

## 6 *Patterns of sentence stress*

At the beginning of the book I proposed that the phenomena of intonation can be understood as involving two essentially orthogonal dimensions, which I referred to as ‘pitch’ and ‘prominence/phrasing’. In the preceding three chapters we have considered in some detail various aspects of the description of pitch patterns. In this and the remaining two chapters we now go on to discuss the treatment of prominence and phrasing in an AM theory of intonation. Roughly speaking, in this chapter we consider the relations between sentence-level prominence (or sentence stress) and focus – which words in a sentence are prominent and why – and in the next we consider the specifically phonological aspects of sentence-level prominence. In the final chapter we discuss prosodic phrasing. By the end of the book I hope to have motivated the basic division of intonation into pitch and prominence/phrasing, and in particular to have shown why it is appropriate to regard ‘prominence’ as just one of several phenomena that can be accounted for by an adequate ‘metrical’ theory of prosodic structure.

### 6.1 Sentence stress and broad focus

It is now generally accepted that the pattern of sentence stress in an utterance reflects the utterance’s intended focus, but there is a good deal of disagreement and confusion about just how it does this, and about what ‘focus’ actually involves. Much of the disagreement and confusion is about issues in syntax and semantics, not phonology, which makes it difficult to do justice to the whole question without straying fairly far from the announced topic of the book. However, the key phenomenon, which I will refer to here as *broad focus*, has clear implications for intonational phonology. In order to be able discuss the phonological questions without treating the syntactic and semantic issues too cavalierly, I will introduce the general problem of broad focus informally through a series of simple examples.<sup>1</sup>

#### 6.1.1 ‘Normal stress’ or ‘highlighting’?

Consider the phrase *five francs*. This could be used in a specific context where the number of francs was at issue, in which case we may say that the focus is on *five*:

(6.1) I didn’t give him three francs, I gave him five francs.

In this case, there would normally be a pitch accent on *five* and none on *francs*, and thus a direct relation between accent and focus. A simple notation for this pattern is *FIVE francs*. The same phrase could also be used in a context where the unit of currency was at issue, in which case we may say that the focus is on *francs*:

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<sup>1</sup> As noted by Beaver et al. (2007), there is an increasing divide between those who study the syntactic/semantic issues surrounding focus and those concerned with phonological and phonetic questions. My discussion here may strike some as symptomatic of this state of affairs.

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(6.2) I didn't give him five pounds, I gave him five francs.

In this case there would often be a prominent accent on *francs*, and either no accent on *five* or only a weak one. Once again there is a direct relation between accent and focus, and we can notate this pattern informally as *five FRANCS*. (As we shall see in chapter 7, there is an important question about what happens phonetically on *five* in this case.)

Finally, in relatively unusual circumstances there is also what we might call a 'double-focus' pattern, with very prominent accents on both *five* and *francs*. This might be found in very deliberate speech in a context like (6.3):

(6.3) I didn't give him SEVEN EUros, I gave him FIVE FRANCS.

The first clause of this example – *I didn't give him seven euros* – also illustrates a basic feature of pitch accents, namely that when a pitch accent occurs on a word containing more than one syllable, the accent occurs on the lexically stressed syllable of the word (*se-* of *seven* and *eu-* of *euros*).

In all these cases there is a direct relation between accent and focus: individual words are highlighted both phonetically and pragmatically. However, sentence stress cannot always be explained so straightforwardly. In addition to the three fairly specific contexts just sketched, it is also possible for the phrase *five francs* to be used in a wide variety of other contexts in which the focus is not on either word alone but as it were on the whole phrase:

(6.4)

|                   |                |                           |
|-------------------|----------------|---------------------------|
| I didn't give him | a dollar       | , I gave him five francs. |
|                   | fifty centimes |                           |
|                   | my notebook    |                           |
|                   | your camera    |                           |
|                   | the car keys   |                           |
|                   | a sandwich     |                           |
|                   | a lot of money |                           |

This is clearly distinct in meaning or function from any of the first three examples. In those cases one or both of the words in the phrase *five francs* is contrasted to other possible words from fairly specific sets of numbers and currency names; here, the phrase *five francs* is contrasted *as a unit* to some other phrase from a more or less unlimited set of possibilities. This difference appears to justify distinguishing 'narrow focus' on a single word, as in (6.1) or (6.2), from 'broad focus' on a larger constituent as in (6.4).

Issues surrounding broad focus have been at the centre of debates about the description of sentence stress for well over half a century. The problem is as follows. Despite the clear meaning difference, the sentence stress pattern that signals broad focus on the larger constituent in (6.4) is similar or identical to the pattern that signals narrow focus on the single word *francs* in (6.2). That is, sentence stress involves an asymmetry: when the main accent is on *five*, the intended meaning is narrow focus on *five*, but when the main

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accent is on *francs*, the intended meaning can be either narrow focus on *francs* or broad focus on the whole phrase. If the sentence is intended to convey focus on a whole phrase or constituent, on what basis is a single word selected to bear the main accent?<sup>2</sup>

In the 1950s and 1960s the lines were drawn between two distinct and competing approaches to broad focus, which we might call the normal stress view and the highlighting view. The normal stress view goes back at least to Newman (1946). It was dominant, at least in American linguistics, until the 1970s, finding perhaps its definitive expression in the Nuclear Stress Rule of Chomsky and Halle (1968: ch. 3), and it still informs some mainstream work such as Cinque (1993) and especially Zubizarreta (1998). According to this view, there is one pattern of prominence ('normal stress') that can be specified by rule for every sentence. This pattern assigns a single most prominent stress – primary stress – to one word in the sentence. Normal stress has no meaning or function: it is simply the result of the operation of phonological rules on surface syntactic structures. Any deviation from normal stress, on the other hand, involves 'contrastive stress', which signals some sort of contrast or emphasis on the stressed word. Contrast or emphasis is essentially unpredictable and beyond the scope of linguistic rules – in the terms we used in chapter 1, it is paralinguistic.

The highlighting view was forcefully championed by Bolinger (e.g. 1958, 1972b), and was later enthusiastically taken up by Chafe (e.g. 1976) and by other broadly 'functionalist' researchers. Bolinger argued that words – any word in any utterance – can be 'focused' or 'highlighted' to signal newness, contrast, or some other special informativeness, and that focused words are marked by pitch accents. All pitch accents are individually meaningful, and no one of the pitch accents in an utterance is primary. There is thus no sharp divide between 'normal' and 'contrastive' stress: normal stress is merely one end of a continuum of informativeness. Bolinger explicitly rejected the idea that one particular pattern of pitch accents is assigned by rule, and argued that the use of pitch accents is guided by 'interest' and 'power', factors that are, in the terms used here, paralinguistic: what speakers decide to highlight is not a matter of grammar but a matter of what they are trying to say on a specific occasion in a specific context. His view of the attempt to provide linguistic rules for sentence stress was succinctly summed up in the title of his paper 'Accent is predictable (if you're a mind-reader)' (1972b).

In some cases a plausible account of broad focus can be cast in terms of the highlighting of individual words. For example, in a sentence like *He went on FOOT*, we can easily

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<sup>2</sup> The terms broad and narrow focus were suggested in Ladd 1980a: ch. 4, but were not used in exactly the way just illustrated. Originally 'broad focus' was intended primarily as 'focus on the whole utterance' – a replacement, as we shall see shortly, for the earlier term 'normal stress'. However, it now seems clear that the important difference between broad and narrow is a matter of degree: focus can apply to constituents of any size, from individual morphemes such as prefixes to whole clauses or sentences. Sentence (6.4), for example, clearly expresses a contrast between the phrase *five francs* and one of the corresponding phrases in the first half of the sentence (*a sandwich, the car keys*, etc.), and for that reason seems like 'narrow' focus. Crucially for the discussion here, though, the broad focus problem is still present, because the contrast applies to a whole constituent rather than a single word, and only one word in the contrasted constituent can bear the main accent.

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argue that *foot* is the key to the meaning of the sentence, and that, given *foot*, the verb form *went* is very largely predictable. This is true whether the context is *He left the car and went on foot* (in which case we might speak of focus on the whole constituent *went on foot*) or *He didn't go by car, he went on foot* (which clearly focuses on *foot* or on the phrase *on foot*). In either case, *foot* can be seen as the most informative word in the sentence and hence the word most appropriately highlighted by an accent; there is no need to invoke a special concept of broad focus. But in at least some cases of broad focus, this kind of explanation appears deeply implausible. In our example *five FRANCS*, for instance, we would have to say that *francs* bears the main accent in the broad focus case because it is somehow more informative or salient than *five*. It is hard to see how this could be so in an exchange like the following:

(6.5) A: How much did they pay you for participating in the experiment?

B: Five francs.

In this case, *francs* is almost entirely predictable if the conversation takes place in a country where the unit of currency is the franc; *five* is the information of interest. Yet the main accent is on *francs*. The best the highlighting view can do in a case like this is to say that other factors are at work in determining discourse salience and therefore focus. (For example, *francs* might be more salient because it is a noun, or because it stands last in the utterance.) But the argument is essentially circular, since the main evidence for the supposed greater discourse salience of *francs* is the very fact that it is accented. Examples like (6.5) form the core of the case against a pure highlighting view.

### 6.1.2 *The Focus-to-Accent approach*

The gap between the highlighting theory and the normal stress theory narrowed somewhat during the 1970s and 1980s. This was due in large measure to the development of what we might call, following Gussenhoven (1983a), the 'Focus-to-Accent' (FTA) approach (among others, Schmerling 1976, Ladd 1980a, Gussenhoven 1983a and Selkirk 1984). This approach built on explorations of the notion of 'focus' in the context of generative work on syntax and semantics (beginning with Chomsky 1972 and Jackendoff 1972), and depended for its success on Pierrehumbert's rehabilitation of Bolinger's notion of pitch accent.<sup>3</sup> The hallmarks of the FTA view are that it distinguishes the semantic/pragmatic notion 'focus' from the phonetic/phonological notion 'accent', and – crucially – that it allows focus to apply to portions of utterances larger than an individual word. In this view, the linguistic description of sentence stress involves two complementary but essentially separate aspects: a statement about which parts of an utterance are focused, and a statement about how a given pattern of focus is conveyed by the location of the accent. The speaker's decision about what to focus is subject to all kinds of contextual influences which are at best poorly understood: these are

<sup>3</sup> Similar ideas were actually developed earlier by Halliday (1967a, 1967b), but these papers unfortunately had little direct influence on mainstream American work.

