in the U.S. for some time, and that all of them have studied English as well. I cannot currently say with certainty whether or not the results would be different if the data gathering had occurred in a Chinese environment (such as Taiwan or China). As for language learning, I believe that it would be difficult indeed to find participants who have not studied another language extensively. In any case, I believe it to be highly unlikely that the study of English would have much impact on *xie/dian* usage.

Also, as has been noted, only one of the participants “admitted” to being a non-native speaker of Mandarin--even though he has just as much right to claim the language as “his own” as most of the other participants. What constitutes a “native speaker” of a language? I suspect that it has quite a bit to do with identity issues, and, for whatever reason, the stand-out participant chose to see himself as not having that particular identity.

The final area I wish to discuss is that of the noun stimuli used--it may well be that I was not careful enough in choosing certain of the stimuli. For example, using “jewel” and “animal” may in fact be problematic, as higher-than-expected incompatibility with *xie* suggests. It may be that using these particular nouns struck participants as pragmatically odd, for whatever reason. Or, perhaps it was not the use of the nouns with *xie/dian* so much as the sentence in which they were placed.

If the sentences are not “natural” sounding, then appropriateness judgments are very likely to be affected. It could well be that in my desire to keep the sentences mostly equal, I was in fact erring on the side of artificiality. What I could have done instead is to make all the sentences different from one another--though identical across *xie* and *dian*, of course. In so doing, I would need to give a lot more thought to the (strictly-speaking) non-syntactic components of sentences--which could well turn out to yield more authentic sounding constructions.

7.4 Suggestions for Further Research

Given both the ambiguity and the contradictory findings that arose in this study, I believe that further research is exactly what is called for; furthermore, there are at least a few suggestions that I have to offer. Of course, many of the limitations of the study that are discussed in the preceding section can, and probably should, be built into any future research projects: an oral as well as a written component; a higher level of consistency in the directions given; a statistical component in the analysis; an acceptable level of comparability of any sub-groups (such as Taiwan or China). In addition to these, a corpus study (based on both transcripts of dialogue and on written materials) would be most welcome. My study looked at how participants perceive certain usages; a corpus study would get at the issue of how *xie* and *dian* are actually used. After all, it is quite possible

that respondents might give grammaticality judgments which are not entirely consistent with the way that they actually use the words.

As for suggestions that are relevant to the content at hand, I posit that my approach in this study--one of assigning a count/mass preferability to the nouns a priori--may have been a bit heavy-handed. My comments in the conclusion section regarding the ambiguity of the mass/count status of “firewood” and “jewel” suggest that in order to truly find out if *xie/dian* distribution signifies what I think it might, there needs to be an added dimension to this study. Namely, instead of determining for myself which nouns in a given list of stimuli are “large” or “small,” “mass” or “count,” I need to do a preliminary survey, wherein subjects are asked to categorize a list of nouns according to size, and then (with different subjects, perhaps) the same nouns classified according to individuatedness and “slicability.” This would be a difficult quality to solicit from participants: perhaps it could be done by asking such things as “If you take noun “X” and divide it into lots of pieces, what do you have? Do you still have noun “X”? If not, what do you have instead?”

The survey--both the hypothetical preliminary study, and the *xie/dian* judgment task used in this study, should include a number of comparable superordinates and basic-level terms, and from an array of different semantic domains. For example, there could be an “organic” domain, replete with flora and fauna, and foods of various types; there could also be an “artifact” domain, which could include various technological items, both simple and complex. The key to all

of this, of course, would lie in finding and comparing those nouns whose size and mass/count status are such that the predictions of *xie/dian* compatibility made for them are contradictory.

I would also like to see the inclusion of as many *zi* affixed nouns (or other affixes, as appropriate) as possible--the smaller the referent of the noun, the better! For example, the Chinese for “atom” is *yuan-zi*: if it turns out that *yuan-zi* is in fact not compatible with *dian* (relative to *xie*, that is) then it would suggest that conceptual, rather than perceptual, saliency is key in maintaining a mass/count distinction. This would have implications for the “small, particle-like nouns” that I discussed earlier--namely, that although they are potentially (capable of being perceptually) salient, they are nonetheless prototypically (conceptually) not salient. All of this is only speculation, of course, but it is speculation that can be investigated in research contexts.

Furthermore, I think that it would be interesting to see what semantic differences, if any, there may be between *xie* and *dian* noun phrases. That is to say, if a given noun is compatible with both *xie* and *dian*--which would mean mass nouns, if my hypothesis turns out to be more accurate than I have found it to be in this particular study--then it might be worthwhile to find out if the use of *xie* and *dian* highlight different aspects of the noun. Or, seen from a different angle, perhaps the use of *xie* or *dian* is instrumental in creating a slightly different sense, rather than highlighting a sense that is inherent in the noun itself. This is

reminiscent of the idea that form has something to contribute in the way of creating meaning.

