PART I

Introduction

1 Grammatical Constructions, Semantic Classes, and Information Packaging

1.1 What Is Morphosyntax?

The term **morphosyntax**[1] 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 meaning (elusive as that meaning sometimes is). Therefore, morphosyntax is the analysis of 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 examples of the English Numeral Modification Construction in (1):

(1) *English Numeral Modification*:
one tree
two tree-s
three tree-s
etc.

The English Numeral Modification Construction involves both syntax – the order of numeral and noun – and morphology – the form of the noun, singular or plural. A description or analysis of the English Numeral Modification Construction must include reference to both: the relative position of numeral and noun, and the inflection of the noun for number. A construction is often represented schematically, in this case as [NUM NOUN-NMB]: the labels NUM, NOUN, and -NMB represent categories of words (*one, two, three*, etc., for NUM; *tree, bush* etc. for NOUN) or bound morphemes (-NMB for the number suffix). NUM, NOUN and -NMB are also described as **roles** in the construction (Croft 2001:11, 24, 175–76, drawing on unpublished work by Paul Kay; also called a 'function' or 'slot').

[1] Technical terms used in this textbook are introduced in boldface; they are listed by section at the end of each chapter, and defined in the online Glossary.

Of course, some constructions in languages seem to involve "only syntax": order and grouping of words. Other constructions seem to involve "only morphology": the inflectional forms of words, for example.

Another reason to combine syntax with morphology is that bound morphemes almost always originate in free words that originally combined with other words into constructions. Those constructions were reduced by the process of **grammaticalization** (see section 2.3). An example of grammaticalization in progress in English can be seen in the contracted forms of auxiliaries and negation: *will not* > *won't*, *I am* > *I'm*, etc. As a result, we will see the same sorts of meanings and semantic combinations in stem+inflection combinations that we also find in multiword constructions. In fact, it is sometimes difficult to draw the line between syntactic constructions and morphological constructions: language change, including grammaticalization, is gradual.

The English Numeral Modification Construction does not consist solely of a morphosyntactic form. The construction also conveys a **meaning** – that is, **semantic content** or **information content**. The noun denotes a set of individuals of the noun category (a set of trees), and the numeral specifies the cardinality of that set (one, two, three, etc.). In addition, the information is **packaged** so that the construction as a whole denotes the set of the trees, and the specific number of trees is secondary information added about the set. The English Numeral Modification Construction contrasts with a sentence such as *The trees number fifteen*, in which the number of trees functions as the primary information, predicated of the trees. An important hypothesis of this book is that (morpho) syntactic constructions not only communicate meaning (information); they also **package** that **information** in different ways for the purposes of communication. The modification function illustrated in (1) is an example of information packaging; see sections 1.3 and 1.5.

The focus of this textbook is primarily on **syntax** – that is, **how words are put together into utterances, and what those combinations of words mean**. 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, conjugational or declensional classes, and word formation (for morphology, see Haspelmath and Sims 2010; for word formation, see Štekauer, Valera, and Körtvélyessy 2012). Our focus will be on morphology that serves syntax.

Another reason for the focus on syntax in this textbook is that much of the description of morphological meaning is typically covered in courses on 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. Nevertheless, there will be a significant amount of discussion of semantic content in this textbook, since semantics plays a major role in shaping morphosyntax.

This textbook proceeds from three basic assumptions about the analysis of morphosyntax. The first is that the proper unit for grammatical analysis is a

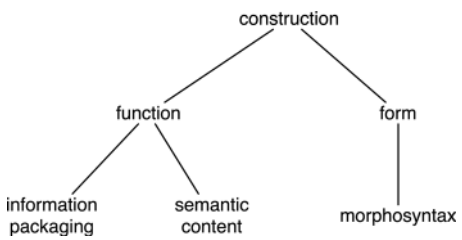

Figure 1.1 *The basic structure of a construction*

(morphosyntactic) construction, such as the numeral modification construction described above. The second assumption is that one must always investigate a construction with respect to how its morphosyntactic **form** expresses its **function**, which in our analysis includes both meaning and information packaging.

These two assumptions are shared by **construction grammar** (Fillmore, Kay, and O'Connor 1988; Goldberg 1995, 2006; Croft 2001), and the second assumption is characteristic of **functionalist** theories of grammatical structure (e.g. Givón 2001a,b). The basic structure of a construction is presented in Figure 1.1. In the contemporary construction grammar approach, constructions include single-word constructions, such as the construction consisting of English noun stems plus their inflection for number in (1). In fact, a construction is any conventionalized pairing of form and function. Reasons for using a constructional approach will be discussed in section 1.2. The basic analysis of the functions of constructions is outlined in section 1.3.

The third assumption is that one must always examine how the morphosyntactic expression of a function varies across languages. The third assumption, combined with the first two, is the hallmark of **linguistic typology**. Linguistic typology is the study of the diversity of languages across the world, and universals that structure that diversity. Linguistic typology has primarily, though not exclusively, examined the diversity of grammatical structures in the world's languages. In fact, much of the content of this book describes the results of more than half a century of research on crosslinguistic variation and universals of grammatical structure.