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the factors with which Bolinger, Chafe, Halliday, and others have always been concerned. However, once we specify the focused part of the utterance (which, to repeat, can be more than an individual word), the location of accent on a specific word within the focused constituent follows more or less automatically by language-specific rules or structural principles such as Gussenhoven's 'Sentence Accent Assignment Rule' and 'Minimal Focus Rule'. Rules like these cover much of the ground that was dealt with by traditional normal stress rules.

Since the mid-1980s something like the FTA view has been the foundation of much work on the semantics of focus (e.g. Rooth 1985, 1992 or Krifka 1991, 2006 on the interpretation of the scope of logical operators like *only* and *even*) and on how focus interacts with syntactic and phonological organisation (e.g. Selkirk 1984; von Stechow and Uhmman 1986; Steedman 1991, 2000; Büring 1997, 1999; Féry and Samek-Lodovici 2006; Erteschik-Shir 2007). One of the central questions in much of this work is how sentence stress signals broad focus, and one of the key notions is that of *focus projection*. This is the idea that, in a hierarchical syntactic structure, focus can 'project' up the tree from an accented word to a higher node that dominates an entire constituent, with the result that the entire constituent is treated as focused. Much of the syntactic and semantic literature on focus and sentence stress since the 1980s has conceived of the problem as establishing the principles that govern focus projection, including the identification of the unmarked or neutral prominence patterns that allow focus to project.

The FTA theory thus appears to represent a productive compromise between the normal stress view and the highlighting view. It accepts the premise of the highlighting view that the location of sentence stress is always in some sense meaningful, and eliminates the implication of the normal stress view that there is a fundamental difference of kind between normal stress and contrastive stress. Normal stress is reinterpreted as broad focus on the whole sentence; contrastive stress is narrow focus; and the theory explicitly allows that focus can occur on constituents of any size. At the same time, it also provides a basis for the intuition of the normal stress view that certain aspects of sentence stress are based on grammatical principles, namely the principles that determine the location of prominence when there is focus on constituents larger than a single word. That is, the FTA view has no trouble accommodating narrow focus on individual words, but it also allows for the existence of 'unmarked' or 'neutral' patterns that specify the location of accent in cases of broad focus on whole constituents or sentences. In this way it avoids certain paradoxes of the traditional normal stress view, such as sentences that 'must have contrastive stress' like *Even a two-year-old could do that* (cf. Schmerling (1976: 49). These are a problem only for the traditional structuralist conception of a single structurally determined 'normal stress' pattern for every sentence. As soon as we accept that accent signals focus (on constituents of some size) and that the use of certain words and constructions (such as *even*) crucially involves focus on single words or other small constituents, then there is no problem reconciling data like these with the notion of 'neutral' accent.

Despite the wide acceptance of the FTA view and the idea of focus projection as a mechanism for describing broad focus, the phenomena of focus and sentence stress

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continue to be much debated in the literature. For one thing, there are important problems on the phonological side of the FTA view, in the sense that ‘accent’ is almost certainly too simple a way of describing what makes focused words and constituents prominent. These problems will occupy us extensively in chapter 7; for now I note only that these problems are the main reason I use the term *sentence stress* in this chapter. For another thing, the syntactic and semantic side of the problem is plagued both by theory-internal disagreements about the relation between information structure and truth-conditional semantics in a formal theory of grammar, and by having to work with many slippery concepts (such as ‘familiarity’, ‘contrast’, ‘topic’, and ‘point of view’) that can reasonably be discussed in a variety of incompatible ways. In all of this discussion, certain features of the Bolingerian highlighting view continue to make themselves felt.

Some of the work that attempts to dispense with the notion of focus projection has been based, roughly speaking, on drawing distinctions between different aspects of pragmatic meaning that are conflated in the term focus or in the notion of highlighting. In particular, various authors distinguish the ‘newness’ of a word or phrase (e.g. whether the entity referred to has been recently mentioned or is newly introduced to the discourse) from its ‘contrastiveness’ or ‘informativeness’ (e.g. whether the point of the sentence is to state that a proposition is true of one discourse entity rather than another). Halliday (1967a) drew this distinction quite clearly, and related ideas have more recently been developed by e.g. Lambrecht (1994), Vallduví and Vilkuna (1998), É. Kiss (1998), and Steedman (2000; Kruijff-Korbayová and Steedman 2003). For example, Steedman’s conception of information structure involves two orthogonal dimensions, *theme/rheme* and *kontrast*<sup>4</sup>/*background*: the first distinction is about which part of the sentence is being presented as new or interesting and which as already accessible in the discourse, while the second is about how the parts of the sentence fit into the sentence’s truth-conditional propositional content.

By distinguishing two aspects of the problem, most of these authors leave themselves with some way of getting at the problem of broad focus. For example, Steedman’s idea that the proposition is articulated into theme and rheme (and specifically the idea that theme and rheme can be as small as a single word or as large as a whole sentence) gives his theory a means of dealing with many of the phenomena that have been discussed under the heading of focus projection. On the other hand, the semantic/pragmatic notion of *kontrast* shares a great deal with Bolinger’s notion of focus as highlighting, and, like Bolinger, Steedman (again following Vallduví and Vilkuna) treats *kontrast* as being signalled by accent. It is therefore not clear that he can entirely avoid the problem of having to assign accent only to single words rather than to constituents. Similar comments seem to apply to other work that explicitly does away with the idea of focus projection.

Another reason for the persistence of Bolingerian ideas is that there are important areas of empirical investigation where the issue of broad focus does not really arise. One such

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<sup>4</sup> *Kontrast* – sometimes read aloud as ‘K-contrast’ – is spelled that way in order to identify it as a technical term with a formally definable meaning, distinct from the ordinary-language word *contrast*; cf. Vallduví and Vilkuna (1998)

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area deals the dynamic organisation of conversation and the flow of information between speaker and hearer (e.g. Halliday and Hasan 1976; Grosz and Sidner 1986; Prince 1981; Gundel, Hedberg and Zacharski 1993; Couper-Kuhlen and Selting 1996; Clifton and Frazier 2004; Swerts, Krahmer and Avesani 2002). The references just listed are merely indicative of a number of largely independent traditions that study a number of specific issues, including: the different kinds of discourse statuses that entities may have (previously mentioned, newly introduced, etc.; e.g. Prince 1981); how long such discourse statuses last and what causes them to change (e.g. in order to count as previously mentioned, must the earlier mention have taken place within a certain amount of elapsed time? a certain number of turns? a certain number of topic shifts?; e.g. Grosz and Sidner 1986); the way in which entities are referred to depending on their discourse status (a full descriptive noun phrase, a noun with a definite article, a pronoun, etc.; e.g. Gundel, Hedberg, and Zacharski, 1993; Couper-Kuhlen and Selting 1996); and, finally, the effect of discourse status on whether referring expressions are accented or not and how they are arranged syntactically (e.g. Clifton and Frazier 2004; Swerts *et al.* 2002). What is common to all these traditions is a concern with the reasons for which a speaker decides to focus on a constituent or not. Because they tend to study single entities that can be referred to with single accented or unaccented words, their attention is concentrated on the relation between the discourse status of words and the accentuation of words. The problem of where to locate accent *within* a focused constituent does not arise, and broad focus therefore receives little attention.<sup>5</sup>

Finally, as with the description of pitch patterns, so in the description of prominence patterns the Bolingerian emphasis on intonational universals is never very far from the surface. One area in which the FTA and highlighting views of broad focus clearly make different predictions is in cross-language comparison. If accents are directly meaningful signals of focus or discourse salience, unpredictable except with reference to speakers' intentions and specific contexts, and if broad focus is to be explained in the same terms as narrow focus, it is easy to argue that the relation between accent and focus is part of some universal (and possibly prelinguistic) intonational highlighting function. This was very explicitly claimed by Bolinger, and is implicit in the views of many who study accent in

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<sup>5</sup> In this context it is also important to mention that the term *focus* is used in two essentially incompatible ways in the recent literature. In the tradition that begins with Grosz and Sidner (1986), a discourse entity is said to be 'in focus' if it is the current topic of conversation, that is, if it is the most salient or activated in the speakers' awareness. Such entities are obviously 'given' rather than 'new', and as such are likely to be referred to with *unaccented* expressions in English. This usage of the term contrasts with the older usage originated by Bolinger, which is carried forward into both the formal semantics tradition of, for example, Jackendoff (1972) and Rooth (1985) and the intonational work of, for example, Ladd (1980a), Gussenhoven (1983a), and Selkirk (1984). In this usage, focus attaches to the most informative parts of the sentence, which are accordingly likely to be pronounced *accented* in English. Though these two usages seem like exact opposites, the confusion persists, because the older usage is itself multi-faceted. In particular, work on focus in the older sense does not always distinguish the logical and truth-conditional aspects of focus with the discourse-level pragmatic aspects such as newness, givenness, and informativeness or predictability more generally. The latter aspects are obviously related to the Grosz–Sidner sense of focus, which feeds the confusion and the cross-fertilisation. Readers of the literature on focus need to be alert to the possibilities of misunderstanding due to the multiple meanings that have been attached to the word.

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discourse. By contrast, those who argue for the existence of focus projection or otherwise admit a role for structure in discussing broad focus often invoke language-specific rules or principles. In the remainder of this chapter, therefore, I survey sentence stress data from a dozen or more languages with the aim of showing that a universal highlighting theory with a direct relation between accent and focus is empirically inadequate.

Specifically, I aim to demonstrate the existence of language-specific differences in broad focus patterns of sentence stress by considering comparable sentences in different languages. Consider, for example, hypothetical data of the following sort:

|       |                   |                   |
|-------|-------------------|-------------------|
| (6.6) | <i>Language A</i> | <i>Language B</i> |
|       | This is book RED  | This is BOOK red  |
|       | I bought car NEW  | I bought CAR new  |
|       | He has nose BIG   | He has NOSE big   |

In language A alone, the highlighting theory could argue that, in the absence of other influences, the main accent goes to the end of the sentence (Bolinger’s ‘accents of power’, widely observed in many contexts). In language B alone, the theory might suggest that nouns are intrinsically more informative than adjectives and are thus likely to attract the speaker’s attention (Bolinger’s ‘accents of interest’). But the *comparison* between languages A and B makes it impossible to maintain that these principles are universal, or that conflicts between these principles are resolved by individual speakers in individual situations on the basis of universal principles. The difference between the two languages seems to point inevitably to language-specific – and hence possibly structure-dependent – principles for placing accent within broad focus constituents. This comparative approach, which to my knowledge was first suggested in a 1986 paper by Michel Kefer that was unfortunately never published, is the general strategy adopted in the following section. On the basis of such comparisons, it is possible to demonstrate – conclusively, in my view – that there are consistent cross-language differences in patterns of sentence stress. This in turn means that, whatever exactly the relation between focus and accent may be, it is not simply a matter of applying some universal highlighting gesture to individually informative words.

