

## 17 Intonation 3

In Chapter 16 the structure of the tone-unit was introduced and it was explained that when a tonic syllable is followed by a tail, that tail continues and completes the tone begun on the tonic syllable. Examples were given to show how this happens in the case of rising and falling tones. We now go on to consider the rather more difficult cases of fall-rise and rise-fall tones.

### 17.1 Fall-rise and rise-fall tones followed by a tail

🔊 AU17 (CD 2), Exs 1 & 2

A rising or a falling tone is relatively easy to identify, whether it falls on a single syllable or extends over more syllables in the case of a tonic syllable followed by a tail. Fall-rise and rise-fall tones, however, can be quite difficult to recognise when they are extended over tails, since their characteristic pitch movements are often broken up or distorted by the structure of the syllables they occur on. For example, the pitch movement on ‘some’ will be something like this:



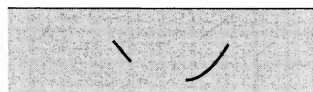
If we add a syllable, the “fall” part of the fall-rise is usually carried by the first tonic syllable and the “rise” part by the second. The result may be a continuous pitch movement very similar to the one-syllable case, if there are no voiceless medial consonants to cause a break in the voicing. This would give a pitch movement that we could draw like this:

vsome ·men



If the continuity of the voicing is broken, however, the pitch pattern might be more like this:

vsome ·chairs



In this case it would be possible to say that there is a falling tone on 'some' and a rise on 'chairs'. However, most English speakers seem to feel that the pitch movement in this case is the same as that in the previous two examples. It can be said that there is a parallel with rhyming: just as 'balloon' rhymes with 'moon', so we might say that 'vsome chairs' has what could be called a **tonal rhyme** with 'vsome'. For the rest of the chapter we will continue to break the pitch movement diagrams with gaps between syllables to make them easier to read, including cases where the voicing is continuous.

If there is a tail of two or more syllables, the normal pitch movement is for the pitch to fall on the tonic syllable and to remain low until the last stressed syllable in the tail. The pitch then rises from that point up to the end of the tone-unit. If there is no stressed syllable in the tail, the rise happens on the final syllable. Here are some examples:

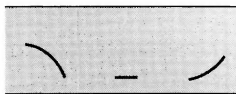
i) I vmight ·buy it



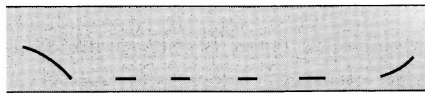
I vmight have ·thought of ·buying it



ii) vmost of them

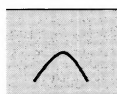


vmost of it was for them

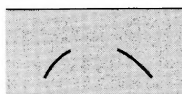


With the rise-fall tone we find a similar situation: if the tonic syllable is followed by a single syllable in the tail, the "rise" part of the tone takes place on the first (tonic) syllable and the "fall" part is on the second. Thus:

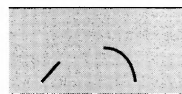
^no



^no one



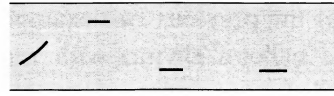
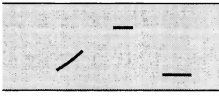
^no sir



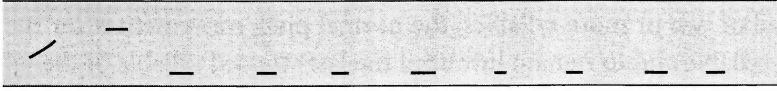
When there are two or more syllables in the tail, the syllable immediately following the tonic syllable is always higher and any following syllables are low. For example:

^beau ti ful

^all of them ·went



^thats a ·nice ·way to ·speak to your ·mother



It should be clear by now that the speaker does not have a choice in the matter of the pitch of the syllables in the tail. This is completely determined by the choice of tone for the tonic syllable.

## 17.2 High and low heads

Ⓞ AU17 (CD 2), Ex 3

The head was defined in Chapter 16 as “all that part of a tone-unit that extends from the first stressed syllable up to, but not including, the tonic syllable”. In our description of intonation up to this point, the only pitch contrasts found in the tone-unit are the different possible choices of tone for the tonic syllable. However, we can identify different pitch possibilities in the head, although these are limited to two which we will call **high head** and **low head**. In the case of the high head, the stressed syllable which begins the head is high in pitch; usually it is higher than the beginning pitch of the tone on the tonic syllable. For example:

the 'bus was \late

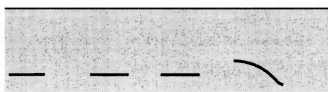
is 'that the /end



In the low head the stressed syllable which begins the head is low in pitch; usually it is lower than the beginning pitch of the tone on the tonic syllable. To mark this stressed syllable in the low head we will use a different symbol,  $\downarrow$ , as in ‘low’. As an example, the heads of the above sentences will be changed from high to low:

the  $\downarrow$ bus was \late

is  $\downarrow$ that the /end



The two different versions (high and low head) will usually sound slightly different to native-speaker listeners, although it is not easy to say just what the difference is, as will be made clear in Chapter 18.

