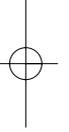
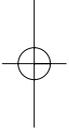




## Part I

# Noun Pluralization, or How to Talk About More Than Two Dogs in Kiowa





# Chapter 1

## Noun Pluralization: An Introduction

It is fundamental to using language that a person be able to talk about more than one of something, whether the somethings be mad cows, red onions, or bold ideas. In Part I of this book, we expand on the discussion of Armenian noun pluralization by exploring several ways in which **noun phrases** (or **NPs**) are pluralized in language. This will require that we examine the phonological and morphological components of mental grammar in some detail, and – to some extent – its syntax.

Let us begin by looking at the structure of NP plurality in the way introduced long ago by Chomsky (1957, pp. 29, 111). On this view, noun phrases come in two varieties: singular NPs and plural NPs, and it is at this phrasal level that the concepts ‘singular’ and ‘plural’ are semantically interpreted. In English, although the plural suffix generally shows up only on the noun – as it does in Armenian, it is the whole NP that is interpreted as plural. When we say, for example:

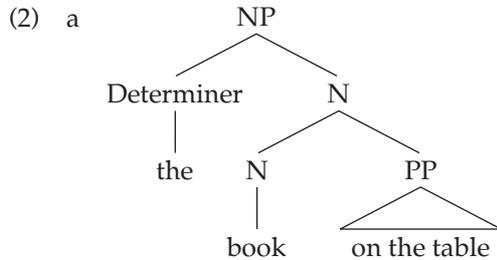
- (1) *I saw the books on the table.*

the entire NP, *the books on the table*, is understood as plural: we must be referring to a particular set of books on a particular table, and not to just any set of books regardless of its location.

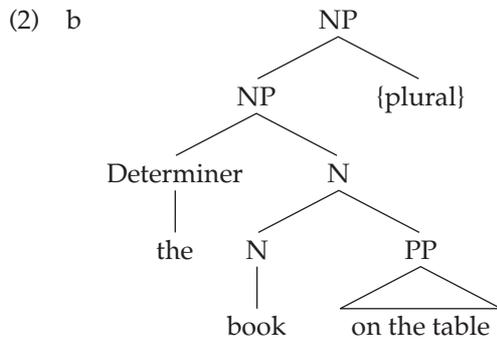
Although the concepts ‘singular’ and ‘plural’ are always represented in mental grammar, the **morphemes** {singular} and {plural} may or may not be overtly realized within an NP as a suffix or a prefix; that is, they may or may not be pronounced. Whenever the morpheme {singular} or {plural} is realized in speech, it has to find a “home” or “homes” – and often does so in the NP. In English, for example, the morpheme {singular} has **zero phonological form**, that is, there is no spoken form. But the morpheme {plural} generally does have phonological form in English. Looking back to sentence (1), we see that the morpheme {plural} finds a “home” on *book*, the head N of the plural NP.

14 Noun Pluralization

In structural terms, we represent this way of thinking about plural NPs by diagramming the plural NP in sentence 1 as follows:



A plural NP is then constructed by the merger of the NP of (2a) with {plural}, giving us the representation shown in (2b):



The diagram in (2b) represents the fact that the morpheme {plural} merges with the entire NP (2a) – and not just with the **head** N (*book*) of that NP, the head being the noun that the phrase is organized around. That is, {plural} affects the whole NP and is interpreted in our minds at this phrasal level. However, phonologically, {plural} finds its way home in English only to the head N of the NP, as the plural suffix /s/.

In these diagrams, **Determiner** is a general term for the words and groups of words that may quantify a noun with respect to singularity or plurality. This term includes the articles (*a, the, etc.*), possessors (*his, her, our, etc.*), and words like *some, many, several, these, those, etc.* (Determiners are discussed in further detail in Chapters 5 and 15. The branching structure of the diagrams is the topic of Chapter 8 Merge.)

In some languages, the morpheme {plural} finds multiple “homes” in an NP. For example, consider the following Spanish NPs:

- (3) a *el libro interesante*  
 the book interesting  
 ‘the interesting book’

- b *los libros interesantes*  
the books interesting  
'the interesting books'
- c *un libro interesante*  
a book interesting  
'an interesting book'
- d *unos libros interesantes*  
some books interesting  
'some interesting books'

Comparing (3a) and (3b), we see that {plural} makes itself at home on the determiner (*el* 'the' becoming *los*), on the N (*libro* 'book' becoming *libros*), and on the adjective modifying the N (*interesante* 'interesting' becoming *interesantes*). A parallel analysis can be made of (3c) and (3d). Thus, in Spanish, every word in a plural NP that can be pluralized is pluralized overtly.

English is much more restrictive than Spanish in this respect. The morpheme {plural} usually finds only one "home": on the head N of a plural NP, as in 1 above. To only a very limited extent does {plural} find more than one "home" in an NP, as the following contrasts reveal:

- (4) a *this interesting book*
- b *these interesting books*
- c *that interesting book*
- d *those interesting books*

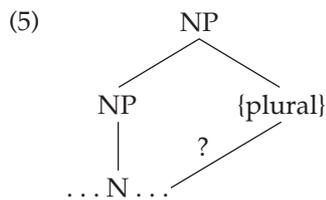
Given the plural NPs in (4), we see that in English the morpheme {plural} finds its way phonologically to the N (*book* becomes *books*) and to the demonstratives (*this* becomes *these*; *that* becomes *those*), but not to the adjective (*interesting*).