It is important to make clear that in comparing isolated citation forms of sentences we are not simply reverting to the old-fashioned notion of normal stress. As we saw in section 6.1.1, normal stress was seen by structuralist and early generative writers as a single structurally determined prominence pattern to which context is by definition irrelevant. In context, one might get ‘contrastive stress’ anywhere in a sentence, but in principle one ought to be able to elicit the normal stress pattern without any context at all – that is, as citation forms of sentences. If we reject this notion of normal stress in favour of the FTA view, we have to be suspicious of eliciting prominence patterns out of context. It has often been suggested (e.g. by Bolinger 1972b) that it is methodologically unsound to try to determine how sentences are accented ‘out of context’ – for instance, when read as examples in a linguist’s study – because speakers may imagine all kinds of contexts which will affect sentence stress in unpredictable ways.

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The methodological aspect of this general line of argument obviously has some force: speakers may indeed imagine contexts which will affect sentence stress, and we must be careful not to base theories of sentence stress on data that may be distorted in this way. On the other hand, it is worth emphasising that with the FTA view we do not define anything in terms of contextlessness. The notion of normal stress is redefined as the prominence pattern that can convey broad focus: there is no claim that this pattern is contextless, but only ‘unmarked’, the pattern that is chosen when there is no compelling grammatical or contextual reason to choose some other. We continue to make reference to the communicative intention of the speaker and the context in which the utterance is used: the broad focus pattern *five FRANCS* is appropriate in a wide range of contexts, while the ‘narrow focus’ pattern *FIVE francs* is appropriate only in very few contexts, but nothing depends on any assumption of ‘contextlessness’. This represents an important change of orientation from the structuralist and early generative view.

Obviously, we need to be wary of citation-form sentence stress patterns: because of the methodological problems just cited, we may not succeed in eliciting broad focus patterns as citation forms. Yet in a sense this matters less for cross-language comparison than for the investigation of a single language. If we compare citation forms across languages and find consistent differences in the patterns of sentence stress, it is difficult to explain away these differences with reference to theoretical or methodological problems with elicited citation forms. That is, it is difficult to imagine universal pragmatic principles that would account for consistent differences between languages in structurally parallel citation forms. I believe these comparative data show that we must go beyond the highlighting theory and adopt some version of the FTA view.

## **6.2 Sentence stress patterns across languages**

The discussion of cross-language differences is organised as follows. First, I present three general types of cases in which I believe the evidence for cross-language differences is fairly clear. These are:

- 1 questions;
- 2 deaccenting and ‘semantic weight’;
- 3 predicates vs. arguments.

Following an extensive presentation of the data, I briefly discuss the ways in which these three general types of cases might be interrelated, and I consider which aspects of sentence stress, if any, are governed by universal principles.

### **6.2.1 Questions**

#### **6.2.1.1 Yes–no questions**

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The most convincing cross-linguistic differences are those seen in yes–no questions (YNQs). In some languages, like English, YNQs are treated exactly like statements for purposes of sentence stress rules. Thus in ‘citation form’ we would expect

- (6.7) Statement: She bought a BOOK.  
YNQ: Did she buy a BOOK?

Both of the following forms are distinctly non-neutral in some way:

- (6.8) Statement: She BOUGHT a book.  
YNQ: Did she BUY a book?

English YNQs, like English statements, *can* have the main accent on the verb, but normally only if the verb is not followed by a lexical noun:

- (6.9) Statement: She’s SLEEPING.  
YNQ: Is she SLEEPING?

In short, there is nothing in these data to suggest that the distinction between statements and questions is relevant to sentence stress.

In other languages, however, such as Russian, the two sentence types pattern differently. Russian statements, like English statements, have the greatest prominence on the noun if there is one following the verb:

- (6.10) Ona kupila KNIGU  
(lit. she bought BOOK)

In YNQs, on the other hand, the neutral prominence pattern or citation form has the greatest prominence on the verb, regardless of whether the verb is followed by a lexical noun:

- (6.11) a. Ona SPIT?  
(lit. she SLEEPS?)  
  
b. Ona KUPILA knigu?  
(lit. she BOUGHT book?)

A YNQ with main accent on a noun is distinctly non-neutral; that is, the question

- (6.12) Ona kupila KNIGU?

is felt to focus narrowly on the book in the way that English *Did she BUY a book?* focuses on the buying. If we want to say something in Russian comparable to English *Did she BUY a book?* we must change the word order to (6.13):

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## (6.13) Ona knigu KUPILA?

The method of comparing similar sentences across languages effectively precludes arguments about the nature of neutral sentence stress or the exact contexts in which one prominence pattern or another would be appropriate. The differences must be seen as genuine.<sup>6</sup> Languages like Russian accent YNQs on the verb, regardless of whether the sentence also contains nouns; languages like English accent the verb in YNQs only if there is no following lexical noun. In this case, ‘languages like English’ include all the Germanic and Romance languages with the exception of Romanian and the probable exception of Southern Italian; ‘languages like Russian’ include Romanian, Hungarian, Greek and many if not all of the Slavic languages. For most languages, the facts remain to be determined.

The existence of two neutral or default sentence stress patterns for YNQs can be related to cross-linguistic facts about question particles. In languages that have question particles, there are two main locations for the particle. In one type of language, the question particle occurs at the edge of the sentence, either the beginning (e.g. Yoruba) or the end (e.g. Chinese); in these languages there is no relation between the location of the particle and the location of focus. In the other type of language, the particle attaches to the focus of the question, and if there is no special focused word, then the particle – like the main accent in Russian – attaches to the finite verb. In Turkish,<sup>7</sup> for example, the question particle normally occurs as one of the suffixes or enclitics on the finite verb or other predicate:

- (6.14) a. Gazete geldi mi?  
 ‘Did the newspaper come?’ (lit. newspaper come-PAST INTERROG)
- b. Yorgun musunuz?  
 ‘Are you tired?’ (lit. tired INTERROG-2PERS-PLURAL)

However, if there is a focus on some specific word or constituent other than the verb, the question particle is attached to the focus:

- (6.15) a. Mehmet mi geldi?  
 ‘Was it Mehmet who came?’
- b. Buraya uçakla mı geldiniz, vapurla mı?  
 ‘Did you come here by plane or by steamship?’ (lit. here-to plane-by INTERROG come-PAST-2PERS-PLURAL, steamship-by INTERROG)

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<sup>6</sup> In his last letter to me (10 June 1990), Bolinger conceded that this case ‘is a puzzler, certainly, for what I would want to claim’, though I think it is fair to say that he nevertheless remained convinced of the ultimate validity of the highlighting view that he had held for so long.

<sup>7</sup> The accentual data from Turkish here and below are based on class notes from a structure-of-Turkish seminar held at Cornell in 1976–7. Most of the sentences are from Underhill 1976 and the patterns of sentence stress shown are based on the speech of Vedia Ceranoğlu, the seminar’s native-speaker consultant.

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In a number of other languages, the question particle immediately follows the first word or constituent of the sentence, and a specially focused word may move to first position; if there is no specially focused word, the word in first position is once again the finite verb. The following examples are from Russian:

- (6.16) a. Mark li čitaet?  
           ‘Is MARK reading?’ (lit. Mark INTERROG reads)
- b. Čitaet li Mark?  
           ‘Is Mark reading?’

Analogous examples are possible in other languages, including Classical Latin. Once again, there seems to be a special connection between the focus of a question and the finite verb.

**6.2.1.2 WH-questions**

For YNQs, then, it appears that there are two different kinds of sentence stress rules cross-linguistically: one in which questions exhibit a special neutral location for the main accent (on the verb), and one in which the neutral location of the main accent is similar in questions and statements. Similar conclusions seem to hold for questions containing question words like *who*, *how*, *what* (usually called WH-questions in English and here abbreviated WHQs). Various works on focus and accent – in particular Culicover and Rochemont 1983: 139–44 – deal uneasily with the prominence of the WH-words in WHQs. Logic seems to suggest that the WH-word is the focus of the question, and yet, in English at least, the WH-word does not normally bear the most prominent accent. That is, English has

- (6.17) Where are you GOING?

rather than

- (6.18) WHERE are you going?

though the latter would seem to be demanded by a purely focus-based account of accent placement.

Languages do exist, however, in which the WH-word is the most prominent in the unmarked sentence stress pattern. This appears to be the case, first of all, in languages without WH-movement. Thus in Turkish we find:

- (6.19) Halil’e NE verdiniz?  
           ‘What did you give to Halil?’ (lit. Halil-to WHAT you-gave)

And in Bengali we have:

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- (6.20) Ram KAKE dekhlo?  
‘Whom did Ram see?’ (lit. Ram WHOM saw)

Similarly, English WHQs without *wh*-movement – most often occurring as echo questions – have the main accent on the *wh*-word:

- (6.21) a. You did WHAT?  
b. They went WHERE?

and so on.

More relevantly for the comparison with ordinary English WHQs, there are languages with *wh*-movement that do put the nuclear accent on the *wh*-word, so long as the sentence is fairly short. In Romanian, for example, one says:

- (6.22) a. UNDE mergi?  
‘Where are you going?’  
b. CÂȚI bani ai?  
‘How much money do you have?’  
c. CÂND a plecat?  
‘When did it leave?’  
d. CINE a chemat?  
‘Who called?’

Essentially the same is true of Hungarian:

- (6.23) a. KI az?  
‘Who is that?’  
b. MIT vettél?  
‘What did you buy?’  
c. MILYEN volt a vacsora?  
‘How was the dinner?’

and of Greek:

- (6.24) a. PU ine?  
‘Where is it?’  
b. JIATI efije?  
‘Why did she leave?’

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- c. TI idhes?  
‘What did you see?’

As with YNQs, then, we have two basic typological patterns, one in which WHQs follow the same sentence stress principles as other sentence types (as in English), and one in which there is a special rule for WHQs, whereby the neutral location for the main accent is on the WH-word (as in Romanian or Greek).

**6.2.1.3 A note of caution**

Before leaving the topic of sentence stress in questions, it is important to draw attention to two potential difficulties in determining what the facts are. The first of these is that there are effects of sentence length that affect simple generalisations of the sort just stated; the second is that in many cases, especially in questions, it is not a straightforward phonetic task to identify the most prominent word or syllable. I have tried to avoid these problems wherever possible in the discussion in this section, but it is important to sketch the issues before going on.

