

**Contribution of the Work on English Intonation
to the Study of Arabic Intonation**

by

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Submitted in accordance with the requirements for the degree of
Doctor of Philosophy

The University of Leeds
Department of Linguistics and Phonetics

December 1999

The candidate confirms that the work submitted is his own and that appropriate credit
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*To my Father and Mother who instilled in me the love
for education.*

Brief Reading Conventions Pertaining to Arabic Sounds:

1) Consonants:

ʔ glottal stop

θ voiceless, dental, non-sulcal fricative

ð voiced, dental, non-sulcal fricative.

ʃ voiceless, dento-alveolar, sulcal, emphatic fricative.

ʤ voiced, dento-alveolar, emphatic stop.

ʧ voiceless, dento-alveolar, emphatic stop.

ʢ voiced, dental, non-sulcal, emphatic fricative

ʃ̣ voiceless alveo-palatal, sulcal, non-emphatic fricative

ʤ̣ voiced, palato-alveolar affricate

ħ voiceless, pharyngeal fricative

ʕ voiced, pharyngeal fricative

x voiceless, uvular fricative

ʁ voiced, uvular fricative

q voiceless, uvular stop

2) Vowels

Each vowel symbol stands for a range of vocalic sounds of the type indicated. Long vowels are shown by doubled letters, e.g./aa/ stands for a long front open vowel.

i Front, close, spread.

a Front, open, neutral

a Back, open, neutral

u Back, close, rounded.

3) **In this thesis only a limited number of marks are used, as follows:**

/ for an intonation-group boundary

↘
for a fall from high to low (a 'high-fall')

↘
for a fall from mid to low (a 'low-fall')

↗
for a rise ending high (a 'high-rise')

↗
for a rise ending mid (a low-rise')

↘
for a fall-rise

↗
for a rise-fall

> for a mid-level

|
for an accented syllable

Abstract

This thesis examines the intonation of Jordanian Arabic in the light of work on English intonation.

After discussing some general principles in the study of intonation, the work analyses in detail some major contributions to the study of English intonation, especially the work of Pike, Kingdon, O'Connor and Arnold, Halliday, Liberman, Pierrehumbert, and Ladd. The insights gained from these works are applied to data from Jordanian Arabic.

Jordanian Arabic intonation is analysed firstly in phonological terms, establishing the units of intonation contrast and the tonal distinctions. The latter are examined in detail, and four major primary types are recognised: Fall, Rise, Fall-Rise, and Rise-Fall. These are illustrated from the data, supplemented with further examples based on the writer's knowledge of the language.

The thesis goes on to investigate the grammatico-attitudinal function of intonation in Jordanian Arabic, examining the intonation of different sentence types, including statements, commands, exclamations and questions, and different kinds of sentence structures, such as subordinating and co-ordinating sentences. The discoursal function of intonation is then investigated, with an examination in particular of the role of tonicity.

The work concludes with a summary of some of the major differences between the intonation of this variety of Arabic and that of English.

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Acknowledgement

I would like first and foremost to express my most sincere thanks to my supervisor: Dr. A.T.C.Fox, Head of the Department of Linguistics and Phonetics. Dr. Fox's indefatigable support and encouragement went beyond the casual relationship between supervisor and student. His assistance is most appreciated.

I am also grateful to all the members of staff in the Department who helped me establish a firm footing in Linguistics. The secretary of the Department, Mrs.Colman, was so kind and helpful and I am grateful to her too.

Finally, I would like to thank Mu'tah University of Jordan for their generous financial support which enabled me to pursue this course of study.

CHAPTER 1

INTRODUCTION

1.1 Study Rationale

In spite of the fact that much has been written about English intonation, yet this topic is still in need of further research. Nevertheless, English intonation is now fairly well-charted -there are rich and varied works dealing with the topic on both sides of the Atlantic (cf Pike (1945), Kingdon (1958), O'Connor and Arnold (1973), Halliday (1967), Crystal (1969a), Bolinger (1986, 1989), Ladd (1980,1996), Pierrehumbert (1980), to mention just a few significant works).

Arabic, a Semitic language, has not been systematically subjected to research insofar as intonation is concerned. The scarcity of literature on this topic in Arabic studies perhaps emanates from the fact that intonation is a complex phenomenon, and few Arab scholars have ventured to investigate this phenomenon.

But the challenge is well worth facing. After all, Arabic intonation, no less than English intonation, lends itself to 'scientific' research and investigation. Moreover, the role it plays in signalling meaning and meaningful contrasts in spoken Arabic, as well as in Arabic read aloud, is easy to recognise and objectively demonstrate. A couple of examples will illustrate the point.

1. (a) \haakaḏaa (Standard Arabic) '(In) This way/ manner'

(b) /haakaḏaa (Standard Arabic) 'In this way!?'

1(a) is said on a falling tone to express a directive, while 1(b), on a rise, expresses a surprise or a question.

2. (a) ʔayna Itaḡaytum ? 'Where did you (p1.) meet?

(b) ʔayna Itaḡaytum ? 'Where did you (p1.) meet?'

2(a) is an unmarked information question, but 2(b) is a response to the addressees foregoing utterance. 2(b) expresses one or both of the following meanings:

- (i) the message provokes interest and surprise,
- (ii) the message was not fully comprehended, hence a repeat is called for.

The wealth of literature on English intonation motivates one to examine the contribution such literature may have for studying Arabic intonation. In turn, the latter may enrich the 'theory' of intonation: evidence from this Semitic language may be attested to corroborate principles, ideas, features reached by scholars of intonation in other languages. Furthermore, language specific intonational features, where applicable, will facilitate the task of the learner of Arabic as a foreign or second language as well as the task of the researcher investigating this language which is spoken by millions of Arabs in Asia and Africa, not to mention the fact that it is the language of a significant world culture.

The study of Arabic intonation in the light of works on English intonation should add something worthwhile to the state of the art, and hopefully, encourage scholars in the Arab world to pursue this topic and establish refinements conducive to the advancement of the study of language.

1.2 Which Arabic?

Arabic is not a homogeneous language; it comprises a continuum of interdependent varieties

including the following:

(i) Colloquial Arabic, the mother-tongue of Arab children.

Colloquial Arabic is the variety which is spoken at home. It serves the daily functions of the family including domestic talks between members of the closely-knit family, between customer and shopkeeper in the market, between neighbours, etc. Although it is stigmatized, it is undoubtedly a powerful and convenient means of communication. Arab children are first exposed to it. It is truly their mother-tongue.

Colloquial Arabic varies from one Arab State to another, so that we have, for instance, Egyptian colloquials, Iraqi colloquials, Jordanian colloquials, etc. Note that within the same political state in the Arab world, there are colloquial Arabic variations, hence one can identify differences between Cairene colloquial, say, and the colloquial of Southern Egypt, or between the colloquial of Irbid, north of Jordan and Máan, south of Jordan. These differences do not obstruct intelligibility in the same country, but it must not be assumed that the local dialect in a Tunisian town is mutually intelligible with the local dialect in a Jordanian town. Certain phonological features, grammatical features and, notably, lexical features are not shared and these often result in a breakdown of inter-Arab communication via the local dialects. Pan-Arab oral communication, however, is carried out via other varieties of Arabic, principally Educated Spoken Arabic and Modern Standard Arabic.

