Preface

These notes will eventually form a textbook on the morphosyntactic constructions of the world's languages. The textbook is directed towards advanced undergraduates and beginning graduate students studying syntax. At the University of New Mexico, I have taught this course as a one-semester course, following on an introductory undergraduate course in syntax where I present the same basic framework but apply it only to English until the last part of that course.

The textbook has two main goals, which should be thought of as a single goal. The goals are to introduce students to syntactic analysis, from a crosslinguistic perspective; and to provide a framework for grammatical description, particularly of underdescribed languages. These goals are united by the organization of the material in this textbook in terms of the function of morphosyntactic constructions and the illustration of the most common ways in which those functions are expressed across languages. It is my belief that students of a single language (such as English, Spanish, or another language) will best understand the grammatical structure of that language by placing it in the context of the range of variation of the world's languages. This is perhaps most important for a student planning to describe an undocumented or little-documented language. Fortunately, after fifty years of typological research, enough is known about much grammatical structure that an overview textbook such as this one is possible. By no means does this imply that we know everything about the grammatical constructions of the world's languages. Nor does this textbook capture everything that we have already learned about grammatical constructions. This would require a much larger, multivolume work. At the end of each chapter, there will be an Additional Readings section {not yet done} that will allow a student to explore the typological literature on the grammatical constructions described in the chapter (and there will be references to that literature in the body of the chapter).

When I teach this class, each student "adopts" a reference grammar of a language and uses it to describe where "their" language fits into the crosslinguistic patterns in the expression of the function of the constructions in the chapters. These descriptive assignments allow a student to see a richer and more detailed example of the type of grammatical phenomena surveyed in the textbook. By using a sample of languages from different genetic families and geographical areas, one can capture a good deal of crosslinguistic diversity in a single class, as well as bringing out constructions that are unusual or anomalous from a typological perspective, and/or are not discussed in this book. Looking carefully at a reference grammar also helps to prepare students to examine descriptions of languages they don't know, or to figure out how to write a language description themselves if they choose to do so. I encourage students to share their grammars and their descriptive assignments with other students in the class, so as to get a more direct experience of the grammatical structures of different languages. This teaching method is now more easily done with the online availability of digital versions of many unpublished dissertations and some open-source published reference grammars.

It is in fact quite a challenge to find the information in a reference grammar and to place it in the context of crosslinguistic patterns for the constructions in question. Every reference grammar is organized in a different way, and some topics are more thoroughly covered than others, for various reasons (and some are not covered at all). Moreover, the terminology that is used in grammars, and even the types of analyses of grammatical constructions that are found in the grammar, are highly variable and not infrequently ambiguous or confusing. Some of the reasons for this are discussed in chapter 1 of this book. There has been much improvement in language

description in the past half century. However, many languages have gone extinct, others are highly endangered or moribund, and the time and resources available for language documentation are very limited. For this reason, students and scholars interested in understanding a grammatical phenomenon in its crosslinguistic diversity, and uncovering what universal patterns there might be, will always have to interpret incomplete data collected at different times in the past that is presented in ways that are not always easy to decipher. Hence one useful analytical skill in teaching morphosyntax in this way is the ability to figure out as best as possible what is going on in a language you don't speak from whatever descriptive materials are available.

This textbook is also an introduction to syntactic analysis. The type of analysis found here does not involve a notational framework for analyzing the structure of sentences, such as is found in most introductory textbooks of syntactic analysis. This is because many linguists who adhere to functional-typological linguistic theory argue for a "framework-free" grammatical theory (Haspelmath 2010a), and many documentary linguists do not use notational frameworks in practice in their language descriptions. The basic reasons for using a framework-free grammatical theory are given in chapter 1, and discussed in greater detail in Croft (2001; see also Croft 2013a and references cited therein).

The absence of a notational framework does not entail the absence of analysis of morphosyntactic constructions, of course; this textbook contains many such analyses. I do not expect all functional-typological linguists, let alone linguists who follow other syntactic theories, to agree with all the syntactic analyses presented in this textbook. But the basic crosslinguistic facts and patterns presented here are likely to represent lasting empirical generalizations, and must be explained in some way, no matter what syntactic theory one follows. The content of this textbook should therefore be of value to all students of syntax.

DRAFT OF AUGUST 2015: some sections are fully written out and others are in the form of a detailed outline with examples. Other sections are not yet written at all. Please do not circulate this draft. Comments are very welcome.

Part One

Introduction

1. Grammatical Categories, Semantic Classes and Information Packaging

1.1. What is morphosyntax?

The term **morphosyntax** refers to the combination of morphology and syntax. **Syntax** is the analysis of the internal structure of utterances/sentences, more specifically, how words are put together. **Morphology** is the analysis of the internal structure of words, including prefixes, suffixes and other internal changes to words, that generally have a semantic significance (elusive as that semantic value sometimes is). Therefore, **morphosyntax** is the internal structure of utterances, both above the word level and below it.

Why combine morphology and syntax? Because grammatical **constructions** involve both. Consider the English Numeral Modification construction, illustrated in (1):

(1)   *English Numeral Modification*:

      one tree
      two tree-s
      three tree-s
      etc.

The Numeral Modification construction involves both syntax—the order of numeral and noun—and morphology—the form of the noun. A description or analysis of the Numeral Modification construction must include reference to both: the relative position of numeral and noun, and the inflection of the noun for number. Of course, some constructions in languages seem to involve "only syntax": order and grouping of words. Other constructions seem to involve involve "only morphology": the inflectional forms of words, for example. (Note that the term 'construction' in modern linguistics includes even single-word constructions, such as the English nouns plus their inflection for number.)

Nevertheless, the focus of this textbook is primarily on syntax, that is, how words are put together into utterances. There are several reasons for this. First, the approach that this textbook takes is how meaning or function is encoded into grammatical form, for reasons to be described below. For this reason, we will not discuss those aspects of morphology that have to do with the phonological form of morphemes, such as bound vs. free morphemes, morphophonological processes, and conjugational or declensional classes. Second, as noted above, affixes and other bound morphemes are often part of constructions made up of more than one word, and the meanings of bound morphemes are part of the meanings of those larger constructions. Third, bound morphemes almost always originate in free words that combined with other words into constructions. Those constructions were reduced by the process of **grammaticalization** (see §1.3). An example of grammaticalization in progess in English can be seen in the contracted forms of auxiliaries and negation: *will not > won't, I am > I'm,* etc. Thus, we will see the same sorts of meanings and semantic combinations in multiword constructions that we also find in stem+inflection combinations. In fact, it is sometimes difficult to draw the line between syntactic constructions and morphological constructions (of the stem+inflection type): language change, including grammaticalization, is gradual. Finally, much of the description of morphological meaning is typically covered in courses in semantics. While a case can be made that linguistics

curricula should be organized in terms of a full-year (or longer) sequence that provides a survey of morphology, syntax and semantics combined, I will proceed on the assumption that most linguistics curricula divide (morpho)syntax from semantics. On the other hand, an important proposal in this textbook is that (morpho)syntactic constructions perform a distinct but important function in communication, namely ***the packaging of information into utterances***. The information packaging function of syntactic constructions interacts with the semantic content of that information, so we will have many occasions to refer to the meanings encoded by word roots and inflections anyway.

This textbook proceeds from three basic assumptions about the analysis of morphosyntax. The first is that the proper unit for grammatical analysis is a (morphosyntactic) **construction**. The reason for a constructional approach will be discussed in §1.2. The second assumption is that one must always investigate a construction with respect to how its structure expresses its **meaning** or **function**. The first two assumptions are shared by **construction grammar** (Fillmore et al. 1988; Goldberg 1995, 2006; Croft 2001), and the second is characteristic of **functionalist** theories of grammatical structure (e.g. Givón 2001a,b). The third assumption is that one must always examine how the morphosyntactic expression of that meaning varies across languages. The third assumption, combined with the first two, is the hallmark of **linguistic typology**. In fact, much of the content of this book concerns the results of around half a century of research on crosslinguistic variation and universals of grammatical structure.

The relationship between grammatical, i.e. morphosyntactic form and the meaning expressed by that form is a very complex one. There is no simple one-to-one mapping between the structure of a meaning to be expressed and the morphosyntactic structure of an utterance. In order to build an approach to the form-function relationship in grammar, we will begin by looking at one symptom of this relationship, namely the description of syntactic categories across languages, and ultimately, within a single language.

1.2. Word class and constructional approaches to grammatical analysis

One of the basic problems in grammatical analysis, especially when applied across different languages, can be illustrated by the following statements, drawn from reference grammars of lesser-known languages:

(2)   a. 'Sidaama numerals are adjectives' (Kawachi 2007:135)
        b. 'Numerals [in Iñupiaq] are a subclass of nouns…numerals behave like nouns…Iñupiaq numerals are nouns' (Lanz 2010:106, 107, 108)
        c. 'adjectives [in Mamainde] are encoded as verbs' (Eberhard 2009:324)
        d. 'Acehnese has no class of adjectives' (Durie 1985:101)

The major word classes of English and other long-studied languages have been established in the Western grammatical tradition for a long time: noun, verb, adjective, adverb, etc., although many other word classes have also been proposed more recently by linguists. Unfortunately, when one reads grammatical descriptions of lesser-known and previously undocumented languages (and even of better-known languages), one finds that word class terms are used in conflicting and confusing ways, such as those found in (2a-d). These problems, which in turn confuse students using reference grammars in order to understand syntax across languages or to analyze particular constructions, are for the most part not due to unsatisfactory or inconsistent

application of syntactic analysis to these languages by the authors. They are basically due to problems of the traditional, **word class approach** to syntax (as opposed to a **constructional** approach), and how it applies to the diversity of human languages.

In the word class approach, the categories of the smaller units, ultimately the word classes, are inherent properties of words, and independent of the constructions in which words occur. This view is commonly expressed in introductory linguistics textbooks and introductory syntax textbooks:

> A fundamental fact about words in all human languages is that they can be grouped together into a relatively small number of classes, called syntactic categories (O'Grady, Dobrovolsky & Aronoff, *Contemporary linguistics: an introduction*, 3rd ed., p. 164)

> The ability to use any word in a sentence requires knowledge of its **lexical categories.** (Finegan, *Language: its structure and use*, 5th ed., p. 35)

> It goes without saying that sentences are made up of words, so before we get into the syntactic meat of this book, it's worth looking carefully at different kinds of words.
> What is most important to us here is the word's ***part of speech*** (also known as *syntactic category* or *word class*)…Parts of speech tell us how a word is going to function in the sentence. (Carnie, *Syntax: a generative introduction*, 3rd. ed., 44).

> Each word belongs to a word class, which determines its position [in a sentence]. (Fabb, *Sentence structure*, 2nd ed., p. 11)

In the word class approach to grammar, word classes are generally assumed to have certain other properties in addition to determining the structure of constructions. Word classes are mutually exclusive (it is possible for a word to belong to two word classes, but then it is usually treated as ambiguous). There is a small finite number of word classes in a languages, several of which are large classes and "open" classes (in open classes, new words are easily added). Finally, and most importantly, the word class determines the occurrence of a word in a **role** (also called 'function' or 'slot'; the term 'role' is from Fillmore and Kay 1993) in a construction, that is, what position in a syntactic structure a word can occur in. This is because of the basic assumption of the word class approach, that constructions are defined by the configuration of word classes that (ultimately) constitute the construction. For example, the English Noun Phrase construction is described as [Determiner Numeral Adjective Noun], that is, as a unit made of up to four words belonging to specific word classes, occurring in the order named.