Briefly considering the first problem, we note that in WHQs in languages that are said to put the main accent on the WH-word, there may be one or more accents later in the sentence if the sentence is long. Thus in Romanian one would be likely to find either version of (6.25) and (6.26):

- (6.25) a. Unde ai cumpărat cravata ASTA?  
b. UNDE ai cumpărat cravata asta?  
‘Where did you buy that necktie?’
- (6.26) a. Cu cine ai vorbit la FACULTATE?  
b. Cu CINE ai vorbit la facultate?  
‘Who did you talk to at the university?’

The issue of sentence length and its effect on sentence stress is discussed further in section 7.3.1.

Turning now to the more substantive question of how to identify the most prominent syllable, let us consider the claim that YNQs in many languages have the main accent on the verb. The Russian data on this point are fairly clear, because the normal YNQ intonation in Russian involves a high accent peak on the most prominent syllable – L+H\*<sub>L</sub>, or something of the sort. (Normal statement intonation is H\*<sub>L</sub> or H+L\*<sub>L</sub>; i.e. the question peak is aligned later than the statement peak; cf. Odé 1989: ch. 5, Makarova 2007.) In many other Eastern European languages, however, the normal YNQ intonation is L\*<sub>H</sub>L% (see sections 2.5 and 4.1.4). Consequently, in these languages the syllable that is described here as ‘most prominent’ is phonetically *low*, and is followed later in the sentence by a peak-and-fall which is often acoustically more salient, at least to Western European ears, than the L\*. This analysis of the low syllable as

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nuclear or most prominent and the peak-and-fall pitch movement as post-nuclear and subordinate ought to be uncontroversial – as noted in section 2.5, it has been stated clearly by Hungarian linguists at least since the 1960s. However, some researchers who are concerned fairly narrowly with phonetic realisation (e.g. Gósy and Terken 1994, Xu 2005) still equate pragmatic prominence with acoustic salience, and reject or ignore the idea that a low-pitched syllable might be abstractly and pragmatically more prominent than the following high peak. This being the case, it is important to point out that the typological statements just made in this section depend on the validity of the phonological description of the contours under discussion. Extensive phonetic evidence for the phonological description, at least in Greek, is presented by Arvaniti *et al.* 2006, who criticise Xu’s revival (Xu 2005) of a strongly universalist approach to focus and question intonation.

A similar problem arises in the case of the early main accent on WHQs. Phonetically, there is considerable similarity between the contours on, for example, the Romanian and Italian phrases meaning ‘Where are you going?’:

- (6.27) a.                    H\*    L   L%  
                   Romanian: Unde mergi?
- b.                    H\* H+L\* L L%  
                   Italian:     Dove vai?

However, the discussion in section 6.2.1.2 above is based on an analysis in which the phonological structure of the two is different: in the Romanian case the nuclear accent is on the WH-word *unde*, and *mergi* is post-nuclear; in the Italian case *dove* is prenuclear, and there is a H+L\* nuclear accent on *vai*. (That is, the Italian tune contains the same accent type used in broad focus statement intonation in the Romance languages generally; see section 3.1.3 and Figure 3.7.) Again, the typological statements are valid only if the phonological analysis is correct. This case is not as well-studied as the YNQ contour of Greek and Hungarian, but considerations of both phonetic detail and native-speaker intuition suggest that the analysis assumed here is correct.

The phonetic considerations involve the course of F<sub>0</sub> on the unstressed second syllable of the WH-word (e.g. *unde* or *dove*). In Romanian (6.27a) the pitch comes down quickly on the unstressed syllable of *unde*, and there is no further movement on *mergi*. This suggests that there is only one accent on the phrase, on *unde*. In Italian (6.27b), by comparison, the pitch on *dove* stays relatively high and steps down to the following stressed syllable *vai*. The distinction between the two contours can be seen more clearly if we increase the number of unstressed syllables between the stressed syllable of the WH-word and the stressed syllable of the verb, as, for example, in the following sentences meaning ‘Where did you buy it?’ (the lexically stressed vowel of the verb is underlined):

- (6.28) a.                    H\* L                    L%  
                   Romanian: Unde l-ai cumpărat?

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- b.                    H\*            H+L\* L L%  
 Italian:            Dove l'hai comprato?

As for the matter of native-speaker intuitions, informal questioning of speakers of various languages reveals a clear difference: Romanian or Hungarian or Greek speakers have firm intuitions that the WH-word bears the main accent in sentences like these, while Italian or Portuguese speakers tend to be uncertain. Obviously, the situation would be clearer if Italian or Portuguese speakers had clear intuitions that the verb bears the main accent, but the difference is still noteworthy. In this connection it is worth noting that ordinary speakers of European languages generally seem inclined to equate high pitch with sentence stress, if asked to make metalinguistic judgements about which word is most prominent (see e.g. Bolinger 1958: 131–4 (1965: 38–43)). This may explain the uncertainty on the part of native speakers of Italian or Portuguese about the location of ‘the’ main accent in WHQs: the WH-word has the highest pitch even though, on the analysis proposed here, it is not the most prominent accent of the sentence. In any case, with WHQs as with YNQs, the typological discussion of sentence stress depends to some extent on the validity of the phonological analysis.

Finally, note that Kefer (1986) attempted to sidestep the problem of justifying the phonological analysis by using a pretheoretical phonetic definition of sentence stress and by concentrating his typological study on statements. While such an approach may be more convincing in the short run, I believe it is ultimately necessary to acknowledge that our conclusions depend on our phonological analysis, which is why I have discussed the matter at some length here. In the long run, cross-linguistic experiments exploring native speaker intuitions may help establish the reality of the different patterns of relative prominence described in the foregoing paragraphs.

### **6.2.2 Deaccenting and ‘semantic weight’**

The data on sentence stress in questions, as I have just presented them, are clearly difficult to reconcile with a universalist highlighting theory. Cross-linguistically there seem to be two distinct types of prominence patterns for both YNQs and WHQs, and there are clear parallels between the possible locations of the main accent in YNQs and the possible locations of question particles. All these facts point to the conclusion that accentuation in questions is a matter of the grammar of specific languages rather than of universal principles of highlighting focused words. On the other hand, the data are admittedly limited, and potentially questionable in some cases. Sentence stress has not been studied in questions anywhere near as much as in statements, and it is entirely possible that there are complexities beyond the brief presentation here that could be used to support a different interpretation. This section, therefore, concentrates on well-studied sentence stress data from declarative sentences that form the heart of the case for the highlighting view.

Specifically, in this section we consider cases in which, in English, sentence stress can be influenced by the relative informativeness of words or constituents in a sentence. For

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example, it is well known that the main accent tends *not* to be placed on elements that are repeated or ‘given’ in the discourse, or on elements that are vague or generic. For adherents of the highlighting view, this fact is a clear illustration of the general principles governing sentence stress in any context: the speaker assesses the relative semantic weight or informativeness of potentially accentable words and puts accent on the most informative point or points of the sentence. However, it is not hard to show that these observations, valid though they may be for English, do not apply in all languages. To back up the claim of non-universality, this section adopts Kefer’s approach of considering structurally parallel examples from different languages, as we did in the discussion of questions. The discussion is divided into three sections, each dealing with one of three subcases: contextual deaccenting, indefinite pronouns, and ‘semantically empty’ words. In every instance the existence of cross-linguistic differences seems beyond dispute.

**6.2.2.1 Contextual deaccenting**

An important accentual difference between languages involves the treatment of repeated words or phrases, and more generally the treatment of ‘given’ information. A few examples from English follow:

- (6.29) a. A: I found an article for you in a German journal.  
           B: I don’t READ German.
- b. I brought her a bottle of whisky, but it turns out she doesn’t LIKE whisky.

In both of these, a word that we might expect to bear the main accent (*German, whisky*) fails to do so in a context where it has recently been used or where the entity to which it refers has recently been mentioned. In my own earlier work on this topic (Ladd 1980a), I used the term ‘deaccenting’ to describe this phenomenon, and this term has been widely adopted.

The topic of deaccenting looms large in studies of accent and focus based on the West Germanic languages, particularly English. It represents crucial evidence for those who believe that accents occur on new or otherwise salient parts of the utterance more or less without regard to structure – the highlighting view. However, there are many languages in which utterances like those in (6.28) do not have modified sentence stress patterns to reflect the repetition or ‘givenness’ of the normally accented word.

Within English, the absence of deaccenting has been noted in both Hawaiian Pidgin (Vanderslice and Pierson 1967) and in Indian and Caribbean English (Gumperz 1982: ch. 5). Vanderslice and Pierson give the following example:

- (6.30) Forty-three per cent is government OWNED and fifty-seven per cent is privately OWNED.

(their example 8, with spelling standardised). One of Gumperz’s examples from Indian English is:

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(6.31) If you don't give me that CIGARETTE I will have to buy a CIGARETTE.

(Gumperz's example 21, p. 125, with considerable discussion of prosodic detail omitted). Looking beyond English, Cruttenden (1993) reported preliminary results from a study of this and other cross-language differences of sentence stress patterns. His findings were that some languages (like English) more or less insist on deaccenting repeated material, while others (like Spanish, in his sample) quite strongly resist it. This difference has since been confirmed experimentally (specifically, for Dutch and Italian) by Swerts *et al.* 2002.

I have elsewhere (Ladd 1990a) given examples from both Romanian and Italian, which are certainly to be classed among the languages that resist deaccenting. One such case was the following Romanian sentence, which was spoken by a university employee who had come to inspect the contents of the apartment I was vacating after my year as a Fulbright scholar, and to check them against an inventory list that I had signed at the beginning of the year:

(6.32) [ ... o să vedem ] ce AVEȚI și ce nu AVEȚI  
lit. [ ... we'll see ] what you-have and what not you-have

An idiomatic translation that faithfully preserves the accent pattern would be something like (6.33a) instead of the expected (6.33b):

(6.33) a (?) So let's see what you HAVE and what you don't HAVE.  
b. So let's see what you HAVE and what you DON'T have.

The following example from Italian is particularly convincing for speakers of Standard English. The speaker was former Italian President Scalfaro, on the subject of the judicial investigations into massive bribery and corruption during the so-called 'Tangentopoli' scandal of the early 1990s:

(6.34) [le inchieste] servono a mettere a POSTO cose andate fuori POSTO  
lit. [the investigations] serve to put to place things gone out-of place

Again, an idiomatic translation preserving the prominence pattern (6.35a) sounds decidedly odd; with such a rhetorical parallelism, the pattern in (6.35b) is more natural in English:

(6.35) a. The investigations are helping to put back in ORDER things that have got out of ORDER.  
b. The investigations are helping to put BACK in order things that have got OUT of order.