It is usual for unstressed syllables to continue the pitch of the stressed syllable that precedes them. In the following example, the three unstressed syllables 'if it had' continue at the same pitch as the stressed syllable 'asked'.

i) with high head

we 'asked if it had \ come



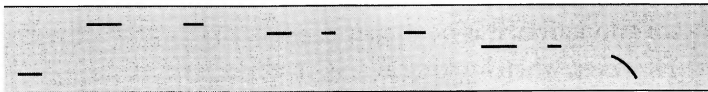
ii) with low head

we ,asked if it had \ come



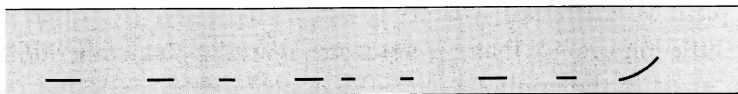
When there is more than one stressed syllable in the head there is usually a slight change in pitch from the level of one stressed syllable to that of the next, the change being in the direction of the beginning pitch of the tone on the tonic syllable. We will use some long examples to illustrate this, although heads of this length are not very frequently found in natural speech. In the first example the stressed syllables in the high head step downwards progressively to approach the beginning of the tone:

the 'rain was 'coming 'down 'fairly \ hard



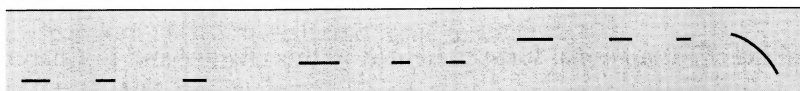
In the next example the head is low; since the tone also starts low, being a rise, there is no upward movement in the head:

,thats ,not the ,story you ,told in / court



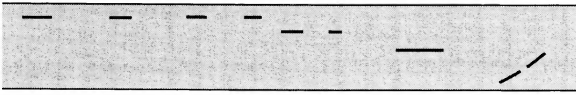
When there is a low head followed by a falling tone, successive stressed syllables in the head tend to move upwards towards the beginning pitch of the tone:

,I could have ,bought it for ,less than a \ pound



When a high head is followed by a rise the stressed syllables tend to move downwards, as one would expect, towards the beginning pitch of the tone:

'will there be a'nother 'train /later



When we examine the intonation of polysyllabic heads we find much greater variety than these simple examples suggest. However, the division into high and low heads as general types is probably the most basic that can be made, and it would be pointless to set up a more elaborate system to represent differences if these differences were not recognised by most native speakers. Some writers on intonation claim that the intonation pattern starting at a fairly high pitch, with a gradual dropping down of pitch during the utterance, is the most basic, normal, “unmarked” intonation pattern; this movement is often called **declination**. The claim that declination is universally unmarked in English, or even in all languages, is a strong one. As far as English is concerned, it would be good to see more evidence from the full range of regional and national varieties in support of the claim.

It should be noted that the two marks ' and ˊ are being used for two different purposes in this course, as they are in many phonetics books. When stress is being discussed, the ' mark (blue type) indicates primary stress and ˊ indicates secondary stress. For the purposes of marking intonation, however, the mark ' (black type) indicates a stressed syllable in a high head and the mark ˊ indicates a stressed syllable in a low head. In practice this is not usually found confusing as long as one is aware of whether one is marking stress levels or intonation, and the colour difference helps to distinguish them. When the high and low marks ' and ˊ are being used to indicate intonation, it is no longer possible to mark two different levels of stress within the word. However, when looking at speech at the level of the tone-unit we are not usually interested in this; a much more important difference here is the one between tonic stress (marked by underlining the tonic syllable and placing before it one of the five tone-marks) and non-tonic stressed syllables (marked ' or ˊ in the head or · in the tail).

It needs to be emphasised that in marking intonation, only stressed syllables are marked; this implies that intonation is carried entirely by the stressed syllables of a tone-unit and that the pitch of unstressed syllables is either predictable from that of stressed syllables or is of so little importance that it is not worth marking. Remember that the additional information given in the examples above by drawing pitch levels and movements between lines is only included here to make the examples clearer and is not normally given with our system of transcription; all the important information about intonation must, therefore, be given by the marks placed in the text.