1.2.1. Form classes and semantic classes

Yet, in language descriptions one often finds statements of the form 'Word class X is word class Y', such as the statement about Sidaama in (2a) and the last statement about Iñupiaq in (2b). These statements appear puzzling at first. Words are generally assumed have an inherent word class, and the classes are mutually exclusive. If so, what is meant by 'Word class X is word class Y'? These statements are to be interpreted in this way, for example for (2a): Sidaama numerals

and Sidaama adjectives function the same way in a sentence. But if they function the same way in a sentence, then what do the terms 'numeral' and 'adjective' mean in this context? They mean that the Sidaama translation equivalents of English words in the English Numeral class and the Sidaama translation equivalents of English words in the English Adjective class are members of single word class in Sidaama.

Hence the terms 'numeral' and 'adjective' are being used to refer to **semantic classes**—translation equivalents—in these quotations: numeral concepts and property concepts respectively. The same is true of the third statement about Iñupiaq in (2b), where 'noun' refers to object concepts (persons and things). It is also true of the statement about Mamainde in (2c): (2c) means that the Mamainde translation equivalent of English Adjectives do not form a distinct word class (specifically, they are not distinct from the word class to which the Mamainde translation equivalents of English Verbs belong).

If the terms 'numeral' and 'adjective' are being used semantically in these quotations, there are two terminological problems that give rise to confusion. The first is that the same term is being used for a syntactic category (a word class) and for a semantic category (a semantic class of words). In the case of 'adjective', there exists a distinct term for the semantic class, namely 'property (concept)', although it was not used in any of the descriptions in (2). The use of 'adjective' in these quotations is inappropriate, and a more appropriate term is available, namely 'property words'. In the case of 'numeral', we have a different kind of problem. Linguists use the term 'numeral' for both semantic class (any translation equivalent for '1', '2', '3', etc.) and a word class (e.g., the English word class which has *one, two, three…* as members).

Unfortunately both of these problems are pervasive in linguistic discussions of syntax. The solution to the first problem is simply to be careful and consistent in using semantic terms for semantic classes and grammatical terms for word classes. A solution to the second problem found in typological writings is to use the lower case form of the term for the semantic class ('numeral') and to use the capitalized form of the same term for a (language-specific) word class ('Numeral'). This convention has been proposed by a number of typologists, including Lazard (1975), Comrie (1976), Bybee (1985) and Croft (2001). We will follow this rule of thumb for naming (language-specific) word classes in this textbook, even when the terms for word class and semantic class are different (see §1.7).

There is also a logical problem with the statements of the form 'Word class X is word class Y'. If 'numeral' and 'adjective' both refer to semantic classes (numerals and property concepts respectively), then the statement in (2a) that 'numerals are adjectives', i.e. 'numeral concepts are property concepts', is nonsensical. Numeral concepts and property concepts are different types of concepts. A more careful statement is the second statement in (2b), 'numerals behave like nouns', or the statement in (2c), 'adjectives are encoded like verbs'. In these statements, 'noun' and 'verb' still are being used—inappropriately—to express semantic classes of words (object concept words and action concept words respectively). But the assertions more clearly state that words of two different semantic classes belong to a single word class.

1.2.2. Language-specific and crosslinguistic categories: the role of constructions

When we turn from semantic class to word class, however, a greater problem emerges. What is the appropriate name for the word class? One reason for the continued use of terms like 'adjective', 'noun' and 'verb' in these descriptions (rather than the semantic terms 'property', 'object' and 'action') is that the authors intend to use 'noun', 'verb' and 'adjective' as terms to

describe grammatically defined word classes in these other languages, not semantic classes (which can be defined solely by their meaning). As we observed above, in the word class approach it is assumed that word classes are crosslinguistically valid. But what reason is there to use the same names from English syntax to describe the syntax of Sidaama, Iñupiaq, Mamainde or Acehnese?

In order to answer this last question, we must look at how word classes are defined in English or any other language. In linguistic analysis, word classes are defined not by their semantics but by their **occurrence in constructions**. For example, English Adjectives such as *tall* are defined in terms of:

(i) their occurrence as modifiers of nouns (*a tall tree*);
(ii) as the complement of a copula *be* in predication (*That tree is very tall*);
(iii) by the fact that they inflect in a certain way (a morphological construction: *tall-er, tall-est*); and
(iv) that they can in turn be modified by certain degree expressions (*very tall, a little tall*).

The problem is that these constructions defining English Adjectives are constructions of English, not of Sidaama, Iñupiaq, Mamainde or Acehnese. So English Adjectives are English word classes; the other languages have their own word classes. In other words, **word classes are language-specific**. Word classes as they are usually defined cannot be used for crosslinguistic comparison, nor can one make generalizations across languages about word classes. Needless to say, this undermines the raison d'être for the word class approach to syntactic analysis. If the word classes are different from one language to the next, then the word class approach is not a universally applicable model for syntactic analysis or language description. At best, the word class approach provides different building blocks for the constructions of each language.

All hope is not lost though. One can make generalizations across languages by using functionally equivalent constructions in all the languages that one compares in order to define word classes, and one can compare word class membership across languages by identifying the semantically equivalent words that occur (or do not occur) in the constructions in question. For example, one can compare the constructions used for modification across languages, and observe how property concept words and other semantic classes of words are used in that construction. This is a fundamental characteristic of a constructional approach to syntactic analysis.

However, the more common practice in syntactic analysis and in grammatical description is to look for particular constructions in the language being described to define word classes without regard to functional equivalence across languages. Usually multiple constructions are used to define a word class, and these constructions are different from those used in another language (if indeed there are translation equivalents of the constructions at all). So a statement that a language has adjectives, or does not have adjectives, is not a very useful statement from the perspective of syntactic analysis or even from the perspective of language description. What matters in language description is the basis on which word classes are defined. What is the construction that is used to define the word class? What is the function of the construction? What are the semantic classes of words that occur (or do not occur) in the construction in question? In other words, the facts about a word class in a language description are really facts about the construction(s) used to define that word class.

This is not simply a problem of comparing the grammatical analyses of different languages. The problem of identifying word classes doesn't go away by restricting one's view to a single

language. The words in the English Adjective word class do not all occur in all of the constructions listed above. English Adjectives, like most word classes, are typically defined by not just one construction—modification of a referent—but by several constructions, such as the ones named above: predication with a copula, occurrence with degree inflections and occurrence with degree modifiers. But not all Adjectives that occur as modifiers also occur in the other three constructions (and vice versa):

(3)   *Modification of a referent:*
        a. This insect is alive.
        b. *an alive insect

(4)   *Predication with a copula:*
        a. An entire chapter is devoted to this problem.
        b. *This chapter is entire.

(5)   *Degree inflections:*
        a. tall-er, tall-est
        b. *intelligent-er, *intelligent-est

(6)   *Degree modifiers:*
        a. a very tall tree
        b. *a very even number

In other words, the different constructions in (3)-(6) do not define a single word class of English Adjectives. Instead, they define a set of distinct but overlapping word classes. This is not what is assumed or expected in the word class approach: each word is supposed to belong to a single word class.

One commonly proposed solution to this problem is to posit **subclasses** of a word class. For example, English *even* would be in the subclass of Nongradable Adjectives since it cannot combine with *very*, and Iñupiaq Numerals are called a subclass of Nouns in the first, most careful, statement in (2b), because they don't behave exactly like other Iñupiaq Nouns (the ones that denote object concepts) in all grammatical constructions. But calling them a subclass means that one is taking a certain construction (in English, the basic Noun Modification construction; in Iñupiaq, the Case Inflection construction) as being more "important" for defining a word class than another construction (such as degree modification in (5a-b)). There has to be a basis for doing this, otherwise there is no reason to call Iñupiaq Numerals or English Nongradable Adjectives a subclass instead of their own word class. The clearest basis is the one referred to above: the generalizations—within or across languages—that are said to be about word classes are really about the **construction** chosen to define the word class.

Another proposed solution to this problem is to treat a word class as a **prototype** category. In a prototype category, certain members are central (prototypical) members of the category, and other members are peripheral members. For example, a word such as *tall* is a prototypical member of the English Adjective class because it occurs in the modification, predicate copula, degree inflection and degree modification constructions. Words such as *entire, intelligent* and *even* are nonprototypical members of the English Adjective class because they don't occur in one or more of the constructions used to define the English Adjective class. While there is an insight

to the prototype approach, which we will exploit in §1.4, the common use of the prototype approach has two faults. The prototype approach often leads to descriptions that are not specific about the mismatches between the constructions, that is, the cases in which the words do not occur in all of the constructions used to define the word class. That is, there is insufficient description of the language facts. The second fault is that there is no motivation for why the particular set of constructions were chosen to define the word class, and why there are mismatches between the constructions that supposedly define the word class. These faults are due to the use of constructions without regard to their functions in order to define the word class prototypes. Instead, we will argue in §1.3 that the ***functions*** that constructions perform can form the basis of prototype-like definitions for crosslinguistic comparison.

The ultimate problem with the word class approach and the issues with linguistic description and analysis that have been described in this section is that ***the word class approach ignores the fundamental role of constructions in syntactic analysis***. Word classes are defined by the occurrence of words in constructions. This fact is obscured by the terminology used to describe the definition of word classes. The constructions used to define word classes are called many different things: 'criteria' (Givón 2001a:49; Dixon 2010b:38), 'tests' (McCawley 1998; Carnie 2013:47, 98-100), 'evidence', 'phenomena', 'operation', and 'process' (Mulder 1994:114), instead of simply being called constructions defining a word class. The words in a word class are said to have a particular grammatical or syntactic 'distribution' (Harris 1951:5; Carnie 2013:47), 'behavior' (McCawley 1998:186), 'properties' (McCawley 1998:18; Evans and Osada 2005:452; Schachter and Shopen 2007:2), 'features' (Amha 2001:89), 'use' (Jagersma 2010:268), or 'function' (Palmer 2009:94), instead of simply saying that they occur in certain constructions and not in others. All of these terms hide the central role that constructions play even in the word class approach.

If word classes are defined in terms of the constructions in which they occur, then the word class approach is circular. In the word class approach, syntactic constructions are defined by the word classes or syntactic categories that the constructions are built out of. But word classes are defined by the constructions in which they occur. This circularity is the ultimate problem with the word class approach (Croft 2001:45-47).

One practical consequence of this fundamental problem is that reference grammars may substitute the postulation of a set of word classes for a description of the constructions used to define those word classes, the functions of those constructions, and the range of semantic classes of words that occur in those constructions, and thereby give an incomplete description of the language. Even careful typological analyses often use the same term to describe a semantic class of words and a construction used to describe a word class including that semantic class but not identical to it. An example of this problem is illustrated by the first paragraph of a questionnaire used in a crosslinguistic survey of ditransitive constructions (Comrie, Haspelmath and Malchukov 2010:65):

> *Ditransitive construction* is defined semantically as 'a construction with a recipient (R) and a theme (T) argument', where these semantic role labels are understood broadly. Typical ditransitive verbs are 'give', 'sell', 'show', 'promise', 'teach', but languages may treat other verbs in the same way, so that these verbs would also count as ditransitive for current purposes (e.g. in English *deny, envy* [as in *She denied me a kiss; I envy you your success*]; in German *entziehen* 'withdraw from').

The first part of the paragraph defines ditransitive verbs as a semantic class, namely verbs describing events with a recipient participant and a theme participant (the theme is what the recipient comes to possess), with an illustrative list. But the second part of the paragraph switches to a definition of ditransitive verbs as any verb that occurs in the ditransitive construction in a language (i.e. the construction that includes semantically ditransitive verbs), even if they are of a different semantic type—denying, envying and withdrawing events do not have a recipient.

