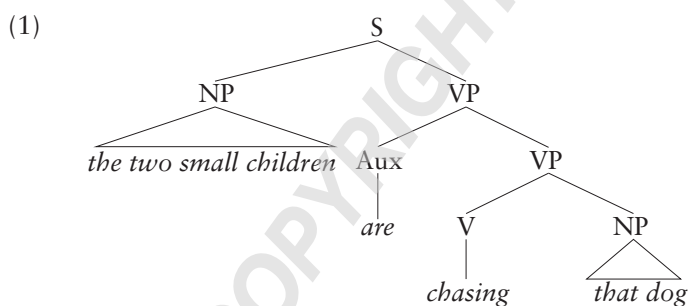


# 1 Nonconfigurationality

One fundamental problem for the design of universal grammar is the great variability in modes of expression of languages. Languages differ radically in the ways in which they form similar ideas into words and phrases. The idea of two small children chasing a dog is expressed in English by means of a *phrase structure* in which conceptual components of the whole – the concept of the two small children and the concept of the dog being two such components – correspond to single phrases. Phrases are groups of contiguous words that are units for substitutions, remain together as units under stylistic permutations and paraphrases of a sentence, constrain the pronunciation patterns of sentences, and are subject to ordering constraints relative to other words and word groups. The (simplified) phrase structure of an English sentence is illustrated in (1):<sup>1</sup>

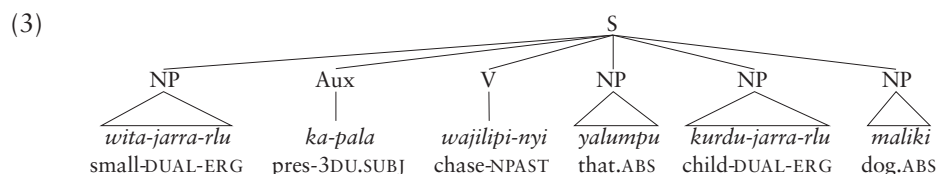


<sup>1</sup> For simplicity, the root node in (1) bears the traditional label S (“sentence”), instead of a symbol for a phrasal projection, such as IP (“inflection phrase”). For English, S will be replaced with IP later. More generally, in Parts I and II of this book (Chapters 1–5), the particular categories labeling the nodes of phrase structure diagrams play very little role. The traditional notions of “clause” and “nominal” are assumed, but whether a clause is labeled S, IP, or CP and whether a nominal is labeled NP or DP have little consequence, until the theory of phrase structure categories is presented in Part III, Chapter 6. There a distinction is drawn between endocentric (headed) IP clauses in languages such as English and exocentric (headless) S clauses found in many other languages.

In this structure, the word combinations *the two small children* and *that dog* are noun phrases (NPs), in which the words cannot be separated, and there is also a verb phrase (VP). When the phrases are freely broken up, the result is ungrammatical or different in meaning:

- (2) a. \**The two small are chasing that children dog.*  
 b. \**The two small are dog chasing children that.*  
 c. \**Chasing are the two small that dog children.*  
 d. \**That are children chasing the two small dog.*

The simple correspondence between conceptual units and grammatical phrases seems so natural to the English speaker as to appear a necessary feature of language itself – but it is not. Consider Warlpiri, a language of the people who have inhabited Australia since long before the colonization of that continent by English speakers.<sup>2</sup> Example (3) shows the phrase structure of a Warlpiri sentence expressing the same idea as the English sentence (1).<sup>3</sup> But in Warlpiri, every permutation of the words in the sentence is possible, with the same meaning, so long as the auxiliary (Aux) tense marker occurs in the second position. In particular, the word orders of all the bad English examples in (2) are good in Warlpiri.



It is not true that Warlpiri lacks phrases altogether: syntactic analysis has shown that some phrases (NPs but not VPs) do optionally occur, and there is evidence for a somewhat more articulated clause structure including a focus position to the left of Aux.<sup>4</sup> What appears to the left of Aux may be a single word, as in (3), or a single multi-word NP, which then allows the nonfinal case-marker to be omitted, as in (4):

- (4) *Kurdu-jarra(-rlu) wita-jarra-rlu ka-pala maliki wajilipi-nyi.*  
 child-DUAL(-ERG) small-DUAL-ERG PRES-3DU.SUBJ dog.ABS chase-NONPAST  
 “The two small children are chasing the dog.”