Finally, I believe that it would be worthwhile to include abstract nouns as well. Superordinates, of course, are abstract relative to basic-level terms, and are a good place to start. However, one could branch out into relatively intangible concepts--in so doing, one could possibly shake off the size factor “contaminant.” It would be interesting to see whether or not nouns which refer to relatively intangible referents/ideas are in fact compatible with *xie* and *dian* at all.

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Appendices

Appendix A:
Personal Information Questionnaire

Personal Information Questionnaire

Please answer the following questions, in either English or Chinese. Do not write your name anywhere on this form. Your answers will help me in interpreting your replies on the tasks that follow this.

(1) Age _____
(年齡)

(2) Gender _____
(性別)

(3) Level of Education _____
(學歷)

(4) Place of Origin _____
(籍貫：國、省／市、縣)

(5) Is Mandarin Chinese your native language,
or your second language?
(普通話／國語是你的母語，
還是你的第二個語言?)

☒ native language (母語) ☐ second language (第二個)

(6) If you answered "second language" above, about how old were you when you started learning or using it? _____

(如果你回答『第二個語言』，
你大概幾歲開始學習／實用?)

Appendix B:
Short Story Correction Task (“My Friend”)

Directions for “My Friend”

Read the following passage. Circle any **grammatical** (語法/文法) errors you find. In addition, if you know how to correct the errors so as to make them well-formed, please do so (if you add or change anything, mark these underneath the incorrect elements that you have circled).

“My Friend” (Translation)

Note: There are two different forms of this: “Form A” and “Form B.” The two forms differ only in their distribution of *xie* and *dian*. The places where I use *xie* or *dian* in the original are in italics here; the nouns that *xie* and *dian* are quantifying are in boldface.

I went to visit my friend yesterday. Even though his house is fairly spartan, he likes to have company over. He treated me to *some* **things/stuff** to eat and drink. First, he opened the refrigerator, and took out and poured the rest of the (*“that little bit of”*) **juice** for us to drink. After we finished, he washed the (*“those few”*) **glasses**, and then we went to the living room. He felt that the room was very stuffy, so he opened a window to let in *some* fresh **air**. While we were watching TV, he suddenly went to the kitchen to make *some* **popcorn**, and to get *some* **popcicles**. After he brought those things in and sat down, he told me that *some* of the **furniture** in his house was bought at a second-hand store. He also told me that *some* of the **textbooks** he had were given to him for free! When we finished talking, I said goodbye to him and went home.

Form A

我的好朋友

昨天我找去我的好朋友。他家裡雖然很純樸，但是他人很好客！他請我吃、喝一些東西。他先打開了冰箱，把冰箱裡剩下的那些果汁倒來喝。我們把飲料喝完之後，他就把那點杯子洗一洗，然後我們到去客廳坐一坐。他因為覺得客廳相當悶，他所以打開了窗戶，讓一點新鮮的空氣跑進來。我們在看電視的時，他突然到廚房去弄一些爆米花吃來，又拿了一些冰棒。他拿東西回來坐的時候，他告訴我他房子裡的一點家具是在二手店買來的。他也說，他上課用的一點課本是別人送給他的！講完以後，我跟他就告別了，然後回家。

Form B

我的好朋友

昨天我找去我的好朋友。他家裡雖然很純樸，但是他人很好客！他請我吃、喝一點東西。他先打開了冰箱，把冰箱裡剩下的那點果汁倒來喝。我們把飲料喝完之後，他就把那些杯子洗一洗，然後我們到去客廳坐一坐。他因為覺得客廳相當悶，他所以打開了窗戶，讓一些新鮮的空氣跑進來。我們在看電視的時，他突然到廚房去弄一點爆米花吃來，又拿了一點冰棒。他拿東西回來坐的時候，他告訴我他房子裡的一些家具是在二手店買來的。他也說，他上課用的一些課本是別人送給他的！講完以後，我跟他就告別了，然後回家。

Appendix C:
Sentence Grammaticality Judgment Task

Directions for Sentence Grammaticality Judgments.

Read the following sentences, rating them according to the appropriateness of using *xie* (些) and *dian* (點). If you think the use of *xie* or *dian* in a given sentence is **appropriate** (適當), make a mark in the column labeled “OK”. If you think it is marginally or questionably appropriate, make a mark in the column labeled “?”. If you think it is not at all appropriate, make a mark in the column labeled “not OK”.

Appropriateness Judgment Task (Translation)

Note: There are two sets of sentences, each of which differ only with respect to the use of *xie* and *dian*. The “Form A” and “Form B” differ only with respect to the order that the sets are presented--they are otherwise identical.