There are several reasons for taking a typological approach. The study of syntax should, and must, be inclusive – that is, accommodate the diversity of grammatical structures in all languages from all cultures. Perhaps most importantly, we can understand why grammatical structures are the way they are, even in a single language, only by placing them in the context of patterns of global syntactic diversity. Also, even a single language contains variation, and all languages are changing all of the time. The way a language varies and has changed, and will come to vary and change, is an instance of the crosslinguistic variation and change that is described in this textbook. The basis for doing crosslinguistic comparison is discussed in section 1.4, and some basic concepts for crosslinguistic comparison, also known as comparative concepts, are introduced in section 1.5.

The relationship between grammatical – i.e. morphosyntactic – form and the function expressed by that form is a very complex one. There is no simple one-to-one mapping between the function to be expressed and the morphosyntactic structure of an utterance. This poses major challenges in organizing a textbook such as this one. The primary reasons for this complexity are given in sections 2.3–2.4. The motivation for the organization of this textbook will be presented in this chapter and Chapter 2.

1.2 Why Constructions?

In this section, we will discuss some of the reasons for adopting the constructional approach. To do so, however, we must first discuss word classes, and their relationship to semantic classes on the one hand, and constructions on the other (a more detailed discussion can be found in Croft 2001, chs. 1–2).

1.2.1 Word Classes and Semantic Classes

Most descriptions of both familiar European languages and less familiar languages from other parts of the world use **word class** terms, also known as parts of speech or syntactic categories, as a means to capture morphosyntactic patterns: 'Parts of speech tell us how a word is going to function in the sentence' (Carnie 2013:44). 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. Many other word classes have also been proposed by linguists, recently and not so recently. However, problems with the use of word classes to capture grammatical patterns arise when facing the grammatical diversity found across the languages of the world.

When one reads grammatical descriptions of lesser-known and previously undocumented languages (and even of better-known languages), one often finds that word class terms are used in confusing and seemingly conflicting ways, as seen in the quotations from reference grammars found in (2a–d):

(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)

These quotations challenge students and scholars who are using reference grammars in order to understand syntax across languages, or to analyze particular constructions. For the most part, these problems are not due to unsatisfactory or inconsistent application of syntactic analysis to these languages by the authors. They are basically due to problems with using word class terms to describe how words are used in grammatical constructions.

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), appear puzzling at first. What is meant by 'Word class X is word class Y'? These statements are meant to be interpreted as follows, 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 a single word class in Sidaama.

That is, the terms 'adjective' and 'numeral' in (2a–b) are being used to refer to **semantic classes** of lexical concepts – translation equivalents – in these quotations: numeral concepts and property concepts, respectively. The same is true of 'noun' in the second statement about Iñupiaq in (2b), where 'noun' refers to object concepts (persons and things). It is also true of the statement about 'adjectives' in (2c): (2c) means that the Mamainde translation equivalents 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.

On the other hand, the term 'adjective' in (2a), 'noun' in the first and third statements in (2b), and 'verb' in (2c) are being used to describe a syntactic category (a word class). What is intended can be determined by looking at more careful statements like the second statement in (2b), 'numerals behave like nouns,' or the statement in (2c), 'adjectives are encoded as verbs.' In these statements, 'noun' and 'verb' still are being used to express semantic classes of words (object concept words and action concept words, respectively). But these assertions more clearly state that words of two different semantic classes belong to a single word class.

The statement in (2d) is also confusing. The term 'adjective' in (2d) is not referring to the semantic class of property concepts. The paraphrase 'Acehnese has no property concepts' would be nonsensical; every language has a way to express property concepts. Even so, (2d) is not entirely straightforward to interpret. What (2d) means is that property concept words in Acehnese do not form a distinct word class – not unlike the assertions in (2a–c).

Because 'noun,' 'verb,' and 'adjective' are used to mean different things, there are two terminological problems that give rise to confusion. The first is that the same term is being used for a syntactic category – that is, a class of words defined by their syntactic patterning – and for a semantic category, or, more precisely, a class of words determined by their meaning. In the case of 'adjective,' there exists a distinct term for the semantic class, namely 'property (concept),' although this term was not used in any of the descriptions in (2). The use of 'adjective' in (2a), (2c), and (2d) is, at best, confusing – and a more suitable term is available, namely 'property concept words.' For example, (2c) could be rephrased as 'property concept words are encoded as verbs.'

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). There is no widely accepted distinct pair of terms for the syntactic category and the semantic category when it comes to 'numerals.'

Unfortunately, both of these terminological 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 – 'property' – for semantic classes, and grammatical terms – 'adjective' – for syntactic categories. We will consistently distinguish terms for semantic categories and terms for grammatical (morphosyntactic) categories in this textbook.

A solution to the second problem commonly 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 (for additional rules of thumb for naming language-specific word classes, see Croft 2016a).