(ii) Modern Standard Arabic (MSA)

This is the standard, highly codified form of Arabic most commonly manifested in the written form, but it lends itself to expression via the spoken medium. It is the modern, formal, official

language of all the Arab states. It has a standardized grammar, a phonological system which is to all intents and purposes common to all the Arab countries and a common pan-Arab orthographical system. It also has a very rich lexicon on which Arabs draw for written and scripted communication. It is the official language of the Arab states, and the language of the mass media, especially the press. All the Arabic newspapers, periodicals, books, legal documents, formal letters, written agreements, etc. use MSA. The news is cast in this variety on radio and TV. Arabic literature is mainly written in this variety. It is mutually intelligible throughout the Arab world. It serves all the written functions of the state. But it sounds rather strange if demoted to the domestic functions of the Arab family; the latter functions are best served by the local dialect or colloquial, as mentioned above. MSA is prestigious.

(iii) Classical Arabic

This too, is a most highly codified and prescriptively standardized variety of Arabic. It is essentially the language of the Holy Quran and the classical tradition of Prophet Muhammad's hadiths (i.e. sayings) and the explanations and annotations of the Holy Quran and the hadiths.

Insofar as grammar, phonology and orthography are concerned, Classical Arabic and MSA are inseparable. But the lexicon of classical Arabic is distinct as it contains Arabic words which are not current in MSA. The average educated Arab will not readily comprehend the semantic content of these words and usually resorts to an Arabic lexicon to look them up. Because it is the language of the Holy Book and the prophet's hadiths, Classical Arabic commands the reverence and respect of all Muslims and is held in the highest degree of esteem; it is very prestigious indeed.

(iv) **Educated Spoken Arabic (ESA)**

This is a significant variety of Arabic which is acquired as a result of schooling and education; it is not established in early childhood, but the essentials of its phonological system (vowels, consonants, stress, rhythm and intonation) are almost identical with those of the colloquial variety. Some phonological refinements may be added as a result of education, e.g. certain intonational tones which have to do with comparatively long stretches of utterances.

Education is necessary for the acquisition of this variety of Arabic. By education is meant any desirable change of behaviour resulting from interaction within and between such socio-cultural institutions as the school, the college, the peer group, the mosque, the club, etc. The mass media of communication play an important role in the acquisition of this form of Arabic.

It is not easy to find an accurate and embracing definition of ESA, but it has been defined by El-Hassan (1978:48) as follows:

"Now ESA may be regarded as some form of Arabic representing the spontaneous, unscripted speech patterns of educated Arabs in a variety of social contexts. This variety of spoken Arabic is recognized (at least impressionistically) by educated native speakers of Arabic as representing their own spontaneous speech patterns; but, understandably, the average educated Arab is incapable of describing the formal and functional characteristics of ESA. The evident circularity of the above working definition of ESA should not be a cause for concern at this stage. Faced with the very similar question of defining 'Educated English', Randolph Quirk (1968: 79) puts it as follows:

"A working definition like 'Educated English' is English that is recognised as such by educated native English speakers is not as valueless as its circularity would suggest."

Although ESA shares linguistic features with both MSA and colloquial Arabic, there are many descriptive and functional characteristics which justify the recognition of ESA as a level in the

Arabic continuum¹

The present study draws heavily on ESA as spoken in Jordan and Palestine. Virtually all the examples cited come from the spontaneous, unscripted speech of educated Arabs in this region. In addition, some examples are taken from formal, scripted texts read aloud by people from the region e.g. radio and television news bulletins. Needless to say, the writer's native intuitions also constitute another source for producing utterances to be analysed for the purpose in hand.

1.3 The nature of Intonation

The description of prosodic systems, intonation in particular is perhaps one of the most intractable in phonological studies. The wide divergence of views and lack of general consensus on how to go about the study of it coupled with an unfortunate theoretical confusion prevalent in the work on the subject to a large extent vindicate this claim. This is understandable writes Crystal (1969a: 2) "when one considers the difficulties involved in subjecting this aspect of language to analysis – problems of obtaining reliable information, of defining the range of variables affecting any semantic interpretation, and of identifying and measuring such elusive phenomena as pitch."

Intonation, one must hasten to add, is a highly complex and highly elusive phenomenon, phonetically and phonologically (i.e. functionally) speaking, a fact which renders its analysis almost bedevilling. It is of little wonder then that there should always remain a misty air of uncertainty and enigma shrouding its analysis. In this brief overview into the nature of

¹ For further details cf: Mitchell (1975), 'Some preliminary observations on the Arabic Koine in British Society for Middle Eastern Studies, The Bulletin, 2.2, 70-86 and Mitchell (1978) 'Educated Spoken Arabic in Egypt and the

intonation, some of the reasons behind this complexity will be elicited and explained.

1.3.1. What is Intonation

There are as many definitions of intonation as there are writers on the subject. Each would define it according to his/ her theoretical persuasion. 't Hart et al (1990:2) define intonation as

“...the entire ensemble of pitch variations in speech caused by the varying periodicity in the vibration of the vocal cords.” A stricter definition along these lines is offered by Quirk et al (1985:1586) “we speak of intonation,”they say “when we associate relative prominence with PITCH, the aspect of sound which we perceive in terms of ‘high’ or ‘low’, ‘falling’ or ‘rising’, broadly as these terms are used with reference to a scale of musical notes”. Similarly and in the same vein, Bolinger (1986:194) defines it as

“...the rise and fall of pitch as it occurs along the speech chain.” For more similar definitions see Tench (1996:1) and Jones (1989:275).

All these definitions, it would suffice to say, are strictly phonetic in character; and as they stand, appealing though they may be, they run the risk of being narrow in scope and nature. In fact, they are very reductionist and oversimplifying. They are as Brazil et al (1980:42) say “a standing temptation to just such a misleading simplification”.

While no one would deny that pitch or its acoustic correlate, fundamental frequency (F0), takes pride of place as the most important cue to one’s perception of intonation; it is by no means the only cue available. There are other concomitant prosodic features like loudness, length, tempo, amplitude, rhythm and so on, which conjugate with pitch in varying degrees in providing cues to the perception of intonation. Evidence of one’s ability to dispense with pitch or F0 is that, largely through amplitude variation (though other factors are no doubt involved), whispered speech is

Levant, with special reference to participle and tense’...? And El-Hassan (1978 unpublished PhD thesis)

perceived as having the same intonation as normal voiced speech.

One must guard against however the equating of intonation with the PROSODY of an utterance as some linguists have been anxious to do. "For some," says Bolinger (1986: 215) "the term INTONATION covers all the expressiveness of the human voice, whether contributed by pause and rhythm, by depth of resonance, by weak or forceful articulation, or by the levels, ranges, or ups and downs of fundamental pitch". (see also Hirst et-al {1998:2})

Though the distinction cannot be easily made, the prosody of an utterance is to be taken as the more inclusive term, the SUPRORDINATE, with intonation functioning as one of its hyponyms despite of course its (i.e. intonation's) multifarious nature.

So far nothing has been said about the meaning or semantics of intonation, and the above cited definitions fall short yet again of being truly descriptive in a viable and potent way. In fact, they describe not intonation but what Palmer (1922:3) calls tonetics "...that path which is concerned chiefly with the tone-curves irrespective of their meanings"

Language is a composite of FORM and MEANING, hence the definition "a means of communication". These two components are indispensable to one another. Without recourse to meaning, for example, the study of language remains purposeless and boils down to some form of verbal gymnastics.