- (1) I went to the store to buy “some” (*xie* or *dian*) things/stuff.
- (2) I went to the store to buy “some” (*xie* or *dian*) juice.
- (3) I went to the store to buy “some” (*xie* or *dian*) (drinking) glasses.
- (4) I went to the store to buy “some” (*xie* or *dian*) furniture.
- (5) I went to the store to buy “some” (*xie* or *dian*) firewood.
- (6) I went to the store to buy “some” (*xie* or *dian*) popcicles.
- (7) I went to the store to buy “some” (*xie* or *dian*) food.
- (8) I went to the store to buy “some” (*xie* or *dian*) jewelry.
- (9) I went to the store to buy “some” (*xie* or *dian*) popcorn.
- (10) I went to the story to buy “some” (*xie* or *dian*) vegetables.
- (11) I went to the zoo to see “some” (*xie* or *dian*) animals.
- (12) I found an apple tree, discovered that the apples were already ripe, and I picked “some” (*xie* or *dian*) to eat.
- (13) I peeled and cut up all of the apples, and took “some” (*xie* or *dian*) to my friends.

Form A

- ① 我到商店去買一點東西。
- ② 我到商店去買一點果汁。
- ③ 我到商店去買一點杯子。
- ④ 我到商店去買一點家具。
- ⑤ 我到商店去買一點木柴。
- ⑥ 我到商店去買一點冰棒。
- ⑦ 我到商店去買一點食物。
- ⑧ 我到商店去買一點珠寶。
- ⑨ 我到商店去買一點爆米花。
- ⑩ 我到商店去買一點蔬菜。
- ⑪ 我到動物園去看一點動物。
- ⑫ 我找到了一棵蘋果樹，
發現上面的蘋果已經熟了，
然後採了一點來吃。
- ⑬ 我把所有的蘋果都削皮、
切一切，然後拿了一點
給朋友們吃。

	OK	?	not OK
①			
②			
③			
④			
⑤			
⑥			
⑦			
⑧			
⑨			
⑩			
⑪			
⑫			
⑬			

① 我到商店去買一些東西。

② 我到商店去買一些果汁。

③ 我到商店去買一些杯子。

④ 我到商店去買一些家具。

⑤ 我到商店去買一些木柴。

⑥ 我到商店去買一些冰棒。

⑦ 我到商店去買一些食物。

⑧ 我到商店去買一些珠寶。

⑨ 我到商店去買一些爆米花。

⑩ 我到商店去買一些蔬菜。

⑪ 我到動物園去看一些動物。

⑫ 我找到了一棵蘋果樹，
發現上面的蘋果已經熟了，
然後採了一些來吃。

⑬ 我把所有的蘋果都削皮，
切一切，然後拿了一些
給朋友們吃。

	OK	?	not OK
①			
②			
③			
④			
⑤			
⑥			
⑦			
⑧			
⑨			
⑩			
⑪			
⑫			
⑬			

Form B

- ① 我到商店去買一些東西。
- ② 我到商店去買一些果汁。
- ③ 我到商店去買一些杯子。
- ④ 我到商店去買一些家具。
- ⑤ 我到商店去買一些木柴。
- ⑥ 我到商店去買一些冰棒。
- ⑦ 我到商店去買一些食物。
- ⑧ 我到商店去買一些珠寶。
- ⑨ 我到商店去買一些爆米花。
- ⑩ 我到商店去買一些蔬菜。
- ⑪ 我到動物園去看一些動物。
- ⑫ 我找到了一棵蘋果樹，
發現上面的蘋果已經熟了，
然後採了一些來吃。
- ⑬ 我把所有的蘋果都削皮，
切一切，然後拿了一些
給朋友們吃。

	OK	?	not OK
①			
②			
③			
④			
⑤			
⑥			
⑦			
⑧			
⑨			
⑩			
⑪			
⑫			
⑬			

- ① 我到商店去買一點東西。
- ② 我到商店去買一點果汁。
- ③ 我到商店去買一點杯子。
- ④ 我到商店去買一點家具。
- ⑤ 我到商店去買一點木柴。
- ⑥ 我到商店去買一點冰棒。
- ⑦ 我到商店去買一點食物。
- ⑧ 我到商店去買一點珠寶。
- ⑨ 我到商店去買一點爆米花。
- ⑩ 我到商店去買一點蔬菜。
- ⑪ 我到動物園去看一點動物。

⑫ 我找到了一棵蘋果樹，
發現上面的蘋果已經熟了，
然後採了一點來吃。

⑬ 我把所有的蘋果都削皮、
切一切，然後拿了一點
給朋友們吃。

	OK	?	not OK
①			
②			
③			
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