All of these problems can be avoided by a thoroughly construction-based approach to syntactic analysis and language description. Words occur in various constructions and don't occur in other constructions. Words have meanings; grammatical constructions have meanings, or functions, as well. We can compare languages by comparing what happens with the translational equivalents of English words, and comparing the functional equivalents of English constructions. Semantic and functional translation equivalence allows us to identify general patterns of syntax across languages. For this reason, this textbook does not have a chapter on word classes. Instead, the chapters are organized by the functions of the constructions in which words occur, and in the chapters, the occurrence of semantic classes of words in functionally equivalent constructions is discussed.

1.2.3. Meaning and information packaging

One important ingredient in the analysis and description of syntactic structure in this textbook is to recognize that very basic constructions in English and other languages have functions. These functions are always referred to in grammatical analysis and description: reference, modification, predication, arguments, etc. These functions are sometimes recognized explicitly as such, with terms like **propositional act, discourse function**, **information structure** and **information packaging**. But they are often not recognized as functions that constructions perform. Every construction packages information as well as conveys that information. For example, the degree modification construction illustrated in (6a), *a very tall tree*, packages the degree information (*very*) as modifying the relevant scalar property (*tall*). This information could be packaged in a different way if required in the discourse: *that tree's height is excessive* (of course, there is a concomitant change in morphosyntax and even lexical choice). Finally, these functions are related to semantic classes of words in complex ways.

We may now reformulate the problem in the statements in (2a-d), such as 'Sidaama numerals are adjectives'. Many word class terms, especially those for major parts of speech, are used for either the semantic class or the information packaging function of the construction defining the word class. Hence 'Sidaama numerals are adjectives' really means 'Sidaama numerals occur in the same modification construction used for prototypical modifiers'. 'Acehnese has no adjectives' doesn't mean 'Acehnese has no property words' or 'Acehnese has no modification constructions'. It means 'Acehnese does not have a modification construction used specifically for property words'. (Actually, for Durie it also means 'Acehnese does not have a predication construction used specifically for property words'—this shows the problem of not calling a construction a construction, because one doesn't know which constructions are referred to by statements like 'Acehnese has no adjectives'.)

Many traditional uses of terms for word classes and parts of speech are ambiguous between denoting a semantic class and denoting an information packaging function. For example,

'demonstrative adjective' means 'deictic word ["demonstrative"] used as a modifier ["adjective"]', as in *that book*. In a parallel fashion, 'demonstrative pronoun' means 'deictic word used as a referring expression', as in *That is a book*. On the other hand, 'predicate adjective' means: 'property word ["adjective"] used as a predication ["predicate"]', as in *That tree is tall*. In a parallel fashion, 'attributive adjective' means: 'property word used as a modifier', as in *a tall tree*. So the term 'adjective' is used to denote the modification function in 'demonstrative adjective' but the property concept class in 'predicate adjective'.

Another example of use of grammatical terms for either information packaging function or semantic class is in a description of the words *ano* and *wola/wolata* in Sabanê (Nambikwaran; Antunes de Araujo 2004:96):

> The morphemes **ano** and **wola/wolata** are used to express plurality, meaning 'much/many/a lot'…In the sentences (26-31), **ano** is a quantifier, while **wola(ta)** is an adverb…:
>
> (27) naysunum-ka ano-it-al-i
>   land-OBJ   much-VS-PRS.N-ASSR
>   *'There is plenty of land.'*
> …
> (30) wolata   amayl-i-al-i
>   a_lot_more   to_rain-VS-PRS.N-ASSR
>   *'It is raining very hard.'*

The word *ano* is defined by its semantic class ('quantifier'), but the near-synonym *wola(ta)* is defined by the function of the construction it occurs in ('adverb', i.e. predicate modifer).

We take a constructional approach to grammatical analysis in this book. That is, we acknowledge that word classes are defined by the constructions in which they occur. Since constructions are language-specific, word classes are also language-specific. Nevertheless, as half a century of typological research has demonstrated, one can compare the grammatical constructions of different languages, and arrive at valid crosslinguistic generalizations about the nature of grammatical structure based on those comparisons. In order to find such generalizations, it is critical to distinguish different types of "meanings" or "functions". The first are semantic categories and structures. The second are the information packaging functions. The basic model of information packaging functions of the most common grammatical constructions are described in §1.3. Both semantic structure and information packaging function are part of the function or meaning of a grammatical form, in the broad sense of 'function' or 'meaning'.

But we will also need to talk about grammatical forms, that is constructions, in a comparative or crosslinguistic sense. We will reintroduce traditional terms for these grammatical **comparative concepts** (Haspelmath 2010b) in §1.4, but they will be defined more precisely in ways that can be defined in a crosslinguistically valid fashion. This is done for the so-called major parts of speech (noun, verb and adjective) and major syntatic structures (phrase, clause and [complex] sentence) in §1.5. Finally, we return to the question of why the relationship between grammatical form and meaning is so complicated in §1.6.

1.3. Information packaging functions, semantics and grammatical expression

The problems in identifying word classes are ultimately problems in the relationship of meaning to form. As we noted in §1.1, the relationship between meaning and form is very complex, especially when we compare different languages. Most discussions of grammar describe this complexity, but few try to explain it. Why is the form-meaning relationship so complex? Why does grammatical form seem independent of meaning at least some of the time? The main reason is that grammatical structure does not "directly" express meaning in the sense of "who did what to whom, where, and when." Instead, grammatical structure—grammatical constructions— represents a way of **packaging** and **manipulating** that information, as described at the end of §1.3. The packaging of information is itself rich and multilayered, and pervades every aspect of linguistic expression from lexicon to grammatical inflections to prosody. It is also called **construal** in cognitive linguistic analysis (Langacker 1987, 2008; Croft and Cruse 2004, ch. 3).

In most syntactic constructions, the information packaging is globally organized around the following skeletal structure:

reference - what the speaker is talking about
predication - what the speaker is asserting about the referents in a particular utterance
modification - additional information added about the referent

This set of information packaging functions can be called the **propositional act** functions (see Searle 1969, Croft 1991).

We can illustrate how the information packaging works with the sentence in (7):

(7)   I wrote a long letter.

A metaphor that has been used by linguists from different theoretical approaches to capture this contrast is the **file metaphor** (e.g. Heim 1983; Givón 1983; DuBois 1987:817; Croft 1991:123; Stassen 1997:102; see §6.1). A referring expression—one that performs the function of reference—opens and/or accesses a discourse file for a referent. The pronoun *I* accesses an existing discourse file for whoever is the speaker, while *a long letter* creates a new discourse file. A predication describes something that applies to that referent or those referents, and so adds information to the referent's discourse file. *Wrote* asserts a relationship between the two referents, and so adds information to those referents' files (one thing I did was write a letter; one thing about the letter is that I wrote it). A modifier of a referring expression enriches the discourse file of a referent in some way. *Long* enriches the information in the discourse file opened for *letter*.

These three propositional act functions do not exhaust the information-packaging functions of grammatical constructions. Other types of information packaging will be discussed in more detail in later chapters (see especially chapters 6, 7 and 9). Nevertheless, much of the basic grammatical structure of sentences is organized in terms of reference, predication and modification.

Information packaging functions are different from semantic classes, even though they are closely associated with them. In traditional grammar, parts of speech like noun, adjective and verb were loosely defined in semantic terms, as object, property and action respectively. The object category, represented by *I* and *letter* in (7), include both persons and things (i.e. human,

animate and inanimate objects); these subtypes will be discussed in greater detail in §2.1. Properties, illustrated by *long* in (7), are narrowly defined as persisting, scalar traits such as size and quality; the range of semantic subtypes of properties is described in greater detail in §3.1.2. Properties are also relational in that they are always properties of something, such as an object. Actions, illustrated by *wrote* in (7), are dynamic (change occurs), transitory and relational (that is, they involve participants). There are also transitory states, such as liking something or being happy, that are also discussed in the context of parts of speech. We will subsume actions and states under the label 'event'. (The term 'event' has been used in many different ways, like most technical terms in linguistics; our choice is one of the more common uses but differs from other common uses.) The range of different types of events is discussed in chapter 4.

A taxonomy of these semantic classes (also called an ontology) is given in Figure 1.1. The three semantic classes associated with the traditional definition of noun, adjective and verb are given in boldface.

Figure 1.1. Ontology of major semantic classes.
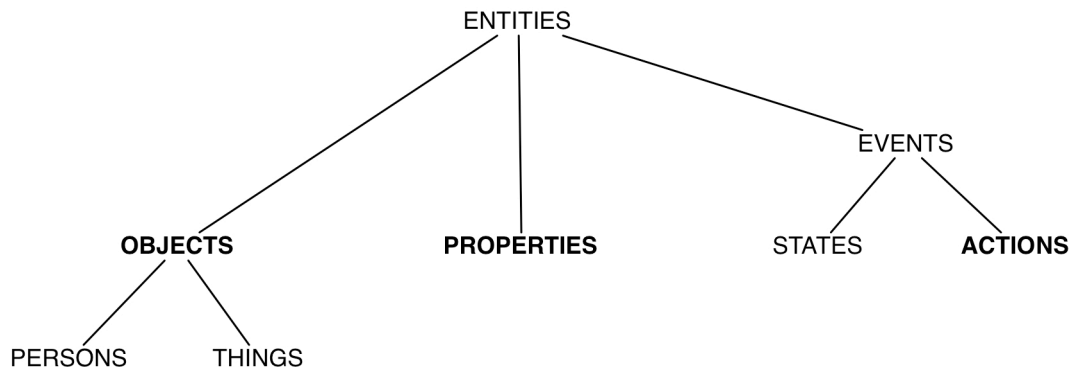
In principle, any type of information—information **denoting** (**symbolizing, signifying**) an object (person or thing), action, property, or any other semantic class of information—can be packaged in any way. ('Signify' is used for the relation between form and meaning in structuralist approaches to language, 'symbolize' in cognitive linguistics, and 'denote' in philosophy of language; I will use 'denote'.) This is the first of three principles underlying the relationship between form and meaning (the three principles are discussed in more detail in Croft 2007a:350, 360-73; 2012:13-19).

•*First principle of information packaging/construal:* any concept may be packaged, or more generally construed, in any way, in order to serve the joint goals of the interlocutors in discourse.

(This is actually a very general principle, but here we are concerned only with the packaging into reference, predication and modification.) For example, we can refer to actions (8b) and properties (8c) as well as objects (8a):

(8)   a. Vanessa surprises me.
         b. Vanessa's goodness surprises me.
         c. Vanessa's resignation surprised me.

This is the main reason why the traditional loose semantic definitions of parts of speech are inadequate.

In fact, however, there is a grain of truth in the traditional semantic definitions of parts of speech. There are very strong preferences for how speakers package different types of information. Objects—semantic types that are stable and persistent over time—are most likely to be packaged as referring expressions, and conversely, referring expressions are most likely to denote objects. This is because a discourse file is itself a persisting, stable information package. It's not impossible to refer to an action or a property, as we see in (8b-c); but it's far less likely. Likewise, actions—semantic types that are transitory in time, and presuppose a participant or participants which engage in the action—are most likely to be packaged as predications, and conversely, predications are most likely to denote actions. This is because an assertion is a passing thing—each clause in an utterance represents a single predication, and each successive clause asserts a different predication—and predications are predications *about* a referent, i.e., an information-packaging role normally filled by a participant in the action (Croft 1991:123).