In some languages of the world, including some varieties of English, the morpheme {plural} has zero phonological form, that is, {plural} results in no observable pronunciation. A highway sign in Missouri provides an illustration: "Joplin, Seven Mile From Here" (Cassidy & Hall, 1996, p. 592). In this variety of English, {plural} can be "satisfied" in a different way: not by a plural suffix on the N, but by the presence of an inherently plural word in the NP, the cardinal number *seven*.

To summarize: All languages have plural NPs. The concept 'plural' is semantically interpreted at the NP level, as a result of the NP and the morpheme {plural} merging. However, the phonological form of the morpheme {plural} can be found on the head N of the NP, on the adjectives modifying the N, on the determiners, or on all of the above. Or on none of the above; that is, the morpheme {plural} does not have to be realized phonologically at all within the NP.

## Looking Ahead

Examining further the ways that {plural} manifests itself in a plural NP is the focus of Part I of this book. For any given language, the question we want to answer is this: What phonological effects, if any, does the morpheme {plural} have on the head N of the NP? We represent this question in the following stripped-down NP structure, in which an NP and the morpheme {plural} **merge** to form a higher NP:



The question mark at the end of the diagonal line in (5) that runs from {plural} to N asks us to consider whether the morpheme {plural} shows up as a prefix to the N, a suffix to the N, or not on the N at all but somewhere else in the structure of a sentence – to mention some of the questions that will be answered as we move through Part I. It is important to note at the outset of this investigation that we will find that there is only a narrow range of alternative ways of pluralizing NPs among languages of the world. Not everything is possible.

We continue our examination of plural NPs by next analyzing the phonology of English noun pluralization.

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### Problem Set 2: Plural Noun Formation in English

Suppose a linguist is doing research on the phonology of English plural nouns. By listening carefully to fluent English speakers' pronunciation of some plural nouns, she notices that the plural endings sound like the last sound in the word *buzz*. For example, say the following sentences aloud. Concentrate on the sound of the plural endings of the underlined words:

*There are bugs on this plant.*  
*The pears are rotten.*  
*There are two birds in the sky.*

Even though the plurals are not spelled this way, fluent English speakers pronounce these plural nouns as if they end with /z/. On the basis of these data, the linguist formulates the following hypothesis to explain how English plural nouns are formed in speech:

/z/ is suffixed to the singular form of a noun to make it plural.

- A Does this hypothesis explain how the plurals of the words below are pronounced? Why or why not? Explain why you answer as you do, giving specific examples from the data.

<i>pig</i>	<i>robot</i>	<i>judge</i>
<i>rock</i>	<i>lunch</i>	<i>cloud</i>
<i>shape</i>	<i>star</i>	<i>kiss</i>

Before you move on in the problem set, be sure to think through A and construct a reasoned answer.

- B The linguist investigates further. By listening to someone say the sentences shown below, she notices some differences in the way the plural suffixes of the underlined words sound. Say the sentences aloud. Concentrate on how the plural suffixes of the underlined words sound.

*All of the spoons and cups and dishes are on the table.*  
*There are goats and horses and cows on the farm.*

Some of the plural suffixes sound the same. Which of the underlined words have plural suffixes that sound the same?

Put the underlined words into groups according to the pronunciation of their plural suffixes, leaving off the suffixes. Then, using the linguistic convention of enclosing phonemes in slant marks (/ /), label the groups according to the sound of the plural suffixes.

- C Look again at the list of nouns from A, repeated below. Say the plurals of these words aloud, and then assign them to the groups that you made in B.

<i>pig</i>	<i>robot</i>	<i>judge</i>
<i>rock</i>	<i>lunch</i>	<i>cloud</i>
<i>shape</i>	<i>star</i>	<i>kiss</i>

- D Consider your answers to A, B, and C. Think about what your work shows about how English speakers form plural nouns in speech. Formulate a hypothesis that explains how speakers of English form plural nouns in speech.
- E Does your hypothesis explain the pronunciation of all the plural nouns of English? Why or why not? Demonstrate how your hypothesis does (or does not) explain the data, discussing specific examples.
- F Fluent speakers of English and people who know English quite well have no trouble forming the correct plurals of nouns like those in this problem set. Their knowledge of English enables them to produce, perceive, and comprehend the correct plural forms without hesitation.

Suppose we ask the following question: How do speakers of English do this? In other words, in what way do speakers of English internalize their knowledge of plural noun formation? A related question is: How does an infant/child growing up in an English-speaking family come to know how to form plural nouns in English?

Consider these four possibilities:<sup>1</sup>

*Hypothesis 1:*

Speakers of English memorize the plural form for every noun they come across.

<sup>1</sup> This part of the problem set is paraphrased from Halle and Clements (1983, p. 69).



## 18 Noun Pluralization

### *Hypothesis II:*

Speakers of English learn the plural forms on the basis of spelling. For example, they learn that nouns that end with the letter *b* are pluralized by suffixing /z/.

### *Hypothesis III:*

Speakers of English know that the final sound (not the letter) of the singular noun determines the pronunciation of the plural suffix.

### *Hypothesis IV:*

Speakers of English know that some feature or characteristic of the final sound of the singular noun determines the pronunciation of the plural suffix.

Why should Hypothesis I and Hypothesis II be eliminated from consideration?

- G Hypothesis III and Hypothesis IV are similar, but they differ in an important way. Why does Hypothesis IV present a more efficient way in which the mind might work?

Before you move on to Chapter 2, be sure to think through and construct reasoned, convincing answers to B through G.

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## Terms

noun phrase, NP  
morpheme  
zero phonological form  
merge  
head  
determiner