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Even in languages that resist deaccenting, the main accent *can* be shifted away from a neutral or default location under certain circumstances. In Italian or Romanian, which in general are strongly non-deaccenting, explicit metalinguistic corrections can have paired accents on the corrigendum and the correction, irrespective of word order:

- (6.36) Non ho detto CASA bianca, ho detto COSA bianca  
 ‘I didn’t say white HOUSE, I said white THING’

Italian also fairly readily allows contextual deaccenting of non-finite verb forms and of predicate noun and adjective phrases, especially where the resulting main accent is on an auxiliary, and especially in negative sentences:

- (6.37) a. Non È la mia bici (l’ho presa in prestito)  
 ‘It’s NOT my bike (I borrowed it).’  
 b. Non È intelligente.  
 ‘He’s NOT intelligent’  
 c. Non ti POSSO aiutare.  
 ‘I CAN’T help you.’  
 d. Non c’HA invitato.  
 ‘He DIDN’T invite us.’

But there are clear syntactic restrictions on such accent shifts. I once encountered the following sentence in reading a children’s story aloud in Italian (in the story, a young zebra is being instructed how to run):

- (6.38) Correre è come camminare in fretta, soltanto si deve andare molto più in fretta.  
 ‘Running is like walking fast (lit. in haste), only you have to go much faster (lit. much more in haste).’

I used the sentence stress pattern in (6.39a), based on the pattern that would be appropriate on the literal translation, shown in (6.39b):

- (6.39) a. Correre è come camminare in FRETТА, soltanto si deve andare molto PIÙ in fretta.  
 b. Running is like walking in HASTE, only you have to go much MORE in haste.

This pattern is unhesitatingly rejected by Italian native speakers, apparently because it deaccents only a part of the adverbial phrase *molto più in fretta*.

Another type of deaccenting that is not uncommon in English but which never occurs in the Romance languages involves the actual modification of lexical stress. A classic example is Bolinger’s *This whisky wasn’t exported, it was DEported* (1961b: 83). An attested example from a BBC news broadcast is the following:

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(6.40) Greek divers have found the wreck of the British liner BriTANNic, sister ship of the TItanic ...

in which the lexical stress on *Titanic* is shifted to focus on the point of contrast between the two ships' names. A similar case involves the English *-teen* numbers, which have their lexical stress on *-teen* in citation form but can readily be observed with the stress shifted in counting:

(6.41) FIFteen, SIXteen, SEVenteen, EIGHTeen, NINEteen, TWENTy

Corresponding shifts of lexical stress in the Romance languages are impossible. In speaking Italian I once attempted the following utterance:

(6.42) Moglie quaranTENne, marito CINquantenne  
'Forty year old wife, fifty year old husband'

shifting the normal lexical stress on *cinquantenne* ('fifty year old') to the first syllable in order to emphasise the contrast between 'forty' and 'fifty'. The result, like my attempted deaccenting in (6.39), is completely unacceptable in Italian. I have elsewhere (Ladd 1990a) noted the Romanian analogue of the English teen-counting series, namely counting by tens to 100:

(6.43) cinZECI, șaiZECI, șapteZECI, optZECI, nouăZECI, o SUtă  
'50, 60, 70, 80, 90, 100'

The counting context is the same, the morphological transparency of the English teens and the Romanian multiples of ten is strikingly similar, but in Romanian there is no tendency whatever to shift the stress away from the repeated element *-zeci*. (Note that orthographic *-zeci* represents a single syllable [zetʃ].)

While the Romance languages mostly do not allow direct deaccenting, they all have a number of morphosyntactic strategies for achieving similar intonational effects. The most common of these is right-dislocation, in which a constituent (usually but not always a noun phrase) is moved outside the clause, leaving some sort of pronoun in its place. In these cases the right-dislocated constituent is always pronounced as an intonational tag (see section 7.2.2), which implies low pitch in ordinary statement intonation, and the phonetic effect of right-dislocation is thus very similar to the phonetic effect of deaccenting the last word in an English sentence. The following example from Italian illustrates both the syntactic device and the similarity of the phonetic effect to English deaccenting. The sentence was spoken to a child whose baby brother had just had his evening bath:

(6.44) Adesso faccio scorrere il TUO, di bagnetto.  
lit. now I-make run the yours, of bath-DIM.

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In English, in a comparable context, we would certainly have

(6.45) a. Now I'll run YOUR bath.

A literal rendition of this in Italian would be

(6.45) b. Adesso faccio scorrere il TUO bagnetto

which is possible but considerably less natural than (6.44). Right-dislocation used in this way is also an extremely common strategy for 'achieving deaccenting' in French; see section 3.3.2.

This brings up the question of the relation between accentuation and word order. Vallduví (1991; see also Vallduví and Zacharski 1994), basing himself primarily on comparisons between Catalan and English, proposes that some languages (like English) have 'plastic' prominence patterns, and that other languages (like Catalan) do not. A language with a non-plastic pattern is constrained to vary word order to shift words into sentence locations where they will appear with or without accent as appropriate. This word order variation can be accomplished either directly on the surface, or by the use of marked morphosyntax in the form of clefting, fronting, right-dislocation, etc. Not all Romance languages are equally non-plastic: Catalan seems to be the most strongly resistant to moving the main accent out of phrase-final or sentence-final position, and detailed comparison clearly suggests that languages resist deaccenting to different degrees. For example, Enric Vallduví (personal communication) states that the Italian sentences involving accent on auxiliaries in (6.37) have no direct counterparts in Catalan, which must use right-dislocation in all such cases.

In any case, the conclusion from this brief survey must be that there is a difference between deaccenting and non-deaccenting languages – or more precisely, between (a) languages that permit, prefer, or virtually require the deaccenting of repeated and otherwise given material, and (b) languages in which such deaccenting is dispreferred or syntactically restricted, allowable strictly in cases of metalinguistic correction, and/or achievable primarily through word order modifications. This conclusion is difficult to reconcile with the claim that accent is used universally to highlight focused words.

### 6.2.2.2 *Indefinite pronouns*

Another specific point of disagreement between FTA and highlighting accounts of accentuation involves 'indefinite pronouns' such as *someone* and *nothing*. In English or Dutch, these often occur unaccented in positions where ordinary arguments would be accented:

- (6.46) a. English  
       (i) They've DISCOVERED something.  
           (cf. They've discovered the DRUGS.)

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- (ii) She can't EAT anything.  
(cf. She can't eat FISH.)

## b. Dutch

- (i) Ze hebben iets GEVONDEN. (lit. they have something found)  
(cf. Ze hebben de DRUGS gevonden.)  
(ii) Ze kan niks ETEN. (lit. she can nothing eat)  
(cf. Ze kan geen VIS eten.)

To the extent that such pronouns form an identifiable lexical class, it is tempting for a structure-based account to make special provision for them in sentence stress rules on the basis of their 'part of speech'. Equally, however, the semantic vagueness or indefiniteness of these pronouns seems consistent with the highlighting approach: they are unaccented because they contribute little semantic weight or interest. On the basis of data from English or Dutch alone, it is impossible to resolve this disagreement.

Cross-language comparison, though, suggests consistent differences in the way these items are handled. In some languages, indefinite pronouns are treated for accentual purposes like any other argument. In other languages, they are less accentable than other arguments. Some languages make a distinction between negative and non-negative indefinites, with only non-negative indefinites being given special treatment (Kefer 1986). For more general discussion of the accentual properties of indefinite pronouns, see Haspelmath 1997, esp. section 5.7.

English treats negative indefinites rather like other arguments, while it treats non-negative indefinites as similar to personal pronouns. Thus we have

(6.47) a. I saw NOBODY (cf. I saw MARY)

b. She HEARD something (cf. She HEARD it; She heard FOOTSTEPS)

In Italian, unlike English, all indefinites are like other arguments, and no distinction is made between negatives and non-negatives. Thus we have:

(6.48) a. Ho sentito MARIA.

'I heard Maria.'

b. Ho sentito QUALCUNO.

'I heard someone'

c. Non ho sentito NESSUNO.

'I heard nobody.'

The only interpretation for a sentence like, say, *Ho sentito qualcuno* is as a metalinguistic correction or contrast (i.e. 'I didn't see someone, I heard someone'). Nevertheless, in certain syntactic contexts, we may detect a difference between negative and non-negative

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indefinites in Italian, a difference that indirectly affects the sentence stress. Specifically, the difference may be relevant to acceptability judgements about word order in Italian. Either of the following orders is acceptable:

- (6.49) a. Ho sentito qualcuno parlare.  
‘I heard someone talking.’
- b. Ho sentito parlare qualcuno  
(lit. I heard talk someone)

but the verb-final order is much less acceptable with the negative indefinite:

- (6.50) a. (?) Non ho sentito nessuno parlare  
‘I heard no one talking’
- b. Non ho sentito parlare nessuno.  
(lit. I heard talk no one).

These are not, of course, just facts about word order, but have the consequence that *qualcuno* ‘someone’ may or may not occur in the accent-bearing location at the end of the sentence, whereas *nessuno* ‘no one’ must occur there. In some sense, then, negative indefinites are more likely to bear the main accent than non-negative indefinites, in Italian as in English. But the grammatical mechanism by which this comes about is different in the two languages: the notion of ‘accent-bearing location at the end of the sentence’ implicitly presupposes Vallduví’s idea that some languages can modify their sentence stress pattern (‘plastic’) while others cannot (‘non-plastic’) and must modify their word order instead.

### 6.2.2.3 ‘Semantically empty’ content words

The third type of case in which relative informativeness seems to affect sentence stress involves intrinsically vague or general content words, such as *person, man, thing, stuff*, and so on. In English these often occur unaccented, again in ways that seem to favour the highlighting view. Bolinger (1972b: 636) suggests that ‘the [semantic] emptiness of certain nouns can be illustrated by comparing them with other nouns that are semantically richer’. His examples include pairs like:

- (6.51) a. (i) He was arrested because he **KILLED** a man.  
(ii) He was arrested because he killed a **POLICEMAN**.
- b. (i) I’ve got to go **SEE** a guy.  
(ii) I’ve got to go see a **FRIEND**.
- c. (i) I’m going over to the **DOCTOR’S** place.  
(ii) I’m going over to the doctor’s **BARN**.