These correlations between semantic class and information packaging are a manifestation of the *second principle* underlying the relationship between form and meaning:

•*Second principle of information packaging/construal:* the nature of reality, e.g. the semantic characteristics of semantic classes, favors (or disfavors) certain construals/packaging.

In the case of propositional act functions, the nature of reality favors or disfavors how semantic classes are packaged in a clause.

A corollary of this principle is that the favored construals represent the **prototypical** grammatical constructions. Here we use the notion of prototype, but define it in terms of the *function* of the construction (see also Croft 2003, ch. 6). So for example, referring to an object is the function of the prototypical nominal or noun phrase construction. A speaker can refer to an action or a property, but it will often be in a nonprototypical construction, for example a nominalization of the action or property word: *goodness* (from *good*) or *resignation* (from *resign*). This is why a language usually has multiple referring constructions, multiple predication constructions, etc. But one of each type of information packaging construction is generally "privileged": the prototypical packaging construction. The prototype of an information packaging construction corresponds to the prototype for a part of speech: prototypical nouns are object words in a referring construction, and prototypical verbs are action words in a predication construction. The information packaging construction for the prototype is the most frequent, and usually the shortest and grammatically most flexible, construction (see §1.6).

Just how the nature of reality constrains construal, in this case information packaging, varies from one category to another. Consider modification of a referent. Property concept words are most likely to be packaged as attributive constructions (modifying a referent). This is because if you're going to enrich the discourse file of a referent, which is a persisting thing, the commonest way to enrich it is with a persisting but simple additional characteristic of the referent, i.e. a one-dimensional scalar property like size (*big/little*) or quality (*good/bad*). In fact, a wide variety of concepts are used to modify referents, including numerals, quantifiers, deictic expressions and so on (see chapter 3). Nevertheless, property attributive constructions tend to be prototypical attributive constructions, i.e. prototypical adjectives are property words in an attributive construction.

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It is very important to observe that the "parts of speech" prototypes as described here are not grammatical word classes, that is, inherent properties of words no matter what syntactic constructions they occur in (see §1.2). Prototypical "parts of speech" are **semantic classes** of words **as they occur in a specific information packaging construction**. An object word in a referring expression is a prototypical noun; but predication of an object word (as in *She is a student*) is neither a prototypical noun—it's not in a referring construction—nor a prototypical verb—it's predicated but not an action word. In other words, grammatical concepts such as 'noun' and 'verb' are defined in terms of a combination of semantic class and information packaging function, explained in more detail in §§1.4-1.5.

We have seen two principles governing how word meanings are construed in grammatical constructions: (1) in principle, any word meaning can be construed in any way by a construction; but (2) the nature of reality favors or disfavors certain construals of certain meanings. There is a **third principle** governing the relationship between form and meaning:

•**Third principle of information packaging/construal:** the relationship between form and meaning—what sort of construction a word with a particular meaning occurs in—is a matter of cultural convention, that is, the linguistic conventions of the speech community.

This is why there is variation across languages: given the favoring/disfavoring of reality for certain construals, speakers make choices as to how to conventionalize the possible relationship between word meaning and constructional meaning. For example, English uses a special construction with a copula (a form of *be*) and an indefinite article (*a*) to express predication of an object category, as in (a), while Spanish uses a copula only, as in (9b), and other languages simply inflect the word for 'doctor' in the same way that the language inflects action words in predication, as in the Classical Nahuatl example (9c) (compare (9c) to the Classical Nahuatl action predication construction in (10); Stassen 1997:46, from Andrews 1975:248, 25):

(9)   a.   I am not a doctor.
          b.   Yo no soy médico.
          c.   ah-   ni-   tīcitl
              NEG- 1SG- **doctor**
              'I am not a doctor.'

(10)   ah- ni-   chōco
        NEG- 1SG- **cry**
        'I am not crying.'

Cultural convention is partly arbitrary. We can't predict what choice a language makes, that is, what choice its speakers make. There is always some degree of arbitrariness in grammar. Some linguists try to predict the structure of a grammatical construction from the structure of another grammatical construction, or from its function. Many such predictions fail because the linguist made the prediction without surveying a proper sample of the world's languages: a decently large sample, with languages from different language families and different geographical regions of the world. In typology, one does look at a large and broad sample of languages. Typologists have found valid universal patterns predicting the structure of one

grammatical construction from the structure of another grammatical construction, and/or from the function of the construction. Some of these patterns will be described in this textbook.

One of the most significant patterns that typologists, and historical linguists, have found regarding the structure of constructions is a dynamic one, about the life history of a single construction. Most if not all grammatical constructions are the result of a process called **grammaticalization**. That is, grammatical constructions emerge from novel and specialized uses of other grammatical constructions. Once a grammatical construction acquires a novel, specialized use—that is, occurs with a specific meaning or function—it starts to undergo changes in grammatical structure that generally conform to the typical expression of that meaning/function. The grammaticalization process is, however, gradual. Many constructions that we observe in languages have progressed at least partly along a grammaticalization path. As a consequence they display "mixed", or at least peculiar, grammatical structure or behavior.

For example, consider the English construction illustrated in *You better leave now.* On the surface, this is quite peculiar: the comparative form of an adjective, *better,* is occurring in the position typically occupied by auxiliary verbs such as *must* in English. This construction is a reduction of *You'd better leave now*, itself reduced from *You had better leave now*, which in turn arose from an Old English construction something like "It is better for you [dative] to…" (Denison and Cort 2007). The construction developed an obligation meaning, and for that reason eventually acquired the syntax of other obligation markers in English; but the auxiliary disappeared, and what is left is an "adjective" form occurring in "auxiliary" position.

Another example is *He's sort of cute. Sort of* began as a noun indicating a type of something, with that something in a modifying *of* phrase, something like "This is a sort of a utensil". But it acquired a degree modifier meaning, and for that reason came to be used in the English degree modifier construction, i.e in preadjectival position. Yet it kept the preposition *of* (although it lost the article *a*), leading to a grammatically peculiar "Noun *of* Adjective" construction (Traugott 2008). In fact, *of* is fusing with *sort*, leading to *He's sorta cute*—a further step in the grammaticalization process.

Why does this happen? It is because ***speakers tend to be very creative about the functions to which they put utterances*** (remember the first principle), ***but they tend to be quite conservative about the forms they employ for those functions*** (remember the third principle). The result is a messy relationship between form and function: some grammatical properties are due to the function that a specific phrase acquires, while other grammatical properties reflect the form it had when serving its original function. Another consequence of this combination of creativity and conservativeness is that languages are filled with relatively fixed word combinations that have idiosyncratic meanings, such as *eat X's fill, red alert, run across X, straight ahead, pull the rug out from under X, babysit,* and on and on, seemingly endlessly. This is of course a major part of what makes it so hard to learn another language fluently. An overview of grammatical structure such as this textbook cannot explore the full richness of conventionalized combinations of this sort (called **idioms**, **collocations**, **compounds**, etc.). We can only outline the more general grammatical patterns from which these specialized combinations arise.

1.4. Grammatical comparative concepts: constructions and strategies

The function of any construction in a language is to package certain (semantic) information in a certain way, for the purposes of the discourse at that point. For example, the English construction illustrated in (9a) above predicates an object category (doctor), in contrast to the

English construction illustrated by *the doctor*, which uses the object category (doctor) in reference, or *I ran home*, which predicates an action (run). There are also traditional or commonly used terms for the English grammatical constructions. For example, the construction in (9a) is commonly called the predicate nominal construction, or sometimes the copula construction. Of course, this is a language-specific construction, with English word forms such as the form of *be* and the form of the article *a* that are part of that construction. Hence, following the principle of capitalizing language-specific formal categories (see §1.2.1), we call it the English Predicate Nominal construction, or the English Copula construction.

But we also want to compare the English construction to the Spanish construction illustrated by the translation equivalent in (9b) above, and also the Classical Nahuatl construction illustrated in example (9c). Hence we will need a **comparative concept** (Haspelmath 2010b) for object predication constructions, and also action predication constructions, object reference constructions, and for that matter any grammatical construction that we want to compare across languages. Moreover, we will also want to compare different constructions with similar functions in a single language, such as the English constructions in (11) used for object modification:

(11)   a. the regulations of the university
         b. the university's regulations
         c. university regulations

Since every construction expresses a combination of a semantic type and an information packaging function, an obvious solution to the naming of this comparative concept is to use a compound of the semantic type and the information packaging function, i.e. 'object predication construction', 'object reference construction', 'action predication construction' and so on. In many cases, this will suffice. But in fact the grammatical names of many constructions are used in basically this fashion: a predicate nominal construction is a construction used for object predication, and so on. In particular, reference grammars use grammatical construction terms such as 'predicate nominal', 'relative clause', and so on to describe how the relevant combination of semantic structure and information packaging function is expressed in the language being described.

We will respect this usage as much as possible by employing construction names for this category of grammatical comparative concepts. More precisely, we define a category of grammatical comparative concepts as follows:

construction: a construction (or any construction) in a language (or any language) used to express a particular combination of semantic structure and information packaging function

For example, we will use the term **predicate nominal construction** to describe a grammatical construction in a language used to express object predication. A predicate nominal construction is a grammatical form, not a function; the function is object predication. But the predicate nominal construction is defined solely in terms of the function it is used to express. Since it is a crosslinguistic concept, not a language-specific concept, it is not capitalized.

The range of constructions found in the world's languages represents the range of meanings that are communicated in linguistic utterances. Human languages are general-purpose communication systems and thus are used to express everything from fundamental experiences common to all human beings to highly specialized knowledge found only in a single culture or

even more narrowly to a subcommunity in a culture with a particular expertise. No single grammar textbook or reference grammar of a language can possibly capture this full range of human experience even for one speech community. Nevertheless, focusing on the morphosyntax (rather than the lexicon) does delimit a more manageable subset of the grammatical structure of a language, namely how the meanings found in individual words and morphemes are combined and packaged. Traditions of grammatical analysis in major literary languages and in linguistics, and of grammatical description of languages around the world, allow us to devise a framework encompassing the broad range of information packaging functions that grammatical constructions perform. Thus, this textbook may serve as an organized template for grammatical description as well as an introduction to grammatical analysis. This use of the textbook will be discussed further in Appendix A to this chapter.

The introduction of grammatical constructions as comparative concepts is not enough, however. We also want to be able to compare constructions in terms of their form as well as their function. For example, English *I am not a doctor* and the Spanish translation equivalent *Yo no soy médico* are structurally similar in that they both contain an inflecting form (English *am*, Spanish *soy*) distinct from the object concept word (English *doctor*, Spanish *médico*). English and Spanish differ from the Classical Nahuatl translation equivalent *ah-ni-tīcitl*, in which the object concept word (*tīcitl*) itself is the inflecting form. Thus, we need grammatical comparative concepts that describe constructions that are equivalent in function but also similar in form, and contrast with other constructions that are equivalent in function but different significantly in form. The term we will use is one long used in typology (at least as far back as Keenan and Comrie 1977 and Givón 1979), namely **strategy**:

> **strategy**: a construction in a language (or any language), used to express a particular combination of semantic structure and information packaging function, that is further distinguished by certain characteristics of grammatical form that can be defined in a crosslinguistically consistent fashion.

For example, we will say that both English and Spanish employ an **inflecting copula** strategy for their predicate nominal constructions, or to put it another way, they both have inflecting copula predicate nominal constructions (see §6.1.2 for details). The inflecting copula strategy has certain characteristics of grammatical form that can be defined independently of language-specific word classes or constructions. Those characteristics are the ones described above: the presence of a morpheme different from the object concept word which is inflected for at least some of the categories that other predication constructions in the language also inflect for.