### 17.3 Problems in analysing the form of intonation

The analysis of intonational form presented in this chapter and in Chapters 15 and 16 is similar in most respects to the approaches used in many British studies of English


intonation. There are certain difficulties that all of these studies have had to confront, and it is useful to give a brief summary of what the major difficulties are.

### Identifying the tonic syllable

It is often said that the tonic syllable can be identified because it is the only syllable in the tone-unit that carries a movement in pitch; this is in fact not always true. We have seen how when the tonic syllable is followed by a tail the tone is carried by the tonic plus tail together in such a way that in some cases practically no pitch movement is detectable on the tonic syllable itself. In addition, it has been claimed that one of the tones is the *level* tone, which by definition may not have any pitch movement. It is therefore necessary to say in this particular case that the tonic syllable is identified simply as the most prominent syllable.

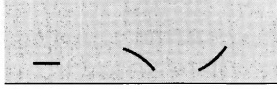
In addition, it sometimes seems as if some tone-units (though only a small number, known as compound tone-units) contain not one but two tonic syllables, almost always with the first syllable having a fall on it and the other a rise. An example is:

Ive \seen /him

i) 

In this example there seems to be equal prominence on 'seen' and 'him'. It could be claimed that this is the same thing as:

Ive vseen him

ii) 

It has, however, been pointed out that the two versions are different in several ways. Since 'him' has greater prominence in (i), it cannot occur in its weak form *ɪm*, but must be pronounced *hɪm*, whereas in (ii) the pronunciation is likely to be *aɪv vsi:n ɪm*. The two versions are said to convey different meanings, too. Version (i) might be said in conversation on hearing someone's name, as in this example:

A: 'John 'Cleese is a 'very 'funny \actor

B: 'Oh \yes | Ive \seen /him

In version (ii), on the other hand, the word 'seen' is given the greatest prominence, and it is likely to sound as though the speaker has some reservation, or has something further to say:

A: 'Have you 'seen my /father ·yet

B: Ive vseen him | but I 'havent had 'time to \talk to him

The same is found with 'her', as in:

Ive \ seen / heraɪv \ si:n / hɜ:

compared with:

Ive v seen heraɪv v si:n ə

This is a difficult problem, since it weakens the general claim made earlier that each tone-unit contains only one tonic syllable.

### Identifying tone-unit boundaries

It is a generally accepted principle in the study of grammar that utterances may contain one or more sentences, and that one can identify on grammatical grounds the places where one sentence ends and another begins. In a similar way, in suprasegmental phonology it is claimed that utterances may be divided up into tone-units, and that one can identify on phonetic or phonological grounds the places where one tone-unit ends and another tone-unit begins. However, giving rules for identifying where the boundaries are placed is not easy, except in cases where a clear pause separates tone-units. Two principles are usually mentioned: one is that it is possible in most cases to detect some sudden change from the pitch level at the end of one tone-unit to the pitch level that starts the following tone-unit, and recognition of the start of the following tone-unit is made easier by the fact that speakers tend to “return home” to a particular pitch level at the beginning of a tone-unit. The second principle used in tone-unit boundary identification is a rhythmical one: it is claimed that within the tone-unit, speech has a regular rhythm, but that rhythm is broken or interrupted at the tone-unit boundary. Both the above principles are useful guides, but one regularly finds, in analysing natural speech, cases where it remains difficult or impossible to make a clear decision; the principles may well be factually correct, but it should be emphasised that at present there is no conclusive evidence from instrumental study in the laboratory that they are.

### Anomalous tone-units

However comprehensive one's descriptive framework may be (and the one given in this course is very limited), there will inevitably be cases which do not fit within it. For example, other tones such as fall–rise–fall or rise–fall–rise are occasionally found. In the head, we sometimes find cases where the stressed syllables are not all high or all low, as in the following example:

ˌAfter ˌone of the 'worst 'days of my vlife

It can also happen that a speaker is interrupted and leaves a tone-unit incomplete – for example, lacking a tonic syllable. To return to the analogy with grammar, in natural speech one often finds sentences which are grammatically anomalous or incomplete, but this does not deter the grammarian from describing “normal” sentence structure. Similarly,

although there are inevitably problems and exceptions, we continue to treat the tone-unit as something that can be described, defined and recognised.