CHAPTER 2

In the preceding chapter, the nature and role of intonation was discussed in general terms. The aim of the present chapter is to provide a more specific descriptive analysis of the major contributions to the study of English intonation. This discussion will serve as a background for the detailed examination of the forms and functions of Arabic Intonation in later chapters.

The analytical framework expounded by a long line of British tradition (see Kingdon, O'Connor and Arnold, and Halliday) will be employed in the analysis of the Jordanian Arabic under investigation. The American post-Bloomfieldian structuralist approach proposed in Pike (1945) and which analyses intonation in terms of four-level 'pitch phonemes' is not operated with here for reasons that have now become well documented and codified in the literature. (see in particular Bolinger 1951).

One of the arguments that Bolinger levelled against analysing pitch contours in terms of levels has been that the levels do not have any theoretical status and/or phonetic reality. The number of levels in any given analysis is merely a matter of how finely the analyst divides up what is essentially a gradient. This view is corroborated by Lieberman (1965) who carried out experiments on the perception of intonation. He found that competent linguists independently transcribing 'non-emotional' and 'emotional' utterances differ as much as 60% of the time when the level analysis system is used.

Bolinger has also shown that many contours having the same overall shape or configuration which the level analysis considers mutually exclusive or phonemically distinctive –once a phoneme always a phoneme– can as a matter of fact be subsumed together under one single SUPERORDINATE category, for instance fall, rise, etc.

This is why Bolinger has always favoured the ‘configuration’ approach of British linguists to the ‘level’ approach of American linguists.

Though one may risk being branded a crank or heretic, Pierrehumbert’s autosegmental-metrical theory, which is by far the most fashionable analysis of intonation, is not operated with in this thesis. Pierrehumbert’s analysis of English intonation as Ladd (1996: 89) says is “needlessly complex”. This complexity stems from what Pierrehumbert describes as phrase tone/accent, and the way this accent aligns with a text. The reasons are further spelled out under Ladd of this chapter.

Pike

A major difference between British and American approaches to intonation concerns the so-called ‘contour’ and ‘level’ analyses: British linguists have dealt with intonation in terms of contours, whereas Americans have preferred levels.

In both approaches, it is the relative pitch, not the absolute pitch, of the syllable (s) in an utterance that define their contribution to the intonational pattern; the absolute pitch is not significant in this regard.

Four levels, (numbered 1,2,3 and 4) are recognized by American writers, These levels correspond to relative pitch in the following manner (cf. Pike 1945).

| <u>LEVEL</u> | <u>RELATIVE PITCH</u> |
|---------------------|------------------------------|
| 1 | Extra-high |
| 2 | High |
| 3 | Mid |
| 4 | Low |

A rise from low pitch to mid thus corresponds to a change from pitch level 4 to pitch level 3, and a fall from extra-high to low corresponds to a change from pitch level 1 to pitch level 4. "This number", says Pike (op.cit.: 26) "is not an arbitrary one. A description in terms of three levels could not distinguish many of the contours –for example, the three contours beginning on low pitch and each rising to a different height. A description in terms of five or six levels would leave many theoretically possible contrastive combinations of pitches unused." Therefore, the four levels, it is argued, are "enough to provide for the writing and distinguishing of all the contours which have differences of meaning so far discovered, provided that additional symbols are used for stress, quantity, pause, general height of the voice, general quality of the voice, and so on."

Although the distance between the four levels in English pitch is neither uniform nor mathematically fixed, yet according to Pike (ibid.) "one may assume that the intervals... are more or less equally distributed between high and low."

It is important to note that American writers accept the fact that the pitch levels seem to be meaningless by themselves. They are mere building blocks which contribute beginning-points, direction of change, and end-points to the general contour. "It is the intonation contour as a whole which carries the meaning." (ibid.). Nevertheless, some tentative generalizations are ascribed to those pitch levels. As Pike (op.cit.: 26) says:

"...there is a tendency for pitch contours which include a pitch of level number one (except for contours 1-2 and 2-1) to contain some element of surprise or unexpectedness: pitch two is possibly the most frequent level for normal stressed syllables, while pitch four is frequent for unstressed syllables at the end of falling contours, and pitch three for unstressed syllables elsewhere."

More reliable generalizations are reached by grouping forms of contours (e.g. falling contours) and meaning. But it is argued that although such classification may indicate certain interrelationships between form and meaning, they do not permit the postulation of meanings for pitch levels per se, “since, for example, the meaning of a contour falling to pitch two has little in common with the meaning of contours rising to pitch two or falling from that level.”(ibid.).

Note that in this approach to pitch analysis, one does not have to determine the pitch of all syllables or syllable parts in the utterance: only certain points in the contour are significant for determining its characteristic falls and rises. In particular, a fall or a rise has two important points, namely, the pitch level at the beginning of the contour and the pitch level at the end. In a contour consisting of a combined fall and rise (i.e. one which first falls and then rises or vice versa) a third contour point marks the place where the pitch movement takes a new direction. Here are some examples:

| | | | | |
|----------|-----------|----------|----------------------|---------------------|
| 1) John! | 2) John!? | 3) Janet | 4) telephone number! | 5) telephone number |
| 2-4 | 2-4-3 | 2-4-3 | 2- | -4 |
| | | | | 2- -4-3 |

Note that in the first three examples, each syllable corresponds to one contour point at least, whereas in the last two examples the syllables outnumber the contour points.

“These extra syllables,” says Pike (op.cit: 26-7) “can be pronounced with intermediate pitches in a general descending scale, or with considerable variation in the amount of drop from syllable to syllable”. The proponents of this approach accept the possibility of there being more than four actual levels, but they insist that “it is the contour –point levels which are pertinent to the system” Pike (op.cit.: 27).

In this system, intonation contours with the strongest meanings tend to be associated with the ends of utterances, and such contours are said to be primary. The beginning point of every primary contour is a stressed syllable. As Pike puts it (ibid.).

“In the following illustration there are five stresses and five primary contours: the degree sign [°] before the number of the pitch level will show the beginning of the primary contour:

| | | | |

The boy in the house is eating peanuts rapidly”

3 °2-3 3- °2-3 3- °2- -3 °2- -3 °2- -4

If a single contour is associated with several words, each with its own stress, only one syllable is made prominent as in:

He's coming today

°2- -4

The term ‘contour’ in this system seems to be coextensive with a rhythmic unit since every rhythmic unit in English consists of one stressed syllable, either singly or in concert with one or more unstressed syllables. Thus the above sentence (repeated here):

| | | | |

The boy in the house is eating peanuts rapidly

consists of five rhythmic units-hence five contours, whereas ‘he’s coming today’ consists of one rhythmic unit-hence one contour.

Roger Kingdon (1958)

“The active elements of intonation are the Tones, which always occur in association with stresses” (Kingdon 1958:3).

Kingdon divides English tones into two classes: a) static tones with a steady voice on a given pitch throughout, and b) kinetic tones with an upward or downward movement of pitch. “The Static Tones,” says Kingdon (op.cit:4) “are the level tones accompanied by stress, which are used on words to which it is desired to give prominence in the sentence, but to which no particular feeling is attached.” Static Tones are further spelled out by Kingdon as comprising the High Level Tone e.g.

(^ˈnow) in:

 | |
It's now or never

and the Low Level Tone, e.g. (now) in

 |
Now how did you manage that?

The kinetic tones are the moving ones, and may fall or rise or combine falls and rises.