A single language may have multiple constructions using different strategies for a single construction, as we saw in (11a-c) for object modification in English. Thus these grammatical comparative concepts are for comparing constructions, whether in different languages or in the same language. A single language may even have multiple constructions using the same strategy. For example, Spanish has two inflecting copula strategies, one using *ser* and one using *estar*. (They differ semantically, but also overlap in some contexts.) These two Spanish inflecting copula strategies will have to be differentiated by language-specific construction names, such as the *Ser* Copula construction and the *Estar* Copula construction.

Strategies come in different kinds. One type of strategy is defined like the inflecting copula strategy, using properties of grammatical structure that are **crosslinguistically valid**, that is, defined independently of language-specific word classes or constructions. Many of these

strategies are defined in relation to other constructions; recall that constructions are defined in terms of their function, also a crosslinguistically valid type of definition. For example, the inflecting copula is defined partly by the presence of inflections that also occur in the action predication construction of the language.

Another type of strategy is defined in terms of how certain categories are defined, that is, what set of functions are grouped into a single language-specific grammatical category. For example, the ergative strategy is a strategy in which the construction expressing the subject phrase of an intransitive verb is the same construction used for what we would call the object phrase of a transitive verb. That is, the ergative strategy categorizes the intransitive subject with the transitive object (this is called the absolutive category; for a more precise description of the ergative strategy, see §4.4.1). In some cases, as with the ergative strategy, this second type of strategy describes categories that apply across multiple constructions (in this case, the intransitive and transitive constructions).

A third type of strategy is defined in terms of the use of another construction in the language to express the function in question. For example, the locative possessive strategy, illustrated by Russian *u menja mašina* 'I have a car' [lit. 'At me (is) a car'] is a strategy for expressing possession using a locative construction in the language (for a more precise definition of the locative possessive strategy; see §6.3.2). When a construction originally used for one function is extended to use with another function in this way, the construction's form is generally altered as well, in subtle or not so subtle ways.

Also, a strategy for one construction may be correlated with the occurrence of another strategy for another construction in the same language; these correlations are often in an implicational relationship, and are called implicational universals in typology. Major examples of such relationships will be identified at appropriate places in this textbook.

Perhaps more importantly, strategies change over time, that is, their grammatical structure evolves. Sometimes one strategy evolves into another. For this reason, it is often difficult to differentiate strategies that are historically related. Much of the diversity of grammatical strategies, particularly the less common or more unusual strategies, exists because grammatical change is gradual, and "hybrid" strategies appear as one strategy gradually evolves into another. We will discuss diachronic processes that lead to linguistic diversity in constructions in many places in this textbook.

Finally, strategies come in varying degrees of generality. The copular strategy for the predicate nominal constructions in English and Spanish was described above specifically for the function of object predication. However, the copular strategy can also be described as an instance of a more general strategy for encoding function in grammatical form, as will be shown in the next section. The recognition of more general strategies represent some of the insights of grammatical theory as to how human beings verbalize their experiences in linguistic form.

Studying strategies for constructions is the heart of grammatical analysis. The range of strategies found in the world's languages represents the variation in grammatical structure that may occur. It also implies constraints or at least dispreferences in how function is encoded in grammatical form that constitute generalizations or universals about human language, and it reveals the rich network of relationships among constructions in a language (and in language in general). This textbook will survey the major strategies for a wide range of constructions that have been found in crosslinguistic research. It is not intended to be exhaustive: languages are often surprisingly diverse, and unusual strategies are sometimes employed for certain constructions.

Thus, we have two categories of grammatical comparative concepts: constructions and strategies. The grammatical comparative concepts allow us to talk about grammatical constructions (form as well as function) across languages even though particular grammatical constructions are language-specific. Since they are comparative concepts, they are in lower case, unlike language-specific construction names, which are capitalized just like language-specific word classes. Constructions are defined solely by the combination of meaning and information packaging they express, while strategies are defined in addition by certain crosslinguistically definable formal characteristics they have in common.

So in order to analyze the English construction *X be a doctor*, we have the following dimensions of analysis:

Function
    Semantics: object concept
    Information Packaging: predication
Form—grammatical comparative concepts
    Construction: predicate nominal construction
    Strategy: inflecting copula strategy
Form—language-specific construction name: English Predicate Nominal construction

The functional categories allow us to describe the independent dimensions of meaning (semantics) and information packaging. The grammatical comparative concepts allow us to refer to grammatical constructions by their function, and by the formal strategy used to express that function. Finally, we can pick out language-specific constructions by language-specific proper names (capitalized).

1.5. Constructions and strategies for the major propositional act functions

We may now turn to the first set of grammatical comparative concepts and the grammatical terms we will use for them. Table 1.1 presents the grammatical comparative concepts for the propositional act constructions and the three basic semantic classes of objects, properties and actions.

Table 1.1. Grammatical constructions for combinations of three basic semantic classes and the three major propositional act (information packaging) functions

Semantic class	Propositional act (information packaging)		
	reference	*modification*	*predication*
object	referring/argument phrase *head:* noun	nominal attributive phrase	predicate nominal (construction)
property	deadjectival nominal	attributive phrase *head:* adjective	predicate adjectival (construction)
action	complement (clause)	relative clause	(verbal) clause *head:* verb

The cells on the diagonal from the upper left to the lower right are the most common or prototypical combinations of semantic class and propositional act (see §1.4), and form the basis of the major "parts of speech" (noun, adjective, verb). All of the terms in Table 1.1 have multiple uses in linguistics, but here we will use them only for constructions as defined above, that is, combinations of semantic class and information packaging function.

A new theoretical concept introduced in Table 1.1 is that of a **head** of a construction. All of the constructions given above are potentially **complex**, that is, they consist of more than one **element:** *the old doctor, very old, quickly walked off.* The elements of a construction are usually words, as in the preceding examples. But some elements are themselves constructions made up of further elements, as in *a letter **to the editor*** or *She ate **a very large cookie.***

Many, though not all, constructions contain a single word that can be identified as the head. A **head** of a construction is essentially the word that most closely denotes the same concept as the phrase as a whole. This is a semantic or functional definition of a head, not a syntactic or grammatical definition. There are also proposed syntactic definitions of a head, but they suffer from the same problems as syntactic definitions of other word classes, as described in §1.2. For example, a head is defined by its occurrence in a particular construction or constructions; the constructions used to define heads in different languages are different; and the different constructions used to define heads don't pick out the same words as heads, even in a single language. Hence there is as much confusion about syntactic definitions of heads as there are about syntactic definitions of word classes. For this reason, we will use only the semantic definition of 'head' given in this paragraph (for detailed argumentation for this position, and a slightly more refined definition of head, see Croft 2001, chapter 7).

A (semantic) head is actually defined by the combination of semantics and information packaging. For example, the head of *the tree that died* is *tree*, because *the tree that died* is a referring expression referring to a tree; but the head of *the tree died* is *died*, because *the tree died* is a predication about the tree asserting the change of state of the tree from alive to dead.

The elements of a construction apart from the head are most generally called **dependents**. The dependents of referring phrases include modifiers in the propositional act sense described above. Other dependents of referring phrases are sometimes also called modifiers, but their information packaging function is actually somewhat different from that of property concepts used as modifiers. The dependents of referring phrases are described in detail in chapter 3. The most common dependent of attributive phrases include degree modifiers such as *very* in *very long*. Degree modifiers are briefly discussed in §3.1.1.

The dependents of clauses include referring phrases that refer to the participants of the event or action predicated in the clause. For example, *I* and *a long* letter in *I wrote a long letter* are referring phrases that are dependents in a clause whose semantic head is *wrote*; they denote the two most salient participants in the writing event (the writer and the thing written). Referring phrases as dependents of verbs in clauses are usually called **argument phrases**, and we will use that term in chapters 4-5 when we discuss the structure of clauses. Other elements in clauses also appear to be dependents, and some, such as *slowly* in *She slowly lifted her arm*, are analyzed as modifiers analogously to property concepts as modifiers of referents, since they are properties of events. We will analyze all non-argument dependents of clauses, along with the head of a clause, as elements of a **complex predicate** in chapter 8. The elements of complex predicates usually do not form a syntactic unit (formal grouping), and therefore the combination of elements of complex predicates are not generally described as a "phrase". We will simply call the combination a complex predicate.

Elements of constructions such as head and dependent, or more specific categories of elements of constructions such as noun, adjective and verb in Table 1.1, do not refer to word classes in a comparative sense. Word classes are language-specific. The term 'noun' refers to the filler of a role (head) in a construction defined in terms of semantics and information packaging (namely, object reference). The basis for the comparative concept 'noun' is functional, not formal.

The term 'phrase' is most commonly used for constructions performing the functions of reference and modification, while the term 'clause' is most commonly used for constructions performing the function of predication. We will follow this convention here. There are in fact at least two other information packaging functions parallel to predication that are also usually described as clausal information packaging functions. These are the thetic and identificational functions, which are discussed in chapters 6-7, as well as the so-called speech act constructions (interrogative, imperative, etc.), also described in chapter 7. That is, the term 'clause' may include constructions performing information packaging functions other than the predicational function. However, we will generally use 'clause' to mean specifically predicational constructions; if necessary, we will distinguish clauses with predicational function as **predicational clauses**, and distinguish clauses with the action predication function as **verbal clauses**. Finally, there are also **complex sentence** constructions involving more than one clause, traditionally described as various kinds of coordination and subordination. Complex sentence constructions represent different ways of packaging the semantic relations between events that are expressed in multiple clauses; they are discussed in detail in chapters 9-11.

Phrases, clauses and complex sentences form the basic organization of sentence functions, and correspond to the three parts of this textbook following this introductory chapter: Part Two surveys phrasal constructions, Part Three surveys clausal constructions and Part Four surveys complex sentence constructions. These levels correspond more or less to traditional analyses of sentence structure, although they are defined in terms of information packaging function here.

For the most part, the terms in Table 1.1 are used in similar ways in most grammatical analyses, leaving aside the pervasive problems of using the same term (uncapitalized) for language-specific constructions and/or semantic types as well as for constructional functions. In some cases, we will be using the term more broadly than some linguists do. For example, some linguists would not call the inflecting strategy of the Classical Nahuatl construction in example (9) (§1.3) a predicate nominal construction, and would instead restrict the term 'predicate nominal' to copular or noninflecting strategies. For us, all of the terms in Table 1.1 are for constructions, not strategies, so they are defined solely in functional terms, and not by formal grammatical characteristics such as the presence of a copula.

The one major deviation from common practice in Table 1.1 is the restriction of 'noun' to object words in referring expressions (specifically, as the head of the referring expression), of 'adjective' to property words in attributive expressions, and of 'verb' to action words in predications. For example, *doctor* in *the old doctor* is a noun, but *doctor* in *I am not a doctor* will not be described as a noun, because it is not the head of a referring expression; it is part of a predicate nominal construction.

This may seem counterintuitive, because it looks like the same word in both constructions, and *doctor* behaves like a noun in the predicate nominal construction: it takes the article *a*, and it can be inflected for number (*They are not doctors*). However, these are facts of English, not facts about predicate nominal constructions in general. In fact, we have already seen that the Classical Nahuatl translation equivalent *tīcitl* doesn't work the same way: it inflects in the same way that

verbs—in our narrow sense of heads of predications—do in that language (it inflects for the person and number of the subject argument phrase, and for negation). If we want to be consistent across languages, then we must define constructions by their functions. Hence a noun is the head of a referring expression, and nothing more.