1.2.2 Word Classes and Constructions

In the preceding section, I was deliberately vague about what a 'word class' or 'syntactic category' actually is: it was described as 'a means to capture morphosyntactic patterns,' 'how words are used in grammatical constructions,' and as 'defined by their syntactic patterning.' In this section, I will be more precise about what a word class – or, more generally, a syntactic category – is. We will also discuss two important consequences of the definition.[2]

In linguistic analysis, word classes are defined not by their semantics but by their **occurrence in constructions** – more precisely, a word's occurrence in a particular role in a construction. For example, English Adjectives such as *tall* are defined not as words denoting property concepts like height, but instead in terms of their occurrence in certain English constructions:

(3)
a. as modifiers of nouns: *a **tall** tree*
b. as the complement of a copula *be* in predication: *That tree **is tall***
c. they inflect in a certain way (a morphological construction): ***tall-er**, **tall-est***
d. they can in turn be modified by certain degree expressions: ***very tall**, **a little tall***).

[2] How word classes are defined, and the consequences of how they are defined, are discussed in detail in Croft (2001, chs. 1–4).

The term 'word class' presupposes that the linguistic units defined by occurrence in constructions are always words. This is not the case, however. Any type of syntactic unit can be defined in terms of occurrence in constructions. For example, an English Subject Phrase is defined by occurrence in certain English constructions, for example those in (4a–b):

(4) a. Occurs in immediate preverbal position in an Active sentence: ***John*** *congratulated Mary.*
b. Controls the form of the Verb or Auxiliary: ***You are*** *tall* vs. ***She is*** *tall.*

Also, a morphological form smaller than a word, such as a root or a stem, is defined by its occurrence in morphological constructions (sometimes called 'morphological categories'). For example, (regular) English Verbs are defined by their occurrence in morphological constructions such as Third Person Singular Present [__-*s*], Past [__-*ed*], Participle [__-*ing*], and so on. (More abstract descriptions of the constructions would be necessary to include morphologically irregular English Verbs such as *is/are/was/were/being.*) Thus, the comments in this section about 'word classes' are generalizable to syntactic categories that may be larger units than a word or smaller units than a word.

The constructional basis of word classes or syntactic or morphological categories is often obscured by the terms used in syntactic analyses. The construction(s) 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). The pattern of occurrence of words in certain constructions and not others are said to be the words' '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).

There is a major shortcoming in using word classes and other syntactic categories for a crosslinguistic approach to morphosyntax – this is the first consequence of the definition of word classes alluded to at the beginning of this section. The constructions defining a word class of a language are also constructions of that language. English Adjectives are constructions of English, not of Sidaama, Iñupiaq, Mamainde, or Acehnese. So English Adjective is an English word class; the other languages have their own word classes, defined by their own constructions. If so, then how can we compare English syntax to the syntax of Sidaama, Iñupiaq, Mamainde, or Acehnese?

All hope is not lost. Just as one can compare words that are translation equivalents across languages, one can compare functionally equivalent constructions across languages. For example, for *tall tree*, we could compare the functional equivalents in other languages of the construction illustrated for English in (3a) – namely, the function of modifying a referent. And we can compare word class membership across languages by identifying the semantically equivalent words that occur (or do not occur) in the functionally equivalent

constructions in question – for *a tall tree*, a property word meaning 'tall' and an object word meaning 'tree.' In this way, one can, for example, compare the constructions used for modification across languages, and observe how property concept words and other semantic classes of words are used in those constructions. This is a fundamental characteristic of a constructional and typological approach to syntactic analysis: using function to identify equivalent constructions and equivalent classes of words across languages. The quotations in (2) show that the mapping between words (translation equivalents) and the constructions (functional equivalents) they occur in varies in complex ways across languages.

There is another wrinkle that has to be addressed before going on, however – this is the second consequence of the definition of word classes (and other syntactic categories). We assumed above that English Adjectives are defined by their occurrence in four constructions – (3a) through (3d) above – not just one. But not all English Adjectives that occur as modifiers – the construction in (3a) – also occur in the other three constructions (and vice versa). Compare *tall* to *alive* in (5), *entire* in (6), *intelligent* in (7), and *even* in (8):

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

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

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

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

In other words, the different constructions in (3a–d) do not define a single word class of English Adjectives, as shown in (5)–(8). Instead, each construction defines its own distinct word class. Of course, in this case, the word classes overlap; but they cannot be equated without losing important information about the syntax of English. In other words, the mapping between words and constructions in even a single language varies in complex ways.

Again, all hope is not lost for finding patterns, and even crosslinguistic universals, in this variation. If we recognize that the basic fact is the (complex) mapping between words and their occurrence in constructions – that is, the role a word fills in a construction – then we can look for patterns and explanations for those patterns in **the mapping between words and the relevant roles in the constructions**. For example, a straightforward explanation for the unacceptability of *even* in the degree modifier construction in (8b) is the semantic