Kingdon lists the following kinetic tones:

1. Tone I (High) The High Rising Tone

e.g. Shall I come ^ˈnow

This tone is used in questions which require an interrogative intonation.

2. Tone I (Low) The Low Rising Tone

e.g. I can't do it now

Kingdom calls this the ‘Perfunctory’ or ‘detached’ tone.

3. Tone II: The Falling Tone

e.g. I want it ^ˈnow.

“This is the decided and final tone”, says Kingdom (op.cit: 9)

4. Tone III (undivided): The Falling-Rising Tone

Kingdon describes this tone as hesitant / apologetic / warning; it is used on statements, not on questions to express such feelings

e.g. I can't come \searrow now (but I could later)

5. Tone III (Divided)

This is a variation of Tone III. In Kingdon's words, it is described as "an important modification of Tone III \swarrow which is used when it is desired to make the nucleus embrace a wider idea than that conveyed by a single word" (p.10).

This tone has 4 variants, according to Kingdon (p11)

1. The undivided tone

2. Divided: Here the falling and rising elements occur on two adjacent syllables.

e.g. I'll \searrow go \swarrow

3. Separated: The two words conveying the fall and the rise are separated by one or more unstressed syllables/words.

e.g. I \searrow can go \swarrow

4. Separated, with internal partial stress: Some of the words/syllables which occur between the fall and the rise carry partial stress but no tone.

e.g. Wait \searrow for the others to arrive \swarrow

Note that Kingdon regards the fall + rise as a 'modification' or variant of the fall-rise.

Kingdon further classifies tunes (or tone groups) into:

1. Simple tune with a single kinetic tone unit, e.g.

IH, IL, II, III, IIID

2. Compound tunes: a tone group with two or more kinetic tones, i.e. an utterance comprising a semantico-syntactic unity which cannot be divided into separate tone groups, e.g.

IH + IH, e.g. Have you got room
 IL + II, e.g. How ever was it lost
 II + III e.g. This is the latest book I've read
 III + II e.g. That's a pretty serious matter

3. Complex tunes:

Tone IV, Rising-falling, e.g. I'm sure

Tone V, Rising-falling-Rising e.g. It isn't bad

It can be seen that for Kingdon, the fall-rise III (and its variant the fall + rise) is a simple tune, whereas the rise-fall IV, and the rise-fall-rise V are regarded complex tunes. This classification is different from that of say Crystal (1969a)

J.D. O'Connor & G.F. Arnold

O'Connor and Arnold (1973) introduce their own terminology. The relevant terms include:

word group:

“a grammatically close-knit-group of words which is coterminous with and unified by an intonation tune” (p.287)

e.g. To tell you the truth . / I don't like it. /

This utterance has two word groups:

'To tell you the truth' and 'I don't like it'.

The complete pitch pattern of a word group is the tune. A simple tune has a single nuclear tone. Simple tunes are the commonest in English. The compound tune

contains two nuclear tones; generally it consists of a high fall followed by a low rise,

e.g.

He likes coffee.

O'Connor & Arnold define 'Tone-group' as follows (op.cit: 287) "a group of tones which, though intonationally not identical, all have one or more pitch features in common and all convey the same attitude on the part of the speaker." (see also pp. 39-45).

The distinctive features of a tone group are therefore:

(1) the pitch pattern and (2) the attitude it conveys. In this work, O'Connor & Arnold identify ten tone groups in English.

1. The Low Drop: (Low Pre-head+) (High Head+)

Low Fall
e.g. impossible, I don't believe it

2. The High Drop: (Low Pre-head+) (High Head+)

High Fall
e.g. I like it immensely

3. The Take-off (Low Pre-head +)(Low Head) Low Rise

e.g. I think so.

4. The Low Bounce (Low Pre-head) + High Head+ Low Rise or High Pre-head + Low Rise

e.g. It's all right

e.g. What's that

5. The Switchback (Low Pre-head+) (Falling Head+) Fall-rise

e.g. You can try

6. The Long Jump (Low Pre-head+) Rising Head + High Fall
 e.g. Try it [↘] again
7. The High Bounce (Low Pre-head+) (High Head +) High Rise
 e.g. You [↑] think I'd enjoy it?
8. The Jack-knife (Low Pre-head+) (High Head+) Rise-fall
 e.g. It's [^] ridiculous
9. The High Dive (Low Pre-head+) (High Head+) High fall+(Low Accents +) Low Rise
 e.g. [↘] Andrew was the [↑] winner
10. The Terrace (Low Pre-head+) (High Head+) Mid-level
 e.g. > Then | (I went for a walk)

O'Connor and Arnold (op cit:46) admit that “ ...no tone group is used exclusively with this or that sentence type –question, statement and the like– and also no sentence type always requires the use of one and only one tone group. As a concrete example it would be quite untrue to say that sentences having the form of a question are always said with the Low Bounce. What is true, though, is that some sentence types are more likely to be said with one tone group than with any other: more yes-no questions, for instance, are said with the Low Bounce than with any other tone group.”

Moreover, the authors devote an entire chapter (ch.II Intonation and Meaning, pp. 46-97) to relationships between meaning and the proposed ten tone groups in association with the five principal sentence types: statement, wh-question, yes-no question, command and interjection. For instance, the Low Drop is considered complete, final and detached and uninterested. The High Drop is final, definite,

complete but not detached or reserved. The Low Bounce is soothing and reassuring and indicates that the speaker has self-confidence. The Switchback indicates the need to continue the utterance. It also suggests that there is a contrast between what is stated and something else the speaker implies.

The work by O'Connor and Arnold is appropriate for the foreign learner of English who seeks a definitive correlation between form and meaning.

Halliday

Halliday's main objective of his study of English intonation is "to suggest how intonation patterns may be described in such a way as to integrate them within the description [of spoken English] as a whole". His analysis is couched mainly in grammatical terms, though he does not deny intonation an attitudinal function. In fact some of the intonational systems he identifies as being grammatical *par excellence* could be equally called attitudinal (see 'reservation' and 'degree of involvement', for instance (cf. Crystal (1969c:389))

Halliday conceives of English intonation as the sum total of the interaction of three distinct meaningful choices, namely Tonality, the distribution of an utterance into tone groups, Tonicity, the placement within that tone group of a tonic or nuclear syllable and Tone, the choice of a tune within the tone group. Halliday is credited for postulating these three T- variables; though other scholars before him (e.g. Palmer 1922, Kingdon 1958, O'Connor and Arnold 1961) operated with them but perhaps not to the state of delicacy as Halliday does.

For Halliday (1970), the tone group (the unit of intonation) consists of at least one foot, the latter being the unit of rhythm consists of one or more syllables, and the first syllable in the foot is salient, i.e. stressed. Halliday likens the foot to the musical bar and says (op. cit:1)

“Thus,... like the bar in music, the foot always begins with a beat. But a musical bar may also begin with a rest, a silent beat; ... , the same is true of the foot in English speech. A foot may begin with a silent beat, without the rhythm becoming disrupted or lost.”

Halliday illustrates this with the following example (op.cit: 2) where / marks the foot boundaries, and a caret ^ stands for a silent beat:

each / foot in / turn con / sists of a / number of / syllables / ^ / one or / more / ^ and
the / first / syllable in the / foot is / always / salient /

In this example, according to Halliday, there is a foot which consists of a silent beat before the word 'one', and another silent beat after 'more'.