The typical analysis for these predicate nominal constructions is to assume that *doctor* in *I am not a doctor* is a "noun" in English, but *tīcitl* in *ah-ni-tīcitl* is a "verb" in Classical Nahuatl. This leads to the problematic statements discussed in §1.2, such as "nouns are verbs in Classical Nahuatl". But we now have a way to be explicit about what is really going on in Classical Nahuatl, and to avoid the problematic formulations cited in §1.2. First, the word classes of a particular language are language-specific. There is nothing preventing us from saying *doctor* in *I am not a doctor* is an English Noun, but *tīcitl* in *ah-ni-tīcitl* is a Classical Nahuatl Verb. In fact, this is not entirely straightforward, since the "Nouns" that occur in the English Predicate Nominal construction may not be the exact same set of words that occur in the English Referring Phrase (also called English Noun Phrase) construction. But the point being made here is simply that language-specific word classes may cut across grammatical constructions defined as comparative concepts.

1.6. Nonprototypical strategies: why the form-function mapping is so complicated

The English Predicate Nominal construction and the Classical Nahuatl Predicate Nominal construction are constructions used to express nonprototypical combinations of semantic class and information packaging function. These language-specific constructions instantiate two contrasting strategies used to encode nonprototypical combinations of semantics and information packaging that are found in many different constructions, not just the constructions found in Table 1.1.

In English, the word *doctor* in the predicate nominal construction looks morphosyntactically very much like the word *doctor* in the referring expression construction. Object concepts occur most commonly in reference, much more so than in predication, and so object concepts are the semantic prototype for reference. In English, when object words are being used in predication rather than reference, they "take along" the morphosyntax of their prototypical information packaging function, so to speak. That is, English speakers encode the nonprototypical combination of object predication by using the grammatical structures found in the prototypical combination in the same row of Table 1.1, namely object reference. We will call this encoding strategy the **prototypical information packaging (IP) strategy**: employ the morphosyntax of the information packaging function prototypically associated with the semantic category.

This is why *doctor* in *I am not a doctor* is called an English Noun in word class approaches: it can take an article and other modifiers (e.g. *I am not a medical doctor*). However, *doctor* in the English Predicate Nominal construction is not fully like a prototypical noun: for example, *doctor* takes only the indefinite article (*I am not the doctor* has a different meaning; see §6.2). We describe this as a more limited **behavioral potential** of *doctor* in the Predicate Nominal construction compared to the prototypical noun in reference.

In Classical Nahuatl, on the other hand, when an object word like *tīcitl* is used for predication, it takes on the morphosyntax (or at least some of it) of words prototypically associated with its actual information packaging function, namely action predication: it indexes its subject and inflects for negation similar to a verb (= head of an action predication). That is, Classical Nahuatl speakers encoded the nonprototypical combination of object predication by

using the grammatical structures found in the prototypical combination found in the same column of Table 1.1, namely action predication. We will call this encoding strategy the **actual information packaging (IP) strategy**: employ the morphosyntax of the words prototypically associated with the actual information packaging function.

This is why *tīcitl* in *ah-ni-tīcitl* is sometimes called a Classical Nahuatl Verb, or a subclass of Classical Nahuatl Verbs, or it is said that there are no nouns in Classical Nahuatl in the word class approach (Andrews 1975:13). However, *tīcitl* in the Classical Nahuatl Predicate Nominal construction is not fully like a prototypical verb in the language: it does not inflect for tense (Andrews 1975:147). That is, *tīcitl* in the Classical Nahuatl Predicate Nominal construction has a more limited behavioral potential compared to the prototypcial verb in predication.

The English Predicate Nominal construction does not consist solely of *a doctor*; it also includes a form of *be*. *Be* is an English Copula, that is, it is a language-specific word class defined by the Predicate Nominal construction. The employment of this "extra" morpheme is another common grammatical strategy, particularly for nonprototypical constructions such as the predicate nominal construction. We will call this strategy the **overt (coding) strategy.** Hence a more accurate (but not yet completely accurate) description of the English Predicate Nominal construction is that it uses an overt prototypical IP strategy.

An example of a **zero (coded)** prototypical IP strategy—no extra morpheme—for object predication is found in Pitjantjatjara (Stassen 1997:69). The predicated object word *ngalyayala* in (12) is identical in grammatical structure to the object word *tjitji* used in reference in (13).

(12)   wati   ngalyayala
       man   **doctor**
       'The man is/was a doctor.'

(13)   tjitji   yinka   -ra
       child   sing   -PRS
       'The child is singing.'

The English Copula is not just an extra morpheme found in the predicate nominal construction of English. It also inflects for subject and tense, and may take modal auxiliaries, typical of action predication:

(14)   a. I **am not** a doctor.
       b. He **was** a doctor.
       c. She **might be** a doctor.

Thus, the English Predicate Nominal construction has some characteristics of the actual IP strategy as well as some features of the prototypical IP strategy. We will call this a **hybrid IP strategy.** Hence will finally describe the English Predicate Nominal construction as employing an overt hybrid IP strategy.

A example of a pure overt prototypical IP strategy, without any trace of the actual IP strategy, is the Mandarin Chinese Predicate Nominal construction :

(15) Zhāngsān   shì   yi   -ge   hùshì
      Zhangsan   **COP** one   -CLF   nurse
      'Zhangsan is a nurse.'

The Mandarin Chinese Copula does not display any of the typical morphosyntax of an action predication in the language.

   These different strategies may also be illustrated by the nonprototypical combination of reference to actions, that is, complement clause constructions. English provides examples of the zero and overt prototypical IP strategies for complement clause constructions in (16) and (17) respectively; compare the action predication construction in (18):

(16) …then decides **he'd much rather take a whole basket**.
(17) …then decides **that he'd much rather take a whole basket**.
(18) He'd much rather take a whole basket.

   The action word *take* in (16) is functioning as an argument of the main predicate *decide.* Yet it occurs in the same construction as if it were the main predication: it takes adverbial modifiers, a modal auxiliary, a subject and a direct object. An alternative to example (16) (which is an attested example from the Pear Film narratives) includes the English Complementizer *that*, an extra morpheme that makes (17) an example of the overt prototypical IP strategy. In either case, *take* is analyzed as an English Verb in the word class approach because it looks like a prototypical verb (ignoring the overt Complementizer in the construction).

   Finnish provides an example of an overt actual IP strategy for action reference (Koptjevskaja-Tamm 1993:168-69). Example (20) illustrates object reference in Finnish:

(19) vanhempien   taloudellisen   tuen   antaminen
      parents:GEN   economic   support:GEN   **give**:NML
      'parents' giving of economic support'

(20) Silja   juo   maidon.
      Silja:NOM   drink   **milk**:ACC
      'Silja drinks milk.'

The action word 'give' in (19) has the structure of a referring phrase: both the participants are expressed as possessive modifiers of the nominalized form. The nominalization morpheme is an extra morpheme, hence the overt actual IP strategy. Since the extra morpheme is an affix on 'give', the whole word *antaminen* is analyzed as a Noun in the word class approach, since the word form is different from the predicate form.

   An example of an overt hybrid IP strategy for action reference is the English Gerund construction:

(21) Her **drink**ing coffee surprises me.

   Her drinking coffee denotes an event but it is an argument of the predicate *surprises*—that is, the speaker is referring to the action of drinking. The first part, *her drinking*, looks like a referring expression: it takes a possessive pronoun modifier, just like *her bicycle*. In this respect,

the English Gerund uses the actual IP strategy. But *coffee* is expressed like the Direct Object of the verb *drink*, as in the action predication *She drinks coffee*. In this respect, the English Gerund also uses the prototypical IP strategy, hence it is a hybrid strategy. Finally, the English Gerund has an "extra" morpheme, the *-ing* suffix. Thus, the English Gerund uses an overt hybrid IP strategy. Forms like *drinking*, in which the overt morpheme is part of the word form and the word form employs a hybrid IP strategy, pose a severe problem for word class approaches. Is the English Gerund a Noun or a Verb? This question cannot be answered, because it is both (i.e., the hybrid IP strategy).

Example (22) illustrates an example of an overt hybrid IP strategy from Amharic (Koptjevskaja-Tamm 1993:283):

(22)　yä-　pitär　yäfəqr　-u　　-n　　　zäfän　azzäfafän
　　　　GEN- Peter　love　　-DEF　-**ACC**　song　**sing:NML**
　　　　'Peter's singing [i.e. his way of singing] the love song'

In fact, the Amharic example is exactly like the English Gerund. The construction has the participant 'Peter' in the genitive case, like a possessor of 'singing'; this is an example of the actual IP strategy. However, the construction also has 'the love song' in accusative case, like the object of 'sing'; this is an instance of the prototypical IP strategy. Finally, the word 'sing' is in a nominalized form, hence it is an example of the overt hybrid IP strategy. The similarity of the English and Amharic constructions is because the constructions in both languages conform to universals about the expression of reference to actions that will be described in chapters 9 and 11.

I have gone into some detail about predicate nominal constructions and complement constructions in order to illustrate how and why the form-function mapping in language is so complicated. The complication arises from the competing forces of encoding meaning (semantic class) and information packaging. Certain combinations of semantic class and information packaging are prototypical (the most frequent—see below). Other combinations of semantic class and information packaging occur, and indeed are essential for communication. These other, nonprototypical combinations use different combinations of different prototypical constructions to a greater or lesser extent, and sometimes throw in extra morphemes (free or bound) to boot. Different languages employ different combinations, leading to even greater crosslinguistic diversity. And in fact, speakers of the same language use different options for different combinations of semantic class and information packaging. For this reason, language variation within and across languages is rampant.

1.7. Two crosslinguistic universals of grammatical strategies

Despite the complexity described in §1.6, there are nevertheless certain broad universal patterns that constrain this complexity, and justify our characterization of certain combinations of semantic class and information packaging function as "prototypical". They can be summarized in two universals:

•**Universal One.** A lexical class used in a nonprototypical propositional act function will be coded with at least as many morphemes as in its prototypical function (**structural coding**).

Structural coding (Croft 2003, chapter 4) refers the morphemes used to express the meaning. Contrasts in structural coding are usually between **zero** coding and **overt** coding—presence or absence of the "extra" morpheme described in §1.6. The overt morphemes may be free (like the English copula **be**) or bound (like the English nominalization suffixes in *bright-**ness**, descrip-**tion***). Zero coding, or more generally coding by fewer morphemes, is characteristic of the constructions used for the more frequent, prototypical members (see Table 1.2). Coding by (more) overt morphemes is characteristic of the constructions used for the less frequent, nonprototypical members.

Table 1.2. Examples of English constructions for parts of speech and their zero/overt coding.

	Reference	**Modification**	**Predication**
Objects	*vehicle*	*vehicle**'s**, vehicul-**ar**, **of/in**/etc. the vehicle*	***be a*** *vehicle*
Properties	*white-**ness***	*white*	***be*** *white*
Actions	*destruc-**tion**, **to** destroy, destroy-**ing**, **that**…destroy*	*destroy-**ing**, destroy-**ed**, **which/that**…destroy*	*destroy*

•**Universal Two.** A lexical class used in a nonprototypical propositional act function will also have no more grammatical behavioral potential than in its prototypical function (**behavioral potential**)

Behavioral potential (Croft 2003, chapter 4) is the ability to express other, "cross-cutting" semantic distinctions grammatically—also described in §1.6. The semantic distinctions can be expressed either by bound morphemes (inflections) or by separate words (for example, definite articles, degree modifiers or modal auxiliaries).