<sup>2</sup> See Dixon (1981) on the history and nature of Australian languages. Of the English colonization of Australia he writes, “I have chosen to write plainly, to talk of the white ‘invasion’ of Aboriginal Australian lands, avoiding euphemisms such as ‘settlement’, and not to gloss over murder – of people, tribes, and languages” (Dixon 1981, p. xiv). The Warlpiri grammatical phenomena discussed here come from Hale (1981) and Simpson (1983a, 1991).

<sup>3</sup> Note that the tree structure in (3) is oversimplified for expository purposes. Compare it with the phrase structure typology in Chapter 6 and the analysis of Wambaya in Chapter 7.

<sup>4</sup> See Austin and Bresnan (1996) and Simpson (2007) for details.

But crucially, the sole item appearing to the left of Aux cannot be a VP, nor is there any other evidence that VP is ever a phrasal constituent in Warlpiri.<sup>5</sup> The subject of a Warlpiri sentence is not identified by its position in the phrase structure, as it is in English, but rather by the appearance of the ergative case marker *-rlu*. More generally, phrases are not essential to the expression of conceptual units. The coherence of a conceptual unit in Warlpiri is indicated by means of word *shapes* rather than word *groups*: noncontiguous words that form a conceptual unit must share the same formal endings – case and number morphology. In (3) the word for ‘small’ shares the dual and ergative endings *-jarra* and *-rlu* with the word for ‘child’ which it modifies, and these endings differ from those of the words for ‘dog’ and ‘that’, which are null. Thus the words *kurdu-jarra-rlu* (‘child-DUAL-ERG’) and *wita-jarra-rlu* (‘small-DUAL-ERG’) jointly express the concept of ‘two small children’ and jointly serve as subject of the sentence – regardless of whether those words appear together as a constituent (as in (4)) or not (as in (3)).

This difference between Warlpiri and English exemplifies a broad crosslinguistic generalization observed by many students of linguistic typology: across languages, there often appears to be an inverse relation between the amount of grammatical information expressed by word structure and the amount expressed by phrase structure. Words must appear in a sequence since they cannot be pronounced simultaneously, so the relative order of words is generally available as one means of expressing the grammatical relationships necessary for communication. But some languages lack the rich word structure found in languages such as Warlpiri. Thus languages rich in word structure (morphology) may make more or less use of fixed phrase structure forms (syntax), whereas languages poor in morphology overwhelmingly tend to have more rigid, hierarchical phrase structures. This trade-off between morphology and rigid phrase structure is spectacularly illustrated by some of the radically nonconfigurational languages of Australia, but there is evidence for it also in the other language types we will examine in Part III. We can summarize this generalization with the slogan “Morphology competes with syntax” for the job of expressing the grammatical relations between words.

The idea that words and phrases are alternative means of expressing the same grammatical relations underlies the design of LFG and distinguishes it from other formal syntactic frameworks. In addition, we cannot discount the effect of “configurational bias.” Through historical accident, the resources of modern science and technology have been dominated by states whose national languages happen to be highly configurational. As a result, there has been a vast lack of knowledge of

<sup>5</sup> The Aux in Warlpiri generally follows the first phrase of the sentence; the parts of a noun phrase can appear together in this position, but not the parts of a verb phrase. See Simpson (1991, 2007), Austin and Bresnan (1996), and Nordlinger (1998a) for more detailed discussion. With special articulation of discourse information structure, multiple noun phrases may appear, but never a verb phrase (Legate 2002; Laughren 2002). These facts are consistent with the constituent structure theory developed in Chapter 6 and in Simpson (2007).

typological variation of language within the scientific establishment in computer science, logic, and philosophy – and even among many theoretical linguists of a formal bent.

Although Warlpiri lacks English-style phrase structure, and English lacks Warlpiri-style case and agreement forms of words, there is evidence that they have a common organization at a deeper level than is apparent from their differing modes of expression. Similar conceptual units are expressed by the two languages – objects and their relations and motions, events and their participants, and human emotions, actions, and aims. And at an appropriate level of abstraction, similar grammatical constraints emerge.<sup>6</sup> For example, in English, a reflexive pronoun can be an object coreferring with the subject, but cannot be a subject coreferring with the object:

- (5) a. *Lucy is hitting herself.*  
 b. *\*Herself is hitting Lucy.*

The same is true in Warlpiri:

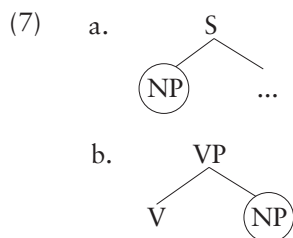
- (6) a. *Napaljarri-rli ka-nyanu paka-rni.*  
 Napaljarri-ERG PRES-REFL hit-NONPAST  
 “Napaljarri is hitting herself.”  
 b. *\*Napaljarri ka-nyanu paka-rni.*  
 Napaljarri.ABS PRES-REFL hit-NONPAST  
 “Herself is hitting Napaljarri.”