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He rightly criticises Bresnan (1971: 271) for suggesting that nouns like *man* and *guy* form a category of ‘semi-pronouns’. As he points out (*ibid.*), this explanation is circular, because ‘the only way ... to identify such nouns is by their behavior under accent’. Moreover, Bolinger notes that these forms often exhibit variability: ‘where the accentual behavior with true pronouns is predictable, that of empty nouns is only highly probable’. All of this evidence seems to weigh heavily in favour of the highlighting view.

A related type of case where semantic emptiness and predictability seem to influence accentuation involves Adjective + Noun phrases. Bolinger (1972b: 638) cites several examples in which the adjective rather than the noun is accented:

(6.52) a. I like it because it has a SILKY sheen.

b. ... I don’t see how you could make it to OUR place in 45 minutes unless you went through every RED light.<sup>8</sup>

In the same vein, Monaghan (1991: 149f.; 1992: 155ff.) identifies several combinations of Adjective + Noun that are likely to be accented on the adjective, including phrases with fairly unspecific nouns such as *meeting* and *committee* and those with deictic or ordinal adjectives such as *latter*, *second*, and *alternative*. A few examples of such Adjective + Noun combinations taken from passages elsewhere in this book are:

(6.53) a. [the motivation is] to avoid the seemingly unverifiable speculation of IMPRESSIONISTIC work, and to permit the use of familiar parametric STATISTICAL approaches (p. ...)

b. a SIMILAR case [involves the English *-teen* numbers] (p. ...).

A final type of case in which sentence is often said to depend on factors of informativeness involves sentence-final adverbs and prepositional phrases. For example, phrases denoting places and times that are effectively here and now often occur unaccented:

(6.54) a. I saw an ACCIDENT today.

b. There’s a FLY in my soup.

Chafe (1974, 1976) relies extensively on such cases in developing an account of how sentence stress, pronominalisation, and various other phenomena depend on the speaker’s assessment of what is likely to be in the hearer’s consciousness or at the centre of the hearer’s attention (cf. Grosz and Sidner 1986; Gundel et al. 1993). Bolinger points out,

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<sup>8</sup> Many readers have found this example strange, and the accent pattern on *red light* may not be a very good illustration of Bolinger’s point, except diachronically: I suspect the speaker of this (attested) utterance spoke an American variety in which the phrase is lexicalised with compound stress, i.e. with main stress on *red*.

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though, that it is not just a matter of what is in the addressee's consciousness, but of more general aspects of informativeness and predictability. As he notes, 'in the sentences

They STRANGLED him to death.  
 They hounded him to DEATH.  
 They scared him to death.

(once more answering *What happened?*), the first de-accent *death* because strangulation normally involves *death*, the second accents *death* because hounding in itself is not fatal, and the third may be treated either way because figuratively there is a choice' (1972b: 639). Or again, he suggests that his theory of accent 'predicts that [ordinary meals] will carry no particular semantic weight, hence *Peter had CLAMS for dinner*, but that something in between [meals] may well do so, hence *I had some nice CLAMS for my SNACK this afternoon*' (1972b: 638).

In all the cases just cited – semantically empty nouns like *person* or *thing*; relative semantic weight of adjective and noun in phrases like *silky sheen* or *statistical approaches*; and sentence-final adverbs and prepositional phrases – the evidence for the highlighting view seems fairly compelling. However, cross-language comparison shows that the picture is not so clear. In languages like Italian, which resist deaccenting and which treat indefinite pronouns like any other argument, virtually none of the English examples just cited has a counterpart with sentence stress patterns that reflect informativeness. For example, semantically empty nouns in Italian are treated for accentual purposes like any other argument:

- (6.55) a. ... perché ha ucciso un UOMO.  
 '... because he killed a man.'
- b. ... perché ha ucciso un POLIZIOTTO.  
 '... because he killed a policeman.'

In any context, *ha ucciso un uomo* could only involve explicit contrast or metalinguistic correction (e.g. 'killed, not wounded'). Essentially the same is true of sentence-final adverbs and prepositional phrases. With these too we find very little tendency to deaccent and very little variability.

- (6.56) a. C'è una mosca nella MINESTRA.  
 'There's a fly in the soup.'
- b. L'hanno spaventato a MORTE.  
 'They scared him to death.'

As for analogues to English phrases like *silky sheen* or *statistical approaches*, it is not possible to construct these in Italian, because the normal word order in noun phrases is Noun + Adjective. However, it is worth noting that there is no tendency at all for Italian Noun + Adjective phrases to have the main accent on the noun, regardless of relative semantic weight.

**PREPRINT – PLEASE DO NOT COPY OR CIRCULATE****6.2.2.4 Lexical and syntactic effects on relative semantic weight**

It thus appears that there are languages in which relative informativeness is relevant to sentence stress and others in which it is not. However, those are not the only language-specific differences. Among languages that do take relative semantic weight into account, the details often differ unpredictably from language to language or even from dialect to dialect within the same language. The conditioning factors are both lexical and syntactic.

A good illustration of the complexity of such cases is provided by English phrases consisting of a proper name and a common noun, such as *George Square* or *Alzheimer's Disease*. As has been noted many times, when such phrases serve as names of thoroughfares (*Wellington Street*, *Chesley Drive*, *Dryden Road*, *Gillespie Crescent*, and so on), they have the main accent on the first part of the name if the second part is *Street* (i.e. *WELLINGTON Street*) but on the second part otherwise (i.e. *Chesley DRIVE*, *Dryden ROAD*, *Gillespie CRESCENT*). The explanation, proposed by an amateur observer of language well over half a century ago (see Mencken 1948) and repeated more than once since then, seems to be that in a town, *Street* is the least specific – and hence least informative – noun used in such names, and consequently can be deaccented.

In Ladd 1980b, I noted that the same sort of thing is true of several other sets of nouns, such as *Tompkins COUNTY*, *New York STATE*, *Baffin ISLAND*, but *GONDWANA land*. What I did not note is that there is consistent dialect variation in these cases. For example, in the set of nouns used in names of buildings, *House* is deaccented in American English (e.g. *FAUNCE House*, Brown University Student Union building, *BLAIR House*, Official US Government guest house in Washington; cf. *Morrill HALL*, *Carrie TOWER*, *Johnson MUSEUM*, etc.) but not in British English (e.g. *Adam HOUSE*, Edinburgh University examination hall, *Broadcasting HOUSE*, headquarters of BBC in London). Nor did I note that definiteness can have an effect: when such phrases are lexicalised with the definite article, they are more likely to deaccent the common noun (e.g. *Rockefeller CENTER* in New York but *the KENNEDY Center* in Washington). That is, while relative informativeness clearly plays a role, it does so within limits imposed by the lexicon and grammar of specific languages and dialects.

A good illustration of the interplay between relative informativeness and grammar is a common usage I observed while living in a rural area near Ithaca, New York. The official names of the rural roads almost all have *Road* rather than *Street* as the common noun (*Tunison Road*, *Townsendville Road*, *Lodi Center Road*, etc.), and as such should be accented on *Road* according to the rule of English just discussed. Yet in the rural context, the truly informative element of the name is the proper name. Accordingly, when they refer to roads by name, local residents frequently add a definite article, which allows them to deaccent *Road* and put the main accent on the name (e.g. *the TUNISON Road*, *the TOWNSENDVILLE Road*). This example shows both the importance of relative informativeness and the importance of specific grammatical and lexical effects. If, as claimed by the highlighting view, relative informativeness were the most important factor in sentence stress, then it should be possible for speakers simply to say *TUNISON Road* and *TOWNSENDVILLE Road*. But those pronunciations create unwanted narrow focus: adding the

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definite article seems to sanction the shift *while retaining broad focus*. It is difficult to explain this effect within the highlighting view.

A similar case is found in Icelandic. According to Kristján Árnason (2005: 453ff), the word for ‘man’ may be deaccented in *definite* Adjective + Noun phrases and still convey broad focus, but not in indefinite phrases. Other more informative nouns bear the main accent in Adjective + Noun phrases regardless of whether the phrase is definite or indefinite. For example:

- (6.57) a. Þarna er GAMLÍ maðurinn.  
 ‘There’s the old man.’ (lit. there is old-DEF man-DEF)
- b. Þarna er gamall MAÐUR.  
 ‘There’s an old man.’ (lit. there is old man)
- c. Þarna er gamla PÓSTHÚSIÐ.  
 ‘There’s the old post office.’ (lit. there is old-DEF post-office-DEF)

What is important about these sentences is that they can all be used to convey broad focus, despite the fact that the main accent is on the noun in (6.57b) and (6.57c) and on the adjective in (6.57a). That is, Icelandic is like English in two respects: first, there are individual relatively uninformative nouns that may be deaccented and still convey broad focus; and second, definiteness favours this kind of deaccenting where indefiniteness does not. But there is no direct correspondence between English and Icelandic: we cannot use *the OLD man* in English without conveying some sort of narrow focus on *old*.

Another similar case involves English and Hungarian phrases denoting sums of money. As we saw in example (6.4) above, in English sums of money have the main accent on the unit of currency: *FIVE FRANCS*, *FIFTY CENTS*, and so on. In Hungarian, however, it is normal to deaccent the unit of currency. Thus in contexts entirely comparable to ones discussed earlier, we might find:

- (6.58) A: Mennyit kaptál érte?  
 ‘How much did you get for it?’
- B: SZÁZ ötven forintot.  
 ‘150 forints.’

This comparison between English and Hungarian is very nearly identical to the hypothetical cross-language comparison sketched in section 6.1.3. In comparable contexts we have phrases containing corresponding words in the same order, yet we find one prominence pattern in one language and another pattern in the other. A Bolingerian or highlighting explanation for either pattern *on its own* is possible, but an explanation of the difference effectively destroys the predictive value of the highlighting theory. Universal strategies for highlighting salient information simply do not explain all the facts about accent across languages. The Hungarian pattern makes Bolingerian sense as

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an ‘accent of interest’ (the number of forints is what counts, and the unit is predictable), while the English pattern makes sense as an ‘accent of power’ (other things being equal, put the accent at the end). What does not make sense is that English treats the relative informativeness of the number and the currency unit as equal, while Hungarian treats them differently. There seems no way to avoid putting this kind of difference in the grammar of individual languages.