Behavioral potential is what is described by the IP strategies introduced in §1.6. In the case of the propositional act constructions, behavioral potential usually applies to the actual IP strategy, that is, the morphosyntactic patterning of the prototype of the same information packaging function (i.e., in the same column in Table 1.1 or Table 1.2). Characteristic inflectional behavior for each column is given below (these inflectional categories will be described in more detail in the relevant chapters):

Typical behavioral potential for reference: number, gender, case, definiteness; indexation of (agreement with) possessor

Typical behavioral potential for modification: degree (simple, comparative, superlative); agreement with head noun in number, gender and case

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Typical behavioral potential for predication: tense, aspect, modality (TAM); indexation of (agreement with) subject (and object) in person, number and/or gender

For example, predication of an object category, may not follow the actual IP strategy completely: it may lack some inflections associated with verbs in the language, as we observed with the Classical Nahuatl Predicate Nominal construction. This would be an example of Universal Two in operation.

Greater behavioral potential is associated with higher token frequency/prototypicality. More generally, prototypical members have lower structural coding but higher behavioral potential. One can think of it in this way: the prototypical members are getting more communicative value (behavioral potential) for less cost (structural coding).

The motivation for these two universals is **token frequency** (Greenberg 1966a; Bybee 1985; Croft 2003). The prototypical members are the most common fillers of those information packaging roles. So they tend to be shorter (lower structural coding) and more differentiated grammatically (higher behavioral potential). Conversely, less prototypical members tend to be longer and to be less differentiated.

To sum up: a construction based approach allows us to avoid the problems of the word class based approach that we find in comparing different languages and comparing different constructions performing the same function in the same language. The construction based approach also allows us to characterize the complex mapping between form and meaning, by distinguishing prototypical and nonprototypical combinations of semantic content and information packaging, and by identifying different types of strategies to encode function in grammatical form.

Appendix A. Some issues in reading and writing grammatical descriptions

A.1. Theory and practice

In this chapter, we have shown that the word class based approach to grammatical analysis has numerous problemsm and we have presented a constructional approach to grammatical analysis that addresses those problems and allows us to build the foundations of a crosslinguistically valid approach to grammatical analysis and grammatical description of any human language. The constructional approach also provides the framework for presenting the grammatical structures of the world's languages in the remainder of this book.

The fundamental observation is that people speak in utterances, and utterances are instantiations of constructions (usually multiple interlocking constructions). Constructions have meaning, that is, information-packaging functions. Constructions embedded in other constructions, such as phrases within clauses and also words within phrases or clauses, have meanings as well. Putting the two together is a complex mapping between words or smaller constructions on the one hand, and the constructional roles they conventionally are allowed to fill on the other hand. (And speakers are free to stretch and break convention by putting words in unexpected roles in constructions.)

Hence word classes found in descriptions of languages (and analyses in the linguistics literature) are derivative of the constructions which linguists use to define those word classes. A more accurate and precise description of the grammar of language would be a description of the constructions of the language and their information packaging function, and of words, their

meanings, and the constructions they occur in; and the meanings that result from combining words and constructions. Such descriptions would allow for ready comparison of the grammars of very different languages, and the inference of universal patterns of grammar such as the two presented in §1.6.

Names of word classes do not have the theoretical significance that they do in the word class approach. They are merely **labels** for the set of words that occur in certain constructions (more precisely, a certain role in a construction) in a language. Word classes are language-specific and construction-specific. Constructions are also language-specific, although we can also speak of constructions (lower-case) that are functional equivalents across languages for the purposes of grammatical comparison. This is the same as comparing translation equivalents or semantic classes of words, that is, words in different languages that express the same concepts.

However, most syntactic analyses and the vast majority of language descriptions are written using the word class approach. These descriptions are problematic; but for many languages—probably the great majority of languages—this is all the grammatical description that we will ever have. For a linguist who wants to learn how languages express concepts and package that information into utterances, she or he will have to interpret grammatical analyses and language descriptions written in the word class approach. For this reason, one must be aware of the inconsistencies and problems in description and analysis that were described in §1.2. One must take a critical view of the use of grammatical category terms in a syntactic analysis or language description. Are they being used to describe a semantic class? If not, what construction(s) in the language is/are being used to define the word class? What is the function of the construction or constructions? How much can be inferred about the construction's function from the translation of the examples in the description? Is the same term being used in different ways in a single analysis or description?

Finally, even in a constructional approach to syntactic analysis and language description, we need to be able to talk about word classes, that is, the language-specific set of words that occur in a specific construction (that is, a specific constructional role). Thus, all linguists have the need to provide labels for language-specific word classes in either syntactic analysis or language description. Likewise, one needs names for constructions which are also language-specific. In this appendix, we will discuss what sorts of labels are convenient and what sorts of labels are inconvenient for use by other scholars (or speakers or learners, for that matter). It should be emphasized that *word class and construction labels are only labels; they do not have any analytical importance or theoretical significance*, unlike in the word class approach. Hence the choice of label is not critical. However, some choices are more convenient than others, in making a syntactic analysis or language description accessible to other linguists (and language learners) who want to use it.

A.2. Rules of thumb for labeling language-specific word classes

One might first conclude that since word classes are language-specific and construction-specific, and constructions are language-specific, then one should coin unique names for each word class in each language. In general, however, this strategy for labeling words and constructions is highly inconvenient and renders a language description virtually unreadable. More importantly, it misses the fact that word classes from different languages do overlap in the semantic classes they denote, and constructions from different languages also overlap in the functions they perform. Grammatical structures in languages can be compared, and comparison

reveals similarities across languages and even universals of grammatical structure. Hence it is best to avoid coining new terms unless absolutely necessary.

It has also been suggested that coining new terms is useful to avoid confusion. However, the reason that existing terms are confusing is because of how they have been used to designate a semantic class, a word class defined by a construction, or the information packaging function of the construction that defines the word class. Given this systematic ambiguity, it is likely that new terms will develop the same ambiguities and hence the same confusions (see the discussion of the use of 'ditransitive', a relatively new linguistic term, in §1.2).

As the last paragraph implies, the first desideratum in using grammatical terms should be to keep the following types terminologically distinct:

Function:
   •Semantic classes of words or morphemes
   •Functional types of constructions, as defined in §1.3
Language-specific form:
   •(Language-specific) word classes defined by a (language-specific) construction, or more precisely, a role in that construction
   •Language specific constructions, that is, grammatical structures that express one or more constructional functions

In §1.2, we discussed some of the problems in word class terminology, in particular the fact that some widely used terms sometimes denote either a semantic class, or a word class, or even an information packaging function of the construction defining the word class, or all of the above, even in a single description. In that section, we also introduced two rules of thumb, repeated below:

Rule of Thumb 1: Use semantic class terms to denote semantic classes, and grammatical terms to denote word classes, if distinct terms are in general use. For example, use 'property word' and not 'adjective' if talking about the semantic class of property concept words.

Rule of Thumb 2: If the same term is used for both a semantic class and a (language-specific) word class, capitalize the term when used for the word class and leave the term in lower case for the semantic class. For example, use 'numeral' for the semantic class and '(English) Numeral' for the English word class that includes this semantic class.

One symptom of hiding the role of constructions in the word class approach is that there is no agreement on what the word classes of languages should be, or whether particular word classes exist or not in particular languages. Much effort is wasted on trying to resolve these questions (Croft 2001:30-32; Haspelmath 2012). An example of the problem is illustrated by the following discussion of Maale *pe* (Amha 2001:87-90), excerpted below:

   pe: *logophoric or reflexive?*

   Functionally, ***pe*** *may appear as a reflexive pronoun…:*

14a. ʔiyátá   péná   naʃk-á-ne
       3PL:NOM   3LOG   like-IPF-AFF.DCL
       'They like themselves.' (i.e., 'they are selfish/egotistic')

*…**pe** occurs as a third person possessive pronoun when the subject of the sentence and the possessive pronoun are co-referential, which will not be possible if **pe** is a reflexive pronoun…:*

17a. ʔizí   pe   máári   koʃʃ-á-ne
       3MS:NOM   3LOG   house:ABS   repair-IPF-AFF.DCL
       'He$_j$ is repairing his$_j$ house'

*Based on the above features, we conclude that, except for one restriction, **pe** is a logophoric pronoun…The restriction involves this:…verbs of reporting…are considered to be the main triggering factors for logophoricity…**pe** in Maale, doesn't occur with the quotative verb geʔ- 'say'. It is never used as* subject pronoun *of an embedded clause…Where one would expect an indirect speech form, Maale speakers only use a direct speech form…:*

22. ʔádé   ʔammáma tá   gel-é-ne   geʔ-é-ne
      father:NOM   mission:ABS 1SG:NOM   enter-PF-AFF.DCL   say-PF-AFF.DCL
      'My father said "I joined the Christian religion"'
      = 'My father said that he became a Christian'

The author describes the occurrence or nonoccurrence of *pe* in three different Maale constructions: the Subject/Object Coreference construction in (14a), which defines the word class 'reflexive pronoun' for the author; the Subject/Object Possessor Coreference construction in (17a), which poses a problem in naming the word class for the author; and the Speech Verb Subject/Complement Verb Subject Coreference construction, which lacks *pe* because it uses a Direct Speech complement construction. The author chooses to describe the word class of *pe* as a logophoric pronoun (this example will be discussed further in §1.7). But the basic facts are: there are three distinct constructions, each with its own function, in Maale; and *pe* occurs in the first two constructions but not the third one. These facts are made explicit in the passage, but they would not be clear from a description that simply assigned a word class label to *pe*; and the facts are made explicit here chiefly because the author was not certain which word class label to assign to *pe*.

The problematic case of the category of the Maale word *pe* suggests two more rules of thumb for labeling word classes. Recall that the author was unsure whether to call Maale *pe* a reflexive or a logophoric pronoun—or more precisely (following Rule of Thumb 2), a Reflexive or a Logophoric Pronoun. This is because Maale *pe* differs from English *himself/herself/*etc. in the functional types of constructions that it occurs in. The author chose to label Maale *pe* a Logophoric Pronoun.

First, and most important, the author presented three constructions of Maale and described the occurrence of *pe* in those three constructions. This is the crucial analytical and descriptive information, presented in Table 3 (with a comparison to English *herself*):

Table 1.3. The distribution of Maale pe *and English* herself *across three functionally equivalent constructions*

	Subject-Object Coreference Construction	Subject-Object Possessor Coreference Construction	Speech Verb Subject-Complement Subject Coreference Construction
Maale *pe*	√	√	*
English *herself*	√	*	*

At one level, this is the only significant information we need about Maale *pe*. But of course the author would like to refer to the category that *pe* belongs to, and so the labeling problem arises.

The usual solution to the labeling problem, for both word classes and constructions, is encapsulated in the following rule of thumb:

> ***Rule of Thumb 3****: **Use as the label for a word class the "prototype" function of the construction used to define the member(s) of the word class**, even if the word(s) in question also occur in other constructions. The same rule of thumb applies to constructions; I have followed this rule of thumb in naming the Maale and English constructions in Table 3.*

With respect to the word class of *pe*: the label 'Reflexive' is typically used for a filler of the Object role in a Subject-Object coreference construction, and the label 'Logophoric' is typically used for a filler of the Complement Subject role in a Speech Verb Subject-Complement Subject construction. Rule of Thumb 3 suggests that the author's choice of 'Logophoric' is an unfortunate one. Technically, nothing theoretical rides on the choice, so the choice isn't wrong *per se*—the author can use any label she wants for the Maale category. It is confusing to the reader, however, because the term 'Logophoric' implies that *pe* is used at least prototypically in a construction with a particular function that *pe* does not actually occur in.