This constraint holds in Warlpiri whether or not the subject is discontinuous. Indeed, this grammatical constraint on reflexive pronouns is shared by many languages (see Chapters 10 and 11 and references).

Thus, while phrase structure does not universally correspond to conceptual structure, the more abstract grammatical functions it expresses – such as subject and object – are widely shared by different languages. These grammatical functions represent classes of varying forms of expression that are equivalent under the correspondence mappings to argument structure (discussed below).

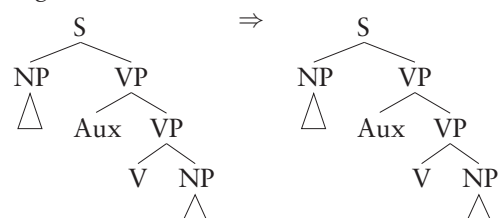
Here is the first choice point in the design of universal grammar: how to capture the abstraction of grammatical functions, such as subject and object, across the rather different means of expressing them? The overwhelmingly predominant tendency in modern linguistic theory – due to Chomsky – has been to define them as the familiar configurations of English phrase structure: the subject is an NP in configuration (7a), and the object is an NP in configuration (7b):

<sup>6</sup> The following illustration is from Simpson (1983a); see also Hale (1973).

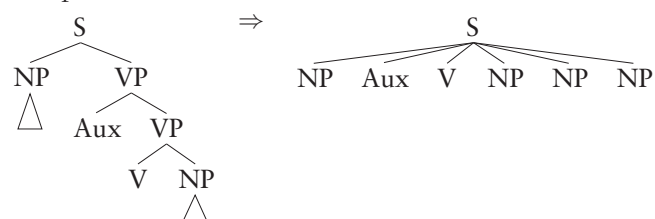


For a language like Warlpiri, this choice amounts to the claim that it does have English-style phrase structure after all – not on the surface, where conditions on word order hold, but at an underlying level of representation at which the grammatical conditions on reflexive pronouns hold.<sup>7</sup> Let us refer to this as the *configurational design of universal grammar*. It is illustrated in (8)–(9):

(8) English:



(9) Warlpiri:



Under the assumption of the configurational design of universal grammar, a reflexive pronoun must satisfy the following grammatical condition on the underlying level of structure: the reflexive must be contained in a constituent that

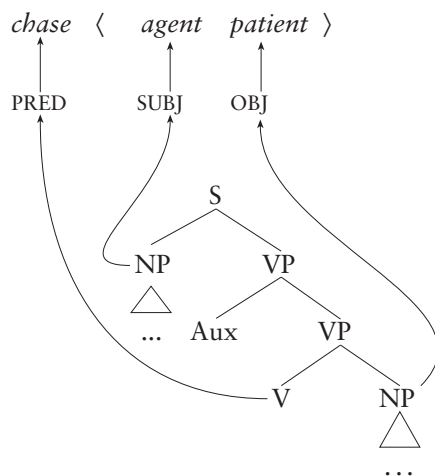
<sup>7</sup> This hypothesis has taken several forms. One is that the underlying structure is a deep structure, which undergoes transformational “scrambling” rules to derive the modes of expression peculiar to Warlpiri (Hale 1973). But as Hale (1994) points out, the complete absence of movement rules elsewhere in Warlpiri renders this hypothesis unattractive. Another is that the underlying structure is a “lexical structure” which is not transformationally related to the surface forms but represents the universal component of Warlpiri grammar in the phrasal forms of English (Hale 1983). This view has been criticized by Speas (1990) for adopting different theories of grammar for different language types, and has subsequently been abandoned by Hale (1994). A third and more recent form of the hypothesis, based on work by Jelinek (1984) and Baker (1991), assumes that overt NPs are not arguments but adjuncts to incorporated pronouns; see Austin and Bresnan (1996), Nordlinger (1998a), and Croft (1997) for criticism of the latter hypothesis.

contains the verb also but not the antecedent of that pronoun; that constituent is the VP. Using the graphic representation of the tree diagram, this means that the antecedent must be “higher” in the tree than the pronoun that it binds. Hence a subject can bind an object but an object cannot bind a subject, whether in English or Warlpiri, as we saw in (5) and (6). This is one approach to capturing the similarity between the two languages – but is it the right approach?