The Hungarian example raises the more general question of syntactic and phonological ‘headedness’. In Hungarian the accentual pattern illustrated in (6.58) may actually reflect a general fact about noun phrases, not a specific fact about sums of money: that is, noun phrases generally normally bear the main accent on the first element (viz. on the adjective in an adjective-noun sequence such as *nehéz nyelv* ‘difficult language’ in example (2.26 above). Note that in the present example the number *száz ötven* itself is stressed on the first element; contrast English *a hundred and FIFTY*. It appears that some languages may generally prefer ‘left-headed’ phonological phrases, i.e. phrases with the greatest prominence on the initial element rather than the final one. If this is true, then Hungarian is a likely instance of such a language: note that Hungarian word-stress is invariably on the first syllable of the word (cf. Halle and Vergnaud 1987, who suggest that prosodic headedness at the phrase level and the word level are instances of the same kind of structural specification at different levels in the prosodic hierarchy). The claim has even been advanced (Nespor and Vogel 1986: 168ff) that phonological ‘headedness’ of this sort is systematically related to syntactic headedness, though the evidence for this claim is relatively thin (see further Ladd 2001: 1385f).

One difficulty of evaluating any claims about ‘left-headedness’ – initial sentence stress – at the phrase level is due to factors of the sort discussed in section 6.2.1.3 above, namely to uncertainty about the validity of the phonological analysis, and specifically to the fact that in many such cases the question of constituent length is highly relevant. In the case of Hungarian noun phrases and number names, it seems likely that relatively short noun phrases do indeed have the main accent on the first element, but that longer noun phrases (such as long number names) have a prominent accent on the last element as well. Extensive discussion of this general topic is given in Varga’s excellent description of Hungarian phrasal stress patterns (Varga 2003, chs. 6 and 7). This effect of length is comparable to what I suggested about WHQs in Romanian in examples (6.25) and (6.26) above, and may be typical of ‘left-headed’ phonological constituents generally. Further examples are provided by the English intransitive sentences discussed in sections 6.2.3 and 7.2.3 below.

### 6.2.2.5 Summary

The English data reviewed in this section, in my opinion, represent the best evidence there is for the highlighting view. On the basis of the English cases alone, it is very clear that relative semantic weight is a key factor in sentence stress even in many broad focus cases. This fact is what drives the highlighting view, and is what induces investigators to try to understand more about the nature of ‘relative semantic weight’ (discourse status,

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informativeness, etc.): if we understand relative semantic weight, we will automatically understand sentence stress.

When seen in the light of cross-language comparison, however, the English data are less compelling. The totality of the evidence presented in this section suggests the rather less inspiring claim that relative semantic weight may play a role in sentence stress – in some syntactic contexts, in some languages. This does not make it any less important to study the contextual factors that influence relative semantic weight – for those languages in which it is relevant – but it does mean that in all languages there is an important role for structural considerations as well.

### **6.2.3 Predicates and arguments**

We now turn to the third area of potential cross-linguistic differences in sentence stress patterns, namely the claim that in some languages there is a difference of accentability between arguments and predicates, with predicates (verbs and predicate nouns or adjectives) less accentable than arguments (noun phrases syntactically linked to a predicate). This claim, at least in the modern literature, seems to have been first made by Schmerling (1976: ch. 5). In origin it is a way of accounting for a long-standing and much-discussed problem with traditional normal stress rules.

In traditional syntax-based accounts of normal stress, the greatest prominence in a sentence is said to fall on the last content word. This rule encounters serious difficulties in English sentences with intransitive predicates. Some such sentences seem to be most naturally pronounced with the main accent on the subject, but others seem more appropriate with the main accent on the predicate, and for others there is no agreement even among proponents of the idea of normal stress. There has been much discussion in the literature, over many decades, of the conditions under which the two accent patterns occur. These conditions are summarised briefly here.

In short sentences describing single events, nuclear accent on the subject is favoured:

(6.59) a. The COFFEE machine broke.

b. The SUN came out.

c. His MOTHER died.

This is particularly true if the predicate denotes appearance or disappearance or otherwise introduces the subject into the discourse (Allerton and Cruttenden 1979). By contrast, as was noted by Faber (1987), if the subject denotes a human agent and the predicate denotes an action over which the subject is likely to have some control, nuclear accent on the verb is more likely. To use a term that has become rather more common than when Faber wrote, the cases in which the predicate is commonly deaccented generally involve *unaccusative* predicates (Perlmutter 1978, Levin and Rappaport-Hovav 1995, Sorace forthcoming):

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(6.60) a. My brothers are WRESTLING.

b. Jesus WEPT.

c. The professor SWORE.

Other intransitive sentence types that often bear accent on the predicate include sentences with generic subjects, and sentences that state definitions, eternal truths, and grand abstractions (Gussenhoven 1983a: 403ff.; Faber 1987: 352f.):

(6.61) a. Wood FLOATS.

b. Penguins SWIM.

c. Hope FADED.

Accent on the verb is also more likely if the subject is (in some sense that is not very clear) ‘topicalised’ or otherwise readily referable to the context: this accounts for often-cited pair of examples in (6.62), first discussed by Schmerling 1976:41f.

(6.62) a. Truman DIED.

b. JOHNSON died.

These were the reports of the deaths of two former US presidents, addressed to Schmerling in both cases at the beginning of a conversation. Johnson’s death was unexpected and the proposition (involving an unaccusative verb) is presented as a single event; by contrast, Truman’s medical condition had been in the news for several days, and the sentence stress related the utterance to that prior context by treating *Truman* as a ‘topic’. Similar subtly distinct pairs are discussed by Faber (1987) and Gussenhoven (1983a).

Given these data, Schmerling proposes that, in the absence of other considerations, arguments are intrinsically more likely to be accented than predicates. She treats cases where the main accent is on the intransitive predicate as special in some way – for example, what she calls ‘topic–comment sentences’ (1976: 89ff), where the subject is somehow predictable or given in the context (as in 6.62a). Bing (1979), Ladd (1980a), and Gussenhoven (1983a) all follow Schmerling by building a basic difference between arguments and predicates into their accentuation rules, and Gussenhoven follows Schmerling still further by discussing pragmatically different sentence types (e.g. his ‘eventive’ and ‘definitional’ sentences) which favour main accent on the subject or on the predicate.

Schmerling notes that the greater accentability of arguments also seems to hold in German: for example, object nouns are regularly more prominent than transitive verbs in main clauses (where the object follows the verb), in subordinate clauses (where the object

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precedes the verb), and in main clauses with non-finite forms of lexical verbs (where the object also precedes the non-finite verb). Thus:

- (6.63) a. Sie liest ein BUCH.  
           ‘She is reading a book.’
- b. Er denkt, dass sie ein BUCH liest.  
           ‘He thinks she is reading a book.’
- c. Sie hat ein BUCH gelesen.  
           ‘She read a book.’ (lit. she has a book read)

The literal translation of the second example is *He thinks that she a book reads*; as Schmerling points out (1976: 84), an English speaker reading such a literal translation aloud is likely to put the most prominent stress on *book*, not on *reads*. Selkirk (1984: section 5.2.2) makes similar observations about German, and Gussenhoven (1984: ch. 2) demonstrates at length that essentially the same is true of Dutch.

In all three languages, however, there is also a good case to be made that any apparent difference between nouns and verbs (or arguments and predicates) is simply a matter of the more general role of relative semantic weight or informativeness. That is, it can be argued that nouns generally carry more semantic weight than verbs, which are frequently rather predictable given a particular noun or nouns. If this is true, then data like Schmerling’s actually support the highlighting view, and any reference to structure (viz. to the predicate–argument distinction) is unnecessary. This case has been vigorously put by Bolinger (1972b; 1986: ch. 7; and especially 1989: ch. 9).

One type of evidence in favour of Bolinger’s view is the existence of variability. There are many cases in which the main accent can plausibly occur on either a noun or a verb without necessarily signalling explicit contrast or narrow focus. For example, Bolinger points out that sentence stress may be variable in cases where ‘nouns are set against verbs that are comparably low in semantic content’ (1972b: 637):

- (6.64) a. I can’t go with you; I’ve got too many THINGS to do.
- b. I can’t go with you; I’ve got too many things to DO.

He notes that ‘the same is true when noun and verb are equally rich’ (1972b: 638):

- (6.65) a. We’re looking for a neighbourhood where there are other boys to PLAY with.
- b. We’re looking for a neighbourhood where there are other BOYS to play with.
- (6.66) a. It’s too heavy a price to PAY.
- b. It’s too heavy a PRICE to pay.

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Another piece of evidence for Bolinger’s view involves the effects of definiteness on the accentability of referring expressions (cf. section 6.2.2.4). Such cases have been extensively discussed with reference to German, where it is well established that definiteness affects both word order and sentence stress (e.g. Kiparsky 1966; Jacobs 1982). For example, in sentences that have a non-finite verb form at the end, the nuclear accent readily occurs on the verb if the preceding object noun phrase is definite, but not normally if the object is indefinite. The following examples are based on Cinque (1993):<sup>9</sup>

- (6.67) a. Der Arzt wird einen PATIENTEN untersuchen.  
 ‘The doctor will examine a patient.’ (lit. the doctor will a patient examine)
- b. (?) Der Arzt wird einen Patienten UNTERSUCHEN.
- c. Der Arzt wird den PATIENTEN untersuchen.  
 ‘The doctor will examine the patient.’
- d. (OK) Der Arzt wird den Patienten UNTERSUCHEN.

When the object noun phrase is indefinite, as in (a) and (b), it is likely to refer to an entity newly introduced into the discourse, and placing the main accent on the verb is odd. By contrast, when the object is definite, as in (c) and (d), it is likely to refer to a ‘given’ entity, and is correspondingly less informative. As a result it is much more acceptable to have the main accent on the verb.

Finally, whatever the semantics of the predicate or the information status of the arguments, sentence length can also play a role here, as with the sentence stress in WHQs (section 6.2.1.3 above; cf. section 7.3.1 below). Specifically, accenting of the subject in such intransitive sentences applies especially when the sentences are short: even with unaccusative predicates there may be accents on the predicate in sentences with longer constituents, and in sentences with additional adverbial constituents in the verb phrase.

- (6.68) a. Former President Johnson unexpectedly DIED today.
- b. The dog’s mysteriously DISAPPEARED.

Here again, one might argue that a longer or ‘heavier’ constituent is more informative and as such attracts the main accent; as already noted, we return to discuss such effects of constituent weight in section 7.2.3.

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<sup>9</sup> I have expanded Cinque’s set of examples a bit to show that what is at issue is the *relative* acceptability of main accent on the verb, depending on the definiteness of the noun phrase. Cinque himself presents these examples as if the only possibilities were accent on the verb when the object is definite (6.67a) and accent on the object when it is indefinite (6.67d), but the situation is subtler than that. For more on the notion of relative acceptability and its theoretical implications see Bard, Robertson, and Sorace 1996 and some of the references cited there.