There is a problem with Rule of Thumb 3. In some languages, there is no distinct form or word class for the function that the label implies. For example, Old English lacks a special Reflexive Pronoun form, and uses the same form for noncoreferential Objects as well as coreferential Objects (Comrie 2003:203):

(23)   hē$_i$ slōh   hine$_{i/j}$
        'He$_i$ hit **himself$_i$/him$_j$**.'

The term typically used for noncoreferential Object Pronouns is Anaphoric Pronoun. Old English *hine* is used for both coreferential and noncoreferential Object Pronouns. Should *hine* be labeled an Anaphoric Pronoun or a Reflexive Pronoun?

The usual labeling strategy is described in the following rule of thumb:

> ***Rule of Thumb 4****: **There is an implicit implicational hierarchy of labeling, so that when the same form occurs in two distinct constructions which are used to define a category, one construction trumps the other in labeling the category.***

In the case of Object Pronouns, Subject-Object Noncoreference trumps Subject-Object Coreference: we call *hine* an Object Anaphoric Pronoun, not a Reflexive Pronoun.

Unfortunately, these generally used implicational hierarchies of labeling are not codified anywhere. The labeling choices implicitly refer to universal typological patterns: e.g. when a language has a distinct Reflexive Pronoun in the Subject-Object Coreference construction, it represents an extension of a form from certain other domains such as intensification, or it has greater structural coding (*herself* vs. *her*) which often represents a lower degree of grammaticalization, while Anaphoric Pronouns have other sources (Demonstrative Pronouns, etc.). Although I will not be providing a list of how to label word classes, this textbook will introduce many of the typological universals and universals of grammaticalization that underlie the conventional naming of word classes.

Yet another problem in word class labeling is found when multiple constructions are used for a word class, but each construction defines different (though overlapping) sets of words. In §1.2, we observed that the English Adjective class is often defined by occurrence in several constructions, including the Attributive (modifying) Adjective construction, the Predicate Adjective construction, the Degree Inflection construction, and the Degree Modifier construction. However, English *alive* does not occur as a modifier, English *intelligent* does not inflect for degree, English *even* does not take degree modifiers, and English *entire* cannot be predicated. Most linguistic descriptions avoid the problem of labeling such distinct but overlapping word classes; at best they list exceptions, set up subclasses, or treat the category as a "prototype" without justifying the prototype analysis. In a construction-based approach, one can use the following rule of thumb to name these overlapping classes:

> **Rule of Thumb 5: name the word class using the name of the construction that defines the word class.** (Croft 2001:50)

In the case of English Adjectives, we should therefore define four word classes corresponding to the four constructions that define them: Attributive Adjectives, Predicate Adjectives, Inflectional Adjectives, and Gradable Adjectives. Although the word class labels suggested here all include the word 'Adjective', these should not be thought of as subclasses of a word class Adjective. Instead, they are a set of largely overlapping word classes that have in common a substantial proportion of property concept words (since 'Adjective' is the term often used for the word class that includes mostly property concept words). The important thing to remember here is to resist the temptation to think that the 'Adjective' word class is a theoretical concept applicable across languages or even across constructions of English. The word class labels are simply heuristic devices to help linguists find the equivalent semantic classes and construction functions across languages.

It must not be forgotten that the labels for word classes are simply convenient ways to talk about patterns of occurrence of words with particular meanings in constructions with particular information packaging functions. But some labels are more convenient than others, in particular labels that clearly distinguish grammatical form from word meaning and constructional function (most easily by capitalizing the former and not the latter), and labels that evoke the prototypical meaning of members of the word class and the prototypical function of the construction.

A.3. Organization of a grammatical description and organization of this book

Since utterances are made up of combinations of meaningful units (words, morphemes and larger units), grammatical constructions are interconnected in many different ways. Hence any linear, hierarchical organization of grammatical constructions is going to emphasize some connections between constructions over others. The question is, what is the best, or least bad, way to organize the presentation of grammatical constructions in a linear, hierarchical fashion?

In discussions of how to organize a description of the morphosyntax of a language, two alternative approaches are usually described (Mosel 2006; Cristofaro 2006). One approach is to organize the description around the forms of the language, namely the constructions and word classes of the language, each of which may have a variety of meanings. This approach is called the **semasiological** approach, because it gives the meanings of the language forms (the formal constructions and word classes). The other approach is to organize the description around the meaning that the grammatical categories and constructions express or encode; again, each function is usually expressed in more than one morphosyntactic form. This approach is called the **onomasiological** approach, because it gives the forms that express the meaning.

The semasiological approach is the one mostly widely used. The semasiological approach can also be thought of as oriented towards language comprehension: what does this construction mean? The onomasiological approach is sometimes proposed by typologists, in order to compare how languages express concepts. In addition, two influential books employed the onomasiological approach to the dscription of English grammar: *A Communicative Grammar of English* (Leech and Svartvik 1975/2002, and *A Semantic Approach to English Grammar* (Dixon 1991/2005) {also Chafe 1970}. The onomasiological approach can also be thought of as oriented towards language production: how do I express this concept?

The analysis presented in this chapter indicates that there is in fact a third way to organize a morphosyntactic description: by the information packaging functions performed by grammatical constructions. Again, there are often several different constructions that package information—that is, semantic content—in a particular way. These constructions are often specific to particular semantic classes of words or phrases that occur in the particular information packaging function.

No organizing principle is ideal, because form, semantics and information packaging are all different. However, it can be argued that organizing a grammar by information packaging function combines features of both the semasiological and the onomasiological approaches. First, there is a closer relationship between information packaging function and morphosyntactic construction than there is between semantic classes and structures and morphosyntactic construction: recall the principle that any concept can be packaged in any way, while the constructions do the packaging. In this respect, organizing a grammatical description by information packaging functions is relatively close to a typical semasiological language description. Conversely, if one takes an onomasiological approach to grammatical description, one must decide how to organize the large number of constructional functions that make up any language's grammar. In practice, most grammars organize the constructions under headings such as 'noun phrases', 'modifiers in noun phrases', 'clauses', and 'complex sentences'. These headings correspond fairly closely to the propositional act functions of reference, modification, predication, and the packaging of sequences of clauses in discourse. Of course, constructions are extended to functions beyond the ones that they originally performed or prototypically perform. But using information packaging and then semantic class, one can offer an organization of language-specific constructions by their functions that is broadly comparable across languages.

This textbook reflects the philosophy of organization of a grammatical description described in the preceding paragraph. It is broadly organized at the larger scale by information packaging function. Within each function, subsections describe different semantic classes and how they are expressed in the function in question, such as different semantic classes of modifiers (property words, numerals, quantifiers, deictic expressions etc.). Constructions are frequently extended to new functions, partly as a result of grammaticalization. I have tried to keep together functions that tend to be associated with each other due to paths of grammaticalization. Since this is a morphosyntax textbook, some organizational decisions have been made for pedagogical rather than descriptive reasons; but I have tried to keep both pedagogical and descriptive issues in mind in presenting the constructions of the world's languages. At the very least, this textbook presents a survey of constructional functions whose expression should be described in any reference grammar of a language.

Appendix B. Interpreting language examples: interlinear morpheme translations

Since this textbook describes crosslinguistic variation in how information content and information packaging are encoded in morphosyntactic form, one must be able to intrepret example sentences from other languages, including languages that you are otherwise unfamiliar with. The now widely used method to make the interpretation process easier is the **interlinear morpheme translation**, or IMT. An IMT can be illustrated by example (22), repeated below:

(22) yä- pitär yäfəqr -u   -n   zäfän azzäfafän   ← **object language**
      GEN- Peter love -DEF -ACC   song   sing:NML   ← **IMT**
      'Peter's singing [i.e. his way of singing] the love song' ← **(free) translation**

The first line gives the sentence or phrase in the original language, usually called the **object language**, in a morphological analysis. (If the morpheme boundaries are obscured by morphophonological processes, the author sometimes gives two lines for the object language: the first line is the sentence as spoken, and the second line is a morphological analysis before the application of the morphophonological rules.)

There is substantial variation in the notation of different kinds of morpheme boundaries in language descriptions. However, an emerging standard is given by the Leipzig Glossing Rules (http://www.eva.mpg.de/lingua/resources/glossing-rules.php). The Leipzig Glossing Rules should be studied carefully; only the briefest summary of the rules is given here. The following list gives a summary of the morpheme boundary notation found in the object language line:

+   links the two bases in a compound. Note that base forms may themselves contain inflections.
=   links a clitic (enclitic or proclitic) to the word to which it is cliticized.
-       links an affix (suffix or prefix) to the stem to which it is affixed.
< >   encases an infix inside a word or stem.
~   links the reduplicated part of a word or stem to the word/stem. An infixed reduplication may be notated < >~ (not in the Leipzig Glossing Rules)

The second line is the IMT. The IMT gives a schematic description of the grammatical structure of the example in the object language. Each part gives the translation of the morphemes

in the object language line. The commonest convention is to translate bases in lower case, and to translate grammatical morphemes in small capitals (or all capitals). There is no standard set of abbreviations for grammatical morphemes; for a short list of proposed standard abbreviations, see the Leipzig Glossing Rules, and for a much longer list (with some differences in abbreviations), see Croft (2003:xix-xxiii).

The same morpheme boundary notation is used in the IMT, except that the translation of an infix is moved to just before the base. However, the IMT also notates grammatical categories that are expressed by nonconcatenative morphology in the object language, such as transfixes, suppletion, subtraction and other types of base modification. The IMT also notates cumulation, that is, the expression of more than one grammatical category by a single morpheme in the object language (e.g. 'first person plural past perfect'); and "false cumulation", that is, the translation of an object language morpheme by more than one English word because English lacks a one-word translation (e.g. Spanish *buscar* and its English translation 'look for').

The best practice for notating these mismatches in form and meaning in the Leipzig Glossing Rules are given below:

\   base modifications of all kinds
.   cumulation; conventionally, a period is not used between person and number (e.g. 1PL)
>   portmanteau morpheme expressing one person acting on another (e.g. 1PL>3SG); this is a special case of cumulation
_   "false cumulation" (e.g. look_for)

In actual practice, the period is often used for all of these form-meaning mismatches. Nevertheless, it is valuable to distinguish the different types of form-meaning mismatches, so best practice is encouraged here.

The last line gives the "free" translation of the object language example. This translation essentially gives you the meaning of the example, ideally both the information content (meaning in the traditional sense of who did what to whom, when and where etc.) and the information packaging. In effect, the language of the translation, in this book English, acts as the **metalanguage** to represent the meaning of the object language examples. English (or other languages used in language descriptions written in French, Spanish, Russian, Japanese etc.) is not always the best metalanguage. English, and the other languages used in translations, does not always make lexical or grammatical semantic distinctions that are found in the object language, and sometimes the metalanguage's way of representing the information packaging in the object language is not always clear, or not carefully replicated by the author. A language description should provide careful translations of object language examples, based on an understanding of semantics and information packaging in the metalanguage used as well as in the object language. This is not always the case; so translations, while the only thing we can go on unless the author provides a discussion of the meaning of the example, must be used with reasonable caution when analyzing an unfamiliar language.

In sum, the three lines in an example like (22) gives the grammatical structure of the object language sentence, the semantic analysis of the parts of the object language sentence, and the semantic structure (including information packaging) of the whole sentence respectively.