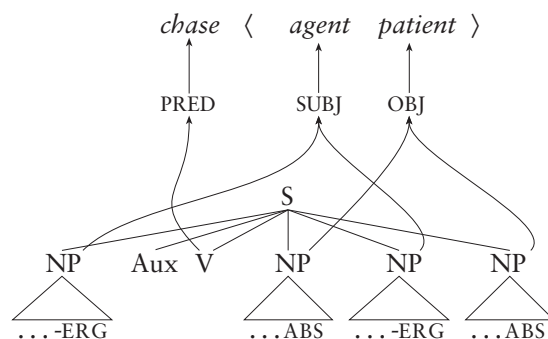
Now it might be true that all languages do have an abstract level of grammatical structure which closely matches the surface organization of the grammars of English and other European languages. (Perhaps it just happens that the biologically based universal design of grammar really does have the form of the language of the colonizers.) But there is no evidence of this; for example, none of the properties of phrases that we mentioned – contiguity under permutation, grouping for pronunciation, ordering relative to other elements, and substitutability – supports the existence of a VP in Warlpiri, and what evidence there is for phrases in Warlpiri shows clearly that there is no VP in our original sense (as discussed in the references previously mentioned: Simpson 1983a, 1991, 2007, Austin and Bresnan 1996, and Nordlinger 1998a). Moreover, there is evidence that the constraints on reflexive pronouns depend not directly on phrase structure configurations but on factors such as predication relations, which are at best only partially reflected in phrase structure configurations (see Kroeger 1993, Manning 1996, Wechsler and Arka 1998, and Part IV of this book). Therefore the “deep” or underlying VP that must be postulated in (9) is devoid of the original constituency properties of VPs.

Hence, an alternative taken in the development of LFG is to choose a more abstract representation of the grammatical functions subject and object, one which is neutral between the differing modes of expression of languages. On this alternative, grammatical functions are not reducible to phrase structure configurations as in (7); they are classes of differing formal expressions that are mapped into argument structure in equivalent ways. Thus we have a differing picture of the grammatical structures of English and Warlpiri:

(10) English:



(11) Warlpiri:



In this design, the grammatical functions subject and object are equivalence classes that serve as the relators, or “links,” between two formally different, parallel structures: (i) the *argument structure*, which includes the participants in events and situations, and the relations between those participants, that are grammatically expressed; and (ii) the *expression structure*, which consists of the modes of expression of the language, represented as a constituent structure (tree). Returning to our example of the reflexive pronouns, the grammatical conditions are now stated directly in terms of those grammatical functions: whether in English or Warlpiri, the subject (SUBJ) can bind the reflexive object (OBJ) but not vice versa. The languages differ, however, in the way those grammatical functions are expressed. While phrase structure configurations distinguish the subject and object functions in English, the case inflections – erg(ative) and abs(olutive) – distinguish the same functions in Warlpiri. These functions differ overtly, as we have seen, but they show a similar system of correspondences to the argument structure. The system of functions that relates these two structures has been mathematically modeled by the *functional structures* of LFG (Chapter 4). Let us refer to this as the *relational design of universal grammar*.

Does this choice of representations for grammatical functions make any difference, or are they just notational variants? In fact, there are interesting empirical consequences of the choice of design. The configurational design implies that specific elements of phrase structure – NPs, VPs, and their relations – appear not only in representing the modes of expression of English and similar European languages, but also in representing deeper aspects of grammatical organization – the abstract syntactic functions and the semantic predicate argument structures of all languages. The relational design, in contrast, implies that it is the distinctive structure of predicators and arguments and their grammatical functions that are relevant at the deeper levels. In the course of this book, we will see many cases where these two designs lead to divergent expectations about the grammars of human languages.

In conclusion, an important source of empirical motivation for the relational design of universal grammar adopted by LFG is the existence of phrase structure nonconfigurationality. Although various degrees of nonconfigurationality occur

across languages, as we will see in Part III, a number of the Australian languages are among the best exemplars of the phenomenon (Simpson 1991, 2007; Austin and Bresnan 1996; Nordlinger 1998a). This nonconfigurationality is possible because the same grammatical information can be specified by word *shapes* as by word *groups*; the functional structure of LFG characterizes this grammatical information in an abstract, neutral way, without configurational bias. Thus in “lexical-functional grammar” the term “lexical” refers to the fundamental fact that words, or lexical elements, are as important as syntactic elements in expressing grammatical information, and the term “functional” refers to the fact that this grammatical information is not identified with particular structural forms of expression, but is viewed as a system of abstract relators of expressions to eventualities.

## Further reading

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For further readings that examine the evidence and issues of nonconfigurationality in more detail, Austin and Bresnan (1996), Nordlinger (1998a), and Simpson (2007) are recommended as particularly accessible.