
16 Intonation 2

16.1 The tone-unit

In Chapter 15 it was explained that many of the world's languages are tone languages, in which substituting one distinctive tone for another on a particular word or morpheme can cause a change in the dictionary ("lexical") meaning of that word or morpheme, or in some aspect of its grammatical categorisation. Although tones or pitch differences are used for other purposes, English is one of the languages that do not use tone in this way. Languages such as English are sometimes called **intonation languages**. In tone languages the main suprasegmental contrastive unit is the tone, which is usually linked to the phonological unit that we call the syllable. It could be said that someone analysing the function and distribution of tones in a tone language would be mainly occupied in examining utterances syllable by syllable, looking at each syllable as an independently variable item. In Chapter 15, five tones found on English one-syllable utterances were introduced, and if English were spoken in isolated monosyllables, the job of tonal analysis would be a rather similar one to that described for tone languages. However, when we look at continuous speech in English utterances we find that these tones can only be identified on a small number of particularly prominent syllables. For the purposes of analysing intonation, a unit generally greater in size than the syllable is needed, and this unit is called the **tone-unit**; in its smallest form the tone-unit may consist of only one syllable, so it would in fact be wrong to say that it is always composed of more than one syllable. The **tone-unit** is difficult to define, and one or two examples may help to make it easier to understand the concept. As explained in Chapter 15, examples used to illustrate intonation transcription are usually given in spelling form, and you will notice that no punctuation is used; the reason for this is that intonation and stress are the vocal equivalents of written punctuation, so that when these are transcribed it would be unnecessary or even confusing to include punctuation as well.

⌚ AU16 (CD 2), Exs 1 & 2

Let us begin with a one-syllable utterance:

/you

We underline syllables that carry a tone, as explained at the end of the previous chapter. Now consider this utterance:

is it /you

The third syllable is more prominent than the other two and carries a rising tone. The other two syllables will normally be much less prominent, and be said on a level pitch. Why do we not say that each of the syllables 'is' and 'it' carries a level tone? This is a difficult question that will be examined more fully later; for the present I will answer it (rather unsatisfactorily) by saying that it is unusual for a syllable said on a level pitch to be so prominent that it would be described as carrying a level *tone*. To summarise the analysis of 'is it /you' so far, it is an utterance of three syllables, consisting of one tone-unit; the only syllable that carries a tone is the third one. From now on, a syllable which carries a tone will be called a **tonic syllable**. It has been mentioned several times that tonic syllables have a high degree of prominence; prominence is, of course, a property of stressed syllables, and a tonic syllable not only carries a tone (which is something related to intonation) but also a type of stress that will be called **tonic stress**. (Some writers use the terms **nucleus** and **nuclear stress** for *tonic syllable* and *tonic stress*.)

The example can now be extended:

√John is it /√you

A fall-rise tone is used quite commonly in calling someone's name. If there is a clear pause (silence) between '√John' and 'is it /√you', then, according to the definition of an utterance given in Chapter 15, there are two utterances; however, it is quite likely that a speaker would say '√John is it /√you' with no pause, so that the four syllables would make up a single utterance. In spite of the absence of any pause, the utterance would normally be regarded as divided into two tone-units: '√John' and 'is it /√you'. Since it is very difficult to lay down the conditions for deciding where the boundaries between tone-units exist, the discussion of this matter must wait until later.

It should be possible to see now that the tone-unit has a place in a range of phonological units that are in a hierarchical relationship: speech consists of a number of utterances (the largest units that we shall consider); each utterance consists of one or more tone-units; each tone-unit consists of one or more feet; each foot consists of one or more syllables; each syllable consists of one or more phonemes.

16.2 The structure of the tone-unit

In Chapter 8 the structure of the English syllable was examined in some detail. Like the syllable, the tone-unit has a fairly clearly defined internal structure, but the only component that has been mentioned so far is the tonic syllable. The first thing to be done is to make more precise the role of the tonic syllable in the tone-unit. Most tone-units are of a type that we call **simple**, and the sort that we call **compound** are not discussed in this chapter. Each simple tone-unit has one and only one tonic syllable; this means that the tonic syllable is an obligatory component of the tone-unit. (Compare the role of the vowel in the syllable.) We will now see what the other components may be.