Insofar as the length of the tone group syntagmatically is concerned, Halliday suggests that it basically corresponds to a clause (where clause includes simple sentences, main clauses, co-ordinate clauses and some subordinate clauses). But the correspondence is flexible; not every clause (in the above sense) is a tone group. As he puts it (op.cit.: 3-4) “ But it is not the case that every clause is one tone group, because the tone group is a meaningful unit in its own right. The tone group is one unit of information, one ‘block’ in the message that the speaker is communicating; and so it can be of any length. The particular meaning that the speaker wishes to

convey may make it necessary to split a single clause into two or more tone groups, or to combine two or more clauses into one tone group.”

Each tone group, according to Halliday, has a prominent part which is called the tonic, and the tonic always begins with a salient syllable known as the tonic syllable. This syllable tends to be longer and louder than any other salient syllables in the group. “...what makes it prominent, however, is mainly neither length nor loudness but the fact that it plays the principal part in the intonation of the tone group”. (p.4). The tonic syllable covers the “widest pitch range”, or it occurs “immediately following a pitch jump”. With respect to its structure, the simple tone group, says Halliday (op.cit.: 5), consists of a tonic, or tonic segment, which extends from the tonic syllable right up to the end of the tone group: and this may or may not be preceded by a pretonic (or pretonic segment). Two examples are given to illustrate this (// being a tone group boundary, and the tonic being underlined)

// everybody/ seems to have/ gone away on/ holiday //

Where there is no pretonic, and:

// Jane may be/ going on/ holiday at the/ end of the/ month //

Where the pretonic extends from the beginning of the tone group up to the tonic, thereby covering the first two feet.

The above two examples illustrate the structure of simple tone groups. A compound tone group, on the other hand, “has a double tonic: that is, two tonic segments one following immediately after the other. For example:

// Robert can/ have it if/ you don't/ want it” (ibid.)

A compound tone group can have just one pretonic preceding both tonic segments as in: // Arthur and/ Jane may be/ late with/ all this rain we're/ having//

In this example, the first two feet (i.e. Arthur and/ Jane may be/) comprise the pretonic segment, the next two feet (i.e. late with/ all this/) are the first tonic segment, and the last two feet (i.e. rain we're/ having) make up the second tonic segment.

It must be pointed out that each segment, whether tonic or pretonic, comprises a minimum of one foot with a salient syllable. Thus utterances like

It's / Arthur

consist of the tonic segment only, regardless of the fact that the tonic begins at Arthur.

This is because no salient syllable precedes the tonic. Nevertheless, the syllable its above might be considered as a foot with a silent beat, viz /[^] it's / Arthur//, in which case the tone group begins with a weak syllable. But this kind of tone group has no pretonic segment because the pretonic must have a foot with a complete foot including a salient syllable.

In Halliday's terms (op.cit.: 6), the tone group is the carrier of the melody of English speech. The latter consists of continuous variations in pitch which are called pitch contours.

“These are continuous stretches of falling, rising and level pitch movement...Some tones may have fairly simple contours: just a falling movement, for example, or just rising. Others have rather complex pitch movements: but these can all be analysed into sequences of falling, rising and level pitch together with jumps and stepping movements.” (ibid.)

Halliday (op.cit.: 7) recognizes for English five simple tones and two compound tones. The compound tones are combinations of simple ones.

These are the primary tones and they are distinguished from one another by the pitch movement in the tonic segment, viz:

Tone 1 **Falling**

Tone 2 **High rising, or falling-rising** (pointed)

Tone 3 **Low rising**

Tone 4 **Falling-rising** (rounded)

Tone 5 **Rising-falling** (rounded)

The compound tones are:

- a) 13 (one-three-not-thirteen), which is a combination of tone one and tone three
- b) 53 (five-three-not fifty three), which is a combination of tone five and tone three

In addition to the above mentioned primary tones, Halliday recognizes secondary tones in the tonic segment and in the pretonic segment. Within the tonic segment, secondary tones have to do with the finer grades of pitch movement. For instance, within the primary tone 1 (falling tonic) secondary tones distinguish between:

- a. wide fall (high to low)
- b. medium fall (mid to low), and
- c. narrow fall (mid-low to low)

Within the pretonic segment, secondary tones are realized as different pitch contours; for instance, within tone 1, there can be an 'even' pretonic, where the contour exhibits little or no change in the direction of pitch movement, or an 'uneven' pretonic, where the contour undergoes changes of direction.

Liberman uses the string "an English teacher" to illustrate this point. A straightforward falling tune is usually an expression of declarative intent, whereas a straightforward rising tune is normally appropriate for a yes/no question.

Phrasing differences, too, make their own contributions to differences in meaning. One of Liberman's examples is:

Sam struck out my friend

Vs

Sam struck out, my friend

Without the comma, i.e. without the intonation break after "struck out", the NP "my friend" is the direct object of the transitive verb. With a comma at the same place, the NP "my friend" is a vocative.

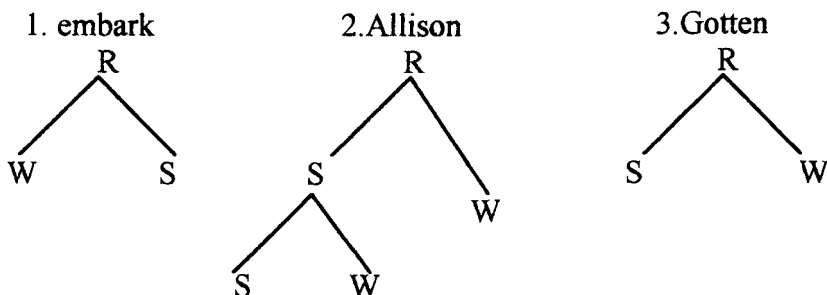
In this brief introduction, Liberman also takes up the effect on meaning of varying more than one of the above-mentioned features: stress, tune and phrasing. Often a difference in one of these features generates some effect on the others and consequently changes the meaning. He sums the issue up as follows (op. cit:14)

"We have seen that different TUNES can be associated with a given string of words without affecting the STRESS PATTERN or INTONATIONAL PHRASING of that string; when we change the STRESS PATTERN, we may keep the TUNE constant in some systematic sense, but the particular way in which the tune is associated with the lexical phonology, the observed PITCH CONTOUR of the utterance, will usually be changed; and when we change the INTONATIONAL PHRASING, both the STRESS PATTERN and the PITCH CONTOUR will in general be affected."

Liberman conceives of a theory of English intonation as the representation of stress, tune and phrasing, and the complex relationships of the interactions of these features with one another and with the rest of the system of English grammar. So far so traditional, but henceforth Liberman's presentation of English intonation takes a turning point away from the traditional, and he attempts to set up a blue print for a new theory of English intonation based on the metrical system which, as he says, in the abstract of the book under review, "assigns METRICAL PATTERNS to text and tune" and "establishes a CONGRUENCE between these patterns in any given case.

Liberman (op. cit:198) says that "metrical patterns are formally defined as trees with uniformly binary branching, and a relation of STRONG/WEAK defined in the two elements of each non-terminal constituent".

In other words, a metrical pattern is a system of constituent analysis of a language text consisting of two terms: strong(s) and weak (w) which divide the language text in a binary fashion as shown in 1, 2, 3 below



In 1 above the stress pattern of the verb "embark" is represented by a tree diagram with the node (R) "root" dominating the two syllables of the word em and bark which are designated W and S respectively. Similarly the name "Allison" has three constituent syllables characterised as S, W, and W from left to right and related to one another as shown in the binary divisions at 2. The past participle "gotten" is represented as in 3 with two syllables got and ten designated S and W respectively. Note that each non-terminal constituent (i.e. each node) branches off into two elements realised in terms of S and W.