#### 17.4 Autosegmental treatment of intonation

In recent years a rather different way of analysing intonation, sometimes referred to as **autosegmental**, has become quite widely used, especially in American work. We will look briefly at this, in a simplified account that tries to introduce some basic concepts. In the autosegmental approach, all intonational phenomena can be reduced to just two basic phonological elements: H (high tone) and L (low tone). A movement of pitch from high to low (a fall) is treated as the sequence HL. Individual stressed (“accented”) syllables must all be marked as H or L, or with a combination marking a pitch movement, and with an asterisk \* following the syllable. In addition, H and L tones are associated with boundaries. A major tone-unit boundary (equivalent to what we have been marking with ||) is given the symbol %, but it must also be given a H or a L tone. Let us take an utterance like ‘It’s time to leave’, which might be pronounced

its 'time to \underline{leave} (using our usual transcription)

The basic parts of the alternative transcription might look like this (the tone symbols may be placed above or below the line, aligned with the syllables they apply to):

H\*    H\*L%  
its time to leave

Instead of marking a falling tone on the word ‘leave’, the high-pitched part of the word is shown by the H and the low part by the L associated with the boundary %. There is another boundary (corresponding to the minor tone-unit boundary |) which is marked with –, and again this must be marked with either an H or an L. There must always be one of these boundaries marked before a % boundary. So, the following utterance would be transcribed like this in the system introduced in this book:

we ,looked at the /\underline{sky} | and 'saw the \underline{clouds}

and in this way using autosegmental transcription:

L\*            L\*H–    H\*    H\* L–L%  
we looked at the sky and saw the clouds

How would this approach deal with complex tones spread over several syllables?

H\*            L–H%  
v\underline{most} of them    could be transcribed    most of them

Although this type of analysis has some attractions, especially in the way it fits with contemporary phonological theory, it seems unlikely that it would be more useful to learners of English than the traditional analysis presented in this book.



## Notes on problems and further reading

The main concern of this chapter is to complete the description of intonational form, including analysis of perhaps the most difficult aspect: that of recognising fall–rise and rise–fall tones when they are extended over a number of syllables. This is necessary since no complete analysis of intonation can be done without having studied these “extended tones”.

Cruttenden (1997: Chapters 3 and 4) gives a good introduction to the problems of analysing tones both within the traditional British framework and in autosegmental terms. On tone-unit boundaries, there is a clear explanation of the problems in Cruttenden (1997: Section 3.2), and in more detail in Crystal (1969: 204–7). A study of Scottish English by Brown *et al.* (1980) gives ample evidence that tone-units in real life are not as easy to identify as tone-units in textbooks.

Some writers follow Halliday (1967) in using the terms **tone**, **tonality** and **tonicity** (the “three Ts”) to refer (respectively) to tone, to the division of speech into tone-units and to the placement of the tonic syllable; see for example Tench (1996), Wells (2006). In my experience people find it difficult to remember which is which, so I don’t use these terms.

There has recently been a growth of interest in the comparative study of intonation in different languages and dialects: see Cruttenden (1997: Chapter 5); Hirst and di Cristo (1998); Ladd (1996: Chapter 4).

On declination, see Cruttenden (1997: 121–3).

For reading on autosegmental analysis (often given the name **ToBI**, which stands for **Tones and Break Indices**), a good introduction is Cruttenden (1997: 56–67). A fuller and more critical analysis can be read in Ladd (1996: Chapters 2 and 3); see also Roca and Johnson (1999: Chapter 14). A short account of the problems found in trying to compare this approach with the traditional British analysis is given in Roach (1994). ToBI is essentially a computer-based transcription system, and more information about it is provided on this book’s website.

## Note for teachers

I would like to emphasise how valuable an exercise it is for students and teachers to attempt to analyse some recorded speech for themselves. For beginners it is best to start on slow, careful speech – such as that of newsreaders – before attempting conversational speech. One can learn more about intonation in an hour of this work than in days of reading textbooks on the subject, and one’s interest in and understanding of theoretical problems becomes much more profound.

## Written exercises

- 1 The following sentences are given with intonation marks. Sketch the pitch within the lines below, leaving a gap between each syllable.

a) 'Which was the /cheap one did you ·say

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b) I 'only 'want to vtaste it

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c) ,She would have ,thought it was ^obvious

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d) There 'wasnt 'even a 'piece of \ bread in the ·house

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e) \ Now will you be·lieve me

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2 This exercise is similar, but here you are given polysyllabic words and a tone. You must draw an appropriate pitch movement between the lines.

a) (rise) opportunity

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d) (rise-fall) magnificent

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b) (fall-rise) actually

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e) (rise) relationship

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c) (fall) confidently

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f) (fall-rise) afternoon

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