The head

Consider the following one-syllable utterance:

\ those

We can find the same tonic syllable in a long utterance (still of one tone-unit):

'give me \ those

The rest of the tone-unit in this example is called the **head**. Notice that the first syllable has a stress mark: this is important. A head is all of that part of a tone-unit that extends from the first stressed syllable up to (but not including) the tonic syllable. It follows that if there is no stressed syllable before the tonic syllable, there cannot be a head. In the above example, the first two syllables (words) are the head of the tone-unit. In the following example, the head consists of the first five syllables:

'Bill 'called to 'give me \ these

As was said a little earlier, if there is no stressed syllable preceding the tonic syllable, there is no head. This is the case in the following example:

in an \ hour

Neither of the two syllables preceding the tonic syllable is stressed. The syllables 'in an' form a **pre-head**, which is the next component of the tone-unit to be introduced.

The pre-head

The pre-head is composed of all the unstressed syllables in a tone-unit preceding the first stressed syllable. Thus pre-heads are found in two main environments:

- i) when there is no head (i.e. no stressed syllable preceding the tonic syllable), as in this example:

in an \ hour

- ii) when there is a head, as in this example:

in a 'little 'less than an \ hour

In this example, the pre-head consists of 'in a', the head consists of 'little 'less than an', and the tonic syllable is \ hour.

The tail

It often happens that some syllables follow the tonic syllable. Any syllables between the tonic syllable and the end of the tone-unit are called the **tail**. In the following examples, each tone-unit consists of an initial tonic syllable and a tail:

\ look at it

/ what did you say

\ both of them were here

When it is necessary to mark stress in a tail, we will use a special symbol, a raised dot · for reasons that will be explained later. The above examples should, then, be transcribed as follows:

\\look at it /\\what did you ·say \\both of them were ·here

This completes the list of tone-unit components. If we use brackets to indicate optional components (i.e. components which may be present or may be absent), we can summarise tone-unit structure as follows:

(pre-head) (head) tonic syllable (tail)

or, more briefly, as:

(PH) (H) TS (T)

To illustrate this more fully, let us consider the following passage, which is transcribed from a recording of spontaneous speech (the speaker is describing a picture). When we analyse longer stretches of speech, it is necessary to mark the places where tone-unit boundaries occur – that is, where one tone-unit ends and another begins, or where a tone-unit ends and is followed by a pause, or where a tone-unit begins following a pause. It was mentioned above that tone-units are sometimes separated by silent pauses and sometimes not; pause-type boundaries can be marked by double vertical lines (||) and non-pause boundaries with a single vertical line (|). In practice it is not usually important to mark pauses at the beginning and end of a passage, though this is done here for completeness. The boundaries within a passage are much more important.

|| and then 'nearer to the \\front || on the /\\left | theres a 'bit of \\forest | 'coming
'down to the \\waterside || and then a 'bit of a /\\bay ||

We can mark their structure as follows (using dotted lines to show divisions between tone-unit components, though this is only done for this particular example):

| | | | | | | | | | | | | |
|---|------------|---|----------------|---|---------|---|----------------------|---|---------|---|----------|---|
| | PH | : | H | : | TS | | PH | : | TS | : | PH | : |
| | and then | : | 'nearer to the | : | \\front | | on the | : | /\\left | : | theres a | : |
| : | H | : | TS | : | T | : | H | : | TS | : | T | : |
| | 'bit of | : | \\for | : | est | | 'coming 'down to the | : | \\wa | : | terside | : |
| : | PH | : | H | : | TS | : | | : | | : | | : |
| | and then a | : | 'bit of a | : | /\\bay | | | : | | : | | : |

The above passage contains five tone-units. Notice that in the third tone-unit, since it is the syllable rather than the word that carries the tone, it is necessary to divide the word 'forest' into two parts, 'for-' for and '-est' est; in the fourth tone-unit the word 'waterside' is

divided into 'wa-' wə: (the tonic syllable) and '-terside' təsaɪd (tail). This example shows clearly how the units of phonological analysis can sometimes be seen to differ from those of grammatical analysis.

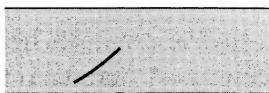
16.3 Pitch possibilities in the simple tone-unit

It has been said several times in this chapter that tone is carried by the tonic syllable, and it is now necessary to examine this statement more carefully. Before doing this, another general statement will be made (and will also need further explanation): intonation is carried by the tone-unit.

In a one-syllable utterance, the single syllable must have one of the five tones described in Chapter 15. In a tone-unit of more than one syllable, the tonic syllable must have one of those tones. If the tonic syllable is the final syllable, the tone will not sound much different from that of a corresponding one-syllable tone-unit. For example, the word 'here' will be said in much the same way in the following two utterances:

∕here 'shall we 'sit ∕here

However, if there are other syllables following the tonic syllable (i.e. there is a tail), we find that the pitch movement of the tone is not completed on the tonic syllable. If a tail follows a tonic syllable that has a rising tone, it will almost always be found that the syllable or syllables of the tail will continue to move upwards from the pitch of the tonic syllable. For example, if the word 'what' is said on a rising tone, '∕what', it might have a pitch movement that could be diagrammed like this:

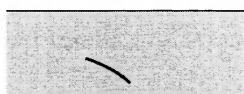


The four syllables in '∕what did you say' might be said like this:



with the pitch of the syllables in the tail getting progressively higher. In such cases, the tonic syllable is the syllable on which the pitch movement of the tone begins, but that pitch movement is completed over the rest of the tone-unit (i.e. the tail). If, in rising progressively higher, the pitch reaches the highest part of the speaker's normal pitch range, subsequent syllables will continue at that top level.

We find a similar situation with the falling tone. On a single syllable '∖why', the pitch movement might be of this sort:



but if there are syllables following, the fall may not be completed on the tonic syllable:

\ why did you ·go



Again, if the speaker's lowest pitch is reached before the end of the tail, the pitch continues at the bottom level. In the case of a level tone, syllables following in the tail will continue at the same level; since level tone is to be treated as a rather unusual type of tone, we will not examine it in more detail at this stage. The situation is more complicated when we have a tail following a fall–rise or a rise–fall, and this is described in Chapter 17.

Notes on problems and further reading

It would not be useful (unless you are doing research on the subject) to go into all the different ways in which English intonation has been represented, but it is worth noting that simpler approaches have been used in the past. In the earlier part of the last century, a common approach was to treat all the pitch movement in the tone-unit as a single “tune”; Tune 1 was typically descending and ending in a fall, while Tune 2 ended up rising (I was taught French intonation in this way in the 1960s). In more modern work, we can see that it is possible to represent intonation as a simple sequence of tonic and non-tonic stressed syllables, and pauses, with no higher-level organisation; an example of this is the transcription used in the Spoken English Corpus (Williams, 1996). Brown (1990, Chapter 5) uses a relatively simple analysis of intonation to present valuable examples of authentic recorded speech. Most contemporary British analyses, however, use a unit similar or identical to what I call a tone-unit divided into components such as pre-head, head, tonic syllable and tail. Different writers use different names: “tone-group”, “intonation-group”, “sense-group”, “intonation unit” and “intonation phrase (IP)” are all more or less synonymous with “tone-unit”. Good background reading on this is Cruttenden (1997: 26–55).

Note for teachers

The move from tones to tone-units is a difficult one, and I feel it is advisable at this stage to use only slow, careful speech for exercises (Audio Units 15 and 16). More difficult exercises with more natural speech follow later (Audio Units 18 and 19).

Written exercises

- 1 Here is a list of single tonic syllables. Add a number of extra syllables (as specified by the number in brackets) to make a tail. Example: go (2); Example answer: go for it
 - a) buy (3)
 - b) hear (1)
 - c) talk (2)

(The answers section gives some possible versions.)

2 Now expand the following tonic syllables by putting heads in front of them, containing the number of stressed syllables indicated in brackets. Example: (2) dark; Example answer: 'John was a'fraid of the dark

a) (1) step

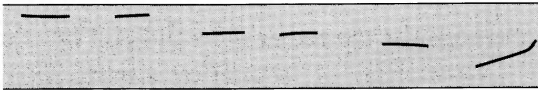
b) (3) train

c) (2) hot

3 The following sentences are given with intonation transcribed. Draw underneath them a diagram of the pitch movements, leaving a gap between each syllable.

Example:

'Would you 'like some 'more /milk



a) 'Only when the vwind ·blows

b) /When did you ·say

c) 'What was the \uname of the ·place