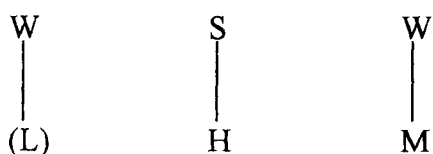
Lieberman (Ibid.: 18) raises four questions which a theory of intonation has to answer:

- 1- The first question is about "the underlying forms of stress patterns, tonal patterns (tunes) and patterns of intonational phrasing.
- 2- The second question is about the rules by which a certain "tune" is associated with a given "text".
- 3- The third question is about "the nature of the phonetic representation of intonation", and the rules that relate it to "underlying intonational form".
- 4- The fourth question concerns the way in which the system of intonation can be "integrated into the theory of language as a whole."

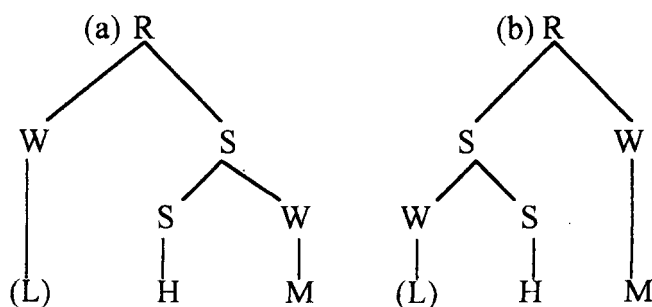
The second question (i.e. the association of tonal patterns with text) is taken up first because it seems to comprise the backbone of Lieberman's intonational system.

To start with, he chooses vocative chants (after Leben 1973) which are characterised by a kind of

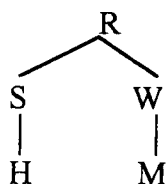
chanted intonation used for calling to people out of the sight of the speaker. The tune of a vocative chant has three pitches: low (L) mid (M) and high (H), i.e. the characteristic intonation of the chant is represented by the tonal pattern (L)HM, where (L) is optional. This tonal pattern starts low and rises to the H level and ultimately falls to the M level. The high pitch (H) says Liberman (*ibid.* 34) constantly occurs on the "downbeat", which is a strong position, whereas the other two pitches occur on weaker beats. Consequently, the lowest level of the metrical pattern which aligns with this tune must be:



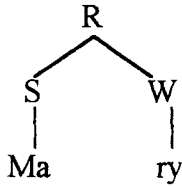
Thus using the metrical pattern in the form of a rooted tree with the proviso that branching is "maximally binary", two possibilities of such tone-text alignment exist as shown in (a) and (b) below (op cit:34)



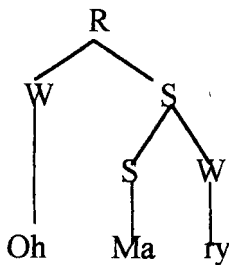
Discarding the optional low tone, the generalised structure boils down to:



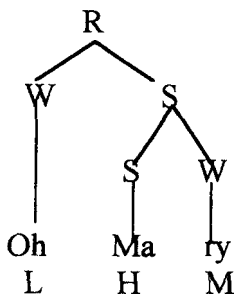
To illustrate the vocative chant tune, the name "Mary", for instance, will exhibit the following metrical structure.



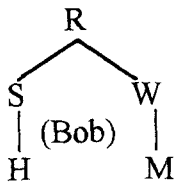
Where the first syllable carries the primary (strong) stress and the second syllable is comparatively weak (W), i.e. is unstressed. As shown in this metrical pattern the text "Mary" is associated with the tune HM. If used vocatively, the name "Mary" may be preceded by "oh", in which case the metrical pattern will be:



And the text tune association

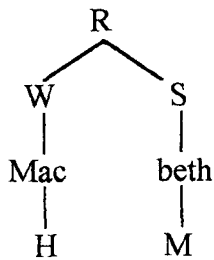


Even a monosyllable like "Bob" which has no internal metrical structure can be conceived as having the metrical structure [SW) and the tune alignment takes the following structure.



In which case the monosyllable is "broken" into two elements each associated with one element of the tune.

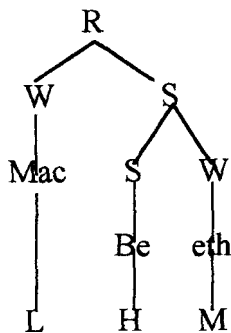
A text with final stress, for instance, "Macbeth" is given the structure.



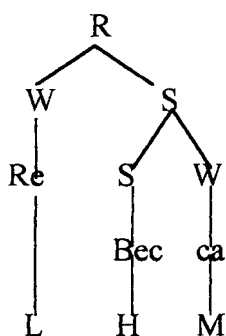
But this division is unlikely since a High tone (H) is thus associated with a weak syllable.

Liberman resolves this problem by what he calls (op cit:37) "an optional trick of scansion"

whereby the stressed syllable is broken into two parts as in:



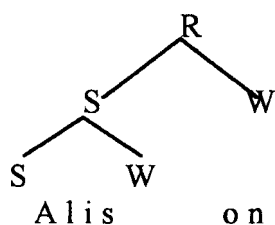
It is important to remember that in this system the M tone is associated with the last syllable of, for instance, "Rebecca".



Indeed the M tone has to be associated with any sequence of unstressed syllables following the primary (strong) stress. The H tone is associated with the strong (S) syllable. Liberman then introduces the term "Designated Terminal Element" to account for the locus of the H in more complex structures, and introduces the concept of tone spreading from left to right. Liberman defines the Designated Terminal Element of a metrical node as follows (ibid. 43)

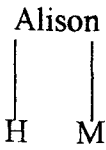
"The Designated Terminal Element of a metrical node N is that terminal element dominated by N which is reached by a path starting from N that intersects no nodes labelled W".

The H tone is associated with the Designated Terminal Element of a text constituent as illustrated by the example: "Alison".

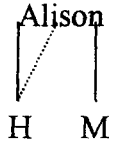


Here the H tone is aligned with the Designated Terminal Element of the textual constituent

[SW]
Alis - namely "AL-" This simply says that the H tone and the main stress of the given text are associated. Thus the underlying tune-text association is shown in