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In all these cases, then, if we consider only data from West Germanic languages, it is once again almost impossible to decide between the highlighting view and a structure-based FTA account that assumes language-specific rules. However, if we compare extensively across languages, it becomes apparent that certain languages are like English in treating arguments differently from predicates in sentence stress rules, while other languages seem to treat arguments and predicates in the same way. Dutch and German, for example, are like English, while Italian and Spanish are not. It does not seem useful to account for the English or German data solely in terms of universal principles of informativeness.

Direct comparison of English or German with Spanish or Italian is unfortunately complicated by the fact that it is difficult to find analogues to sentences like *The COFFEE machine broke* (ex. 6.59). In general, such intransitive event sentences in Spanish or Italian, have verb–subject (VS) word order:

- (6.69) S'è rotta la CAFFETTIERA.  
 'The coffee machine broke.' (lit. has broken the coffee machine)

That is, as with the difference between negative and non-negative indefinite pronouns (section 6.2.2.2), word order modifications in languages like Spanish or Italian may indirectly achieve the accentual effects that English accomplishes directly by manipulating the location of the nuclear accent. In fact, VS word order in Spanish or Italian occurs in circumstances that are uncannily parallel to those in which intransitive predicates are unaccented in English, and in any given context the nuances of VS vs. SV word order in Spanish or Italian are generally extremely similar to the nuances of unaccented vs. accented intransitive predicates in English (for examples of this see Bolinger 1954; Hatcher 1956; Ortiz-Lira 1994). This observation gives some comfort to a highlighting view of sentence stress, because it means that 'accent on the argument' or 'accent on the predicate' appear to have similar pragmatic effects in different languages. At the same time, however, the highlighting account of these similarities provides no explanation for the fact that some languages (like English) can readily move accent away from the last content word, while others (like Italian) must modify word order to get the appropriate content word into accented position.

More direct evidence of a difference between English or German and Italian or Spanish with regard to the relative accentability of nouns and verbs comes from certain specific constructions. These include infinitive 'small clauses', such as (6.70a), and short relative clauses containing no nouns, such as (6.70b)

- (6.70) a. I have a BOOK to read.  
 b. It was caused by the FISH she ate.

In English, these often have the main accent on the last noun rather than on the following verb (cf. examples 6.64-6.66). In Italian, corresponding sentences are accented on the verb:

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- (6.71) a. Ho un libro da LEGGERE.  
‘I have a book to read.’
- b. È stato provocato dal pesce che aveva MANGIATO.  
‘It was caused by fish she had eaten.’

It is true, as Bolinger points out, that these kinds of structures are variable in English in phrases like *things to do* and *price to pay*, so it may be inappropriate to take the pattern in (6.70) as revealing the neutral sentence stress pattern in English. Nevertheless, there is clearly a cross-language difference, because this variability is absent in Italian: that is, Italian phrases like *cose da fare* (‘things to do’) or *prezzo da pagare* (‘price to pay’) can only be accented on the verb, except, as always, in cases of very explicit metalinguistic contrast. Unlike English, Italian really does put the main accent on the rightmost content word in the overwhelming majority of contexts. This in turn means that the apparent difference of accentability between predicates and arguments in English is not simply a specific instance of more general principles of accentual highlighting, but involves a language-specific, structure-based rule of sentence stress.

The examples just cited, in addition to whatever they may tell us directly about sentence stress, also make us aware of a methodological consideration: if we are looking for unambiguous differences between languages in the relative accentability of nouns and verbs, we need to look at structures in which the verb is sentence-final. Such structures are difficult to find in comparing English and Italian. A more obvious place to look is in languages with subject–object–verb (SOV) word order. Specifically, one would predict that in an SOV language in which arguments are more accentable than predicates, the neutral or broad focus location for the main accent would be on the object, whereas in an SOV language that does not distinguish predicates and arguments accentually, it would be on the verb.

There does appear to be such a difference between SOV languages. In Turkish, especially with indefinite objects, the last accent normally falls on the object (see note 2 above):

- (6.72) Eski müdür bir KİTAP yazdı.  
‘The former director wrote a book.’ (lit. former director on BOOK wrote).

In Bengali, on the other hand, the last accent is generally on the verb (Hayes and Lahiri 1991):

- (6.73) Ram Shamoli DEKHLO.  
‘Ram saw Shamoli.’ (lit. Ram Shamoli saw)

This difference would appear to confirm the existence of a difference between languages that treat arguments and predicates unequally and languages that do not. However, once again we are bedevilled by disagreements over the data. In a typological survey article by Kim (1988, cited in Cinque 1993), the claim is put forth that most SOV languages, including Bengali, have unmarked sentence stress on the object. This directly contradicts

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the data from Hayes and Lahiri just cited. While we might grant *prima facie* credibility to Hayes and Lahiri on the grounds that Lahiri is a native speaker of Bengali, it is clear that this is a point on which further data are required. Broad focus sentence stress patterns in languages with SOV word order need to be scrutinised.

### 6.3 Typology of sentence stress patterns

The existence of cross-linguistic differences of sentence stress leads naturally to the question of typology, and of constraints on the ways in which sentence stress patterns can differ across languages. Can languages differ ‘without limit and in unpredictable ways’ (to use the often-quoted formulation of Joos 1957: 96)? Or is the range of variation constrained in principled ways? Or, for that matter, is the apparent variation all conditioned by some other property of a given language?

The first possibility – that there are no principled limits on the way sentence stress can differ from language to language – cannot be logically excluded, but it runs counter to much current thinking on language typology, as well as contradicting many long-standing observations about universal tendencies in intonation, and I do not pursue it further. The third possibility – that the apparent cross-linguistic diversity of sentence stress is actually a reflection of something else – is suggested in various works broadly in the tradition of generative syntax. For example, Cinque (1993) argues for a ‘null theory of sentence stress’, in which the most prominent accent of the sentence goes on the most deeply embedded element in the sentence’s surface syntactic structure, and therefore claims that apparent differences in sentence stress are really syntactic differences. A similar position is extensively developed by Zubizarreta (1998), though on the basis of a different version of generative syntax. Irrespective of one’s preferred approach to syntax, I do not believe that this view can be maintained in light of the data presented in the foregoing subsections; however, a point-by-point rebuttal of Cinque’s or Zubizarreta’s arguments is beyond the scope of this chapter.

This leaves us to search for principles that constrain the variability of sentence stress patterns from one language to another. Given the discussion so far, it seems clear that in one way or another the principles involve some sort of balancing act or competition between different principles – in a given sentence, one principle (say, definiteness) may favour placing the main accent on word *x* while another competing principle (say, relative accentability of arguments and predicates) may favour placing it on word *y*. This in turn suggests that a description expressed in terms of Optimality Theory would be attractive, and indeed such descriptions have been discussed by e.g. Féry and Samek-Lodovici 2006 and German, Pierrehumbert and Kaufmann 2006. I do not attempt to work out such an analysis here, but in this section I briefly identify some of the potentially competing principles that must be involved.

First of all, it seems fairly clear that in all languages, even in a language as strongly ‘left-headed’ as Hungarian, there is some tendency for the main accent to occur near the end of a phrase or sentence. This is Bolinger’s notion of ‘accents of power’. This principle may actually be a composite of two more basic principles, namely a tendency to avoid having

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the main accent early in the sentence, and a tendency to put the main accent on content words. Given this ‘rightmost’ tendency, however, there appears to be a fairly sharp division between languages in which rightmost main accent is overwhelmingly the norm except in cases of explicit metalinguistic correction, and languages that allow the main accent to be placed earlier in the sentence for a variety of other reasons (including Bolinger’s ‘accents of interest’). In the former type, the neutral location of the main accent is rightmost in all or nearly all cases, and none of the factors we have been discussing – question vs. statement, relative informativeness, part of speech, definiteness, phonological headedness, etc. – plays any important role. These are Vallduví’s [–plastic] languages, such as Italian and Catalan. In the latter type – Vallduví’s [+plastic] languages such as English or Greek – the factors we have been discussing permit the main accent to occur further to the left. In Optimality Theory terms, the constraint by which the main accent must be rightmost would dominate most or all other sentence stress constraints in, say, Catalan, but would be dominated by other constraints related to informativeness in English, by constraints relating to question focus in Greek, by constraints related to phonological headedness in Hungarian, and so on.

In languages where the main accent is not exclusively on the rightmost content word, another obvious typological question is whether there is any systematic relationship among the various factors that draw accent to the left. For example, given the apparent parallel between YNQs and WHQs, it is tempting to try to relate their behaviour – and indeed, this is what I have implicitly done by treating both types in the same section. That is, it may be that some languages (e.g. Romanian and Hungarian) treat questions and statements differently for accentual purposes, while others (e.g. English and Italian) treat them alike. Alternatively, it may be that the accentual behaviour of YNQs and WHQs in any given language is independent: there may be languages that place the main accent on the verb in YNQs but treat WHQs like statements, and languages that place the main accent on the *WH*-word in WHQs but treat YNQs like statements. Superficially, it seems straightforward to determine whether such cases exist, but there are plenty of complications, such as the fact that WHQs in Bengali require a narrow focus tune (Hayes and Lahiri 1991: sec. 4.2), or the fact that focus in YNQs in Turkish is marked in the first instance by the question particle and only secondarily by sentence stress, or even the simple fact that in some languages *WH*-words appear at the beginning of the clause and in others they occupy positions ordinarily filled by argument noun phrases. Furthermore, there is not much reliable information about sentence stress in questions in many languages; typological research in this area lacks a broad empirical foundation.

Similarly, we might speculate that all the factors relating to accentability and informativeness – contextual deaccenting, the special treatment of indefinite pronouns and ‘empty’ nouns, and effects of definiteness – are systematically related to the differential treatment of arguments and predicates. For example, we might speculate that if a language treats predicates as less likely to be accented than arguments, it will also tend to deaccent contextually given material and exhibit variability in sentences involving indefinite pronouns or empty nouns. The basis for this speculation is Bolinger’s suggestion that the argument–predicate difference is a manifestation of the general relationship between accentuation and informativeness. As with accentuation in

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questions, it would seem straightforward to determine whether these dimensions of variation are independent, but once again there are complications ranging from the effect of sentence length on accentuation to the existence of different word-order patterns for predicates and arguments in different languages of the world. It therefore seems useful to re-emphasise how little we know about accentuation cross-linguistically. I believe that the exemplification of cross-linguistic differences given here, combined with the general expectation that typological variation should be highly constrained, provides a clear focus for empirical investigation.