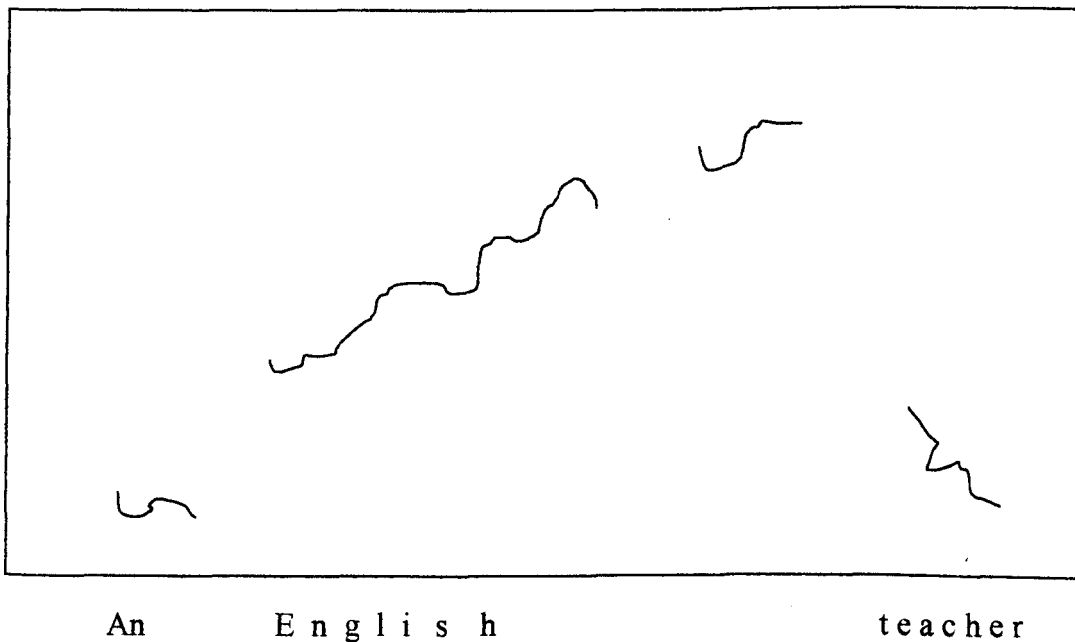


Then the tone spreads left-to-right as shown by the dotted line below



Lieberman's objective has been to establish a theory of English intonation. He discusses a wide range, but by no means all of the tunes of English; in other words, he does not attempt to write a comprehensive intonational lexicon (cf. *Ibid.* 68)

Having established some theoretical framework for analysing English tunes and their association with English texts, he proceeds to discuss simple cases with the help of Fundamental Frequency (Fo) contours. Thus, the phrase "an English teacher" with the stress pattern shown, can be realised intonationally in different ways with different semantic readings. For instance, (*ibid.* 60)



The meaning of this tune according to Lieberman (*ibid.*:61) might be something like "what I am

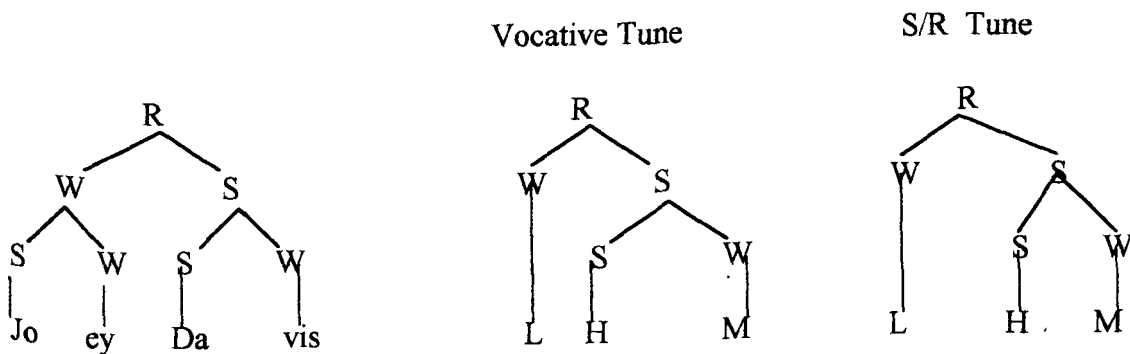
saying is perfectly obvious - what else could the answer be?"

In their jointly written paper "The Intonational Disambiguation of Indirect Speech Acts! (1975).

Sag and Liberman suggest that the use of this tune is appropriate:

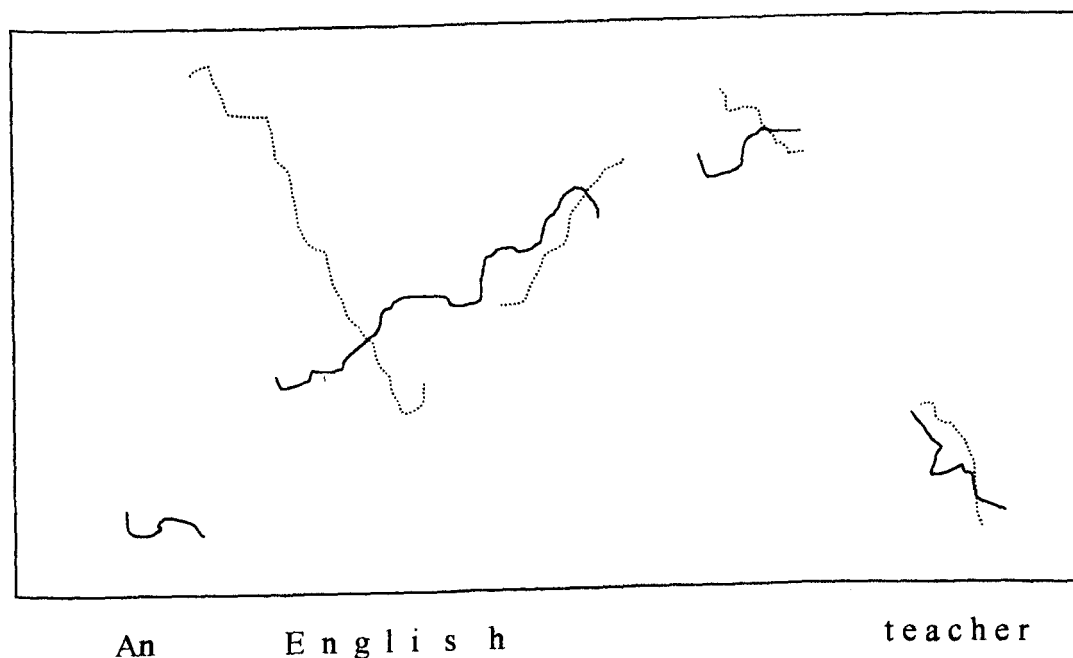
- (i) when the speaker wishes to express surprise
- (ii) when the speaker is intimating that the utterance is redundant or unnecessary. Liberman cites these instances in a bid to convince the reader "that an abstract feature which is common to otherwise rather different examples..., and which contributes something to their communication value." (ibid.: 64)

This tune, which expresses Surprise/Redundancy (henceforth S/R), is realised as a relatively low pitch towards the beginning of the utterance in association with a stressed syllable and a relatively high pitch associated with the primary or main stress of the utterance, to be followed by a terminal drop to a low pitch. This surface structure of the S/R tune must according to Liberman, have the underlying representation of /LHL/, which is similar to the /LHM/ structure of the vocative chant. In both, the high pitch occurs on the main stress. Hence it is argued that both have a matching pattern of association with texts, as illustrated by the utterance "Joey Davis" (Ibid:64)



The metrical structure of "Joey Davis", insofar as its circled-node bit is concerned, matches the metrical structure shared by the vocative tune and the S/R tune, viz:

with the help of FO contours he is able to show explicitly some interesting tune relations. His observations on the association of tune, text and meaning have close affinity with those of Crystal (1969) and O'Connor and Arnold (1972). Consider Liberman's example (op.cit.: 71) where FO contours of two versions of the phrase "an English teacher" are superimposed.

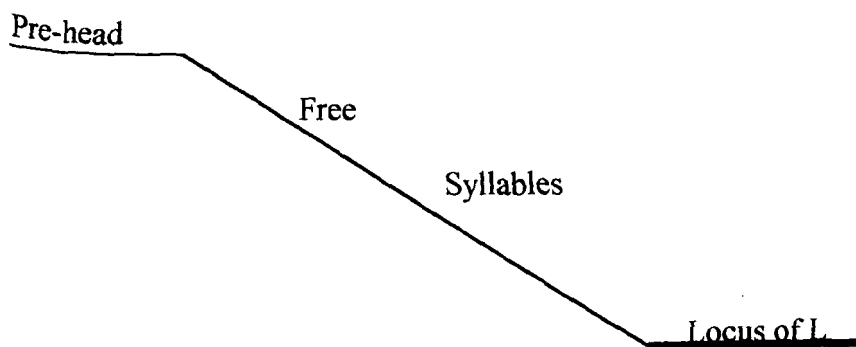


The two versions of this phrase are instances of the Surprise/Redundancy (S/R) contour which was mentioned above. The solid line begins with a low pitched pre-head, namely "an", whereas the dotted line starts with a high pitch on the same syllable. The high pre-head and low pre-head in the British school tradition occur in a set of tunes, one of which namely Tune 3, corresponds in Liberman's system to the contour WSW.

LHL

The British tradition regards the choice between low and high pre-head as free, but the contour with the low pre-head is considered to be the basic form of the tune. According to O'Connor and Arnold (op.cit.: 71) the addition of a high pre-head to a tune "is not to alter completely the impression made by the tune as a whole, but simply to add VIVACITY, LIVELINESS, EXCITEMENT and VEHEMENCE to whatever other attitudes the tune in question normally expresses." Liberman endorses this observation.

After examining some examples of the high pre-head including the FO contour of "such elaborate precautions are unnecessary" (p.73) and "it was an unusually dark night" (p.75) Liberman concludes that the high pitch associated with the unstressed pre-head drops rather steeply immediately after the pre-head syllable and then descends smoothly through the free syllables intervening between the high pre-head and the position of the L tone of the S/R contour, Viz:



Liberman is convinced that the pitch specification of the free syllables in this contour is immaterial and at any rate it is not likely that such free syllables exhibit any linguistically significant regularities.

Then Liberman studies the high pre-head as a boundary tone and claims that, contrary to the treatment of the British tradition, the association is not coextensive with the entire pre-head

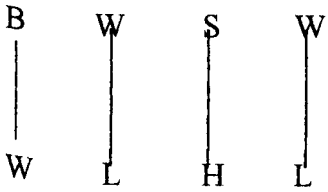
which they define as all the syllables preceding the stressed syllable of the first prominent word. Rather, according to Liberman the boundary tone is associated with the first syllable of the text.

The underlying association of this tone is with a boundary B, where the tone T is a terminal

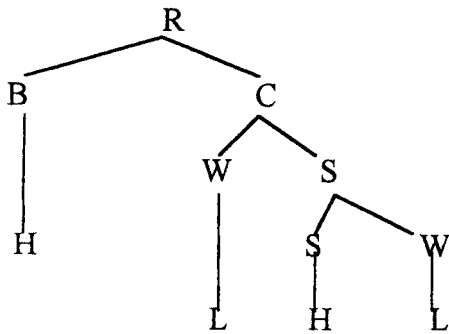


element, and B is not. The B positions are weak. To fit these boundary elements in his metrical system, Liberman calls the non-boundary material "content" and represents it in the tree by the symbol "C".

In these terms the S/R tune with a high pre-head is represented as:



In the tree diagram the picture is as shown below (op cit:78):



J.B. Pierrehumbert

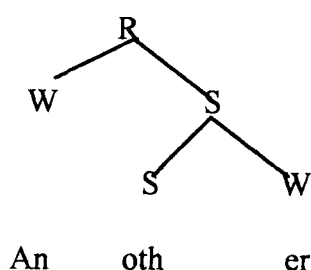
Lieberman's investigation of English intonation was picked up by J.B. Pierrehumbert (1980). The latter developed the theory of intonation by providing an account of the possible tunes and their alignment with different texts. As Pierrehumbert says (op.cit.:abstract):

“The different tunes are described as structured strings of L and H tones... the strings consist of one or more pitch accents, which are aligned with stressed syllables on the basis of the metrical pattern of the text, plus two additional tones which characterise the intonation at the end of the phrase. The two additional tones are the boundary tone, found at the end of the phrase, regardless of the metrical structure of the text, and the phrase accent, which follows immediately after the pitch accent on the main phrase stress and controls the intonation from there to the boundary”.

To understand Pierrehumbert's extension of Lieberman's study, concrete examples are necessary ; but first an inventory of her terminology is in order.

1. Pitch accents :

This is a tone (or an ordered pair of tones) assigned to a metrically strong syllable in an utterance. Thus in the word “another”, for instance, which is metrically represented as:



The terminal syllable (-oth) is strong and it is the locus of the pitch.

2. Phrase accent

This is the accent associated with the end of the phrase subsequent to the last pitch accent. The tonal characteristics of the end of the phrase contrast with those of preceding constituents in that "F 0 movements at the end of the phrase do not line up with metrically strong syllables" (op. cit:5). The phrase accent occurs near the end of the word which carries the nuclear stress: hence, it controls the behaviour of the FO which follows the nuclear pitch accent. The phrase accent occurs shortly after the nuclear accent irrespective of how soon the boundary occurs.

3. Boundary tone

This is an intonation phrase boundary tone (represented by the symbol "%") which is assumed to occur where there is a "nonhesitation pause or where a pause could be felicitously inserted without perturbing the pitch contour" (op. cit. 7). Pierrehumbert adds that in normal speech one often finds phrases where the boundary is not marked by a pause, but rather by the lengthening of the ultimate syllable in the phrase.

Pierrehumbert assigns further specification to the above mentioned accents / tones. Thus, a tone on an accented syllable in a text is marked with a star, e.g. H* or L*. A tone which leads the starred tone, or which trails it, is marked with a raised hyphen, e.g. H- or L-.

Pierrehumbert's phonological characterisation of intonation comprises three components (op.cit.

:3)

1. The first component is a grammar of permissible phrasal tunes. This grammar is responsible for generating sequences of H and L tones.

2. The second component is the metrical representation of the text along the lines mentioned earlier in respect of Liberman's metrical patterns. This component specifies the stressed syllables and the unstressed syllables, and furthermore it defines the relative relationships of strength in respect of the stressed syllables.

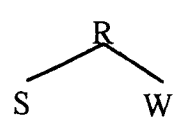
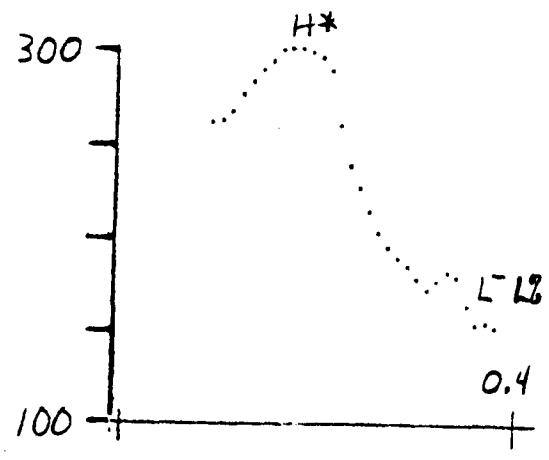
3. The third component deals with the tone-text association.

It must always be remembered that for Pierrehumbert the different tunes in English are regarded as structured strings of two tones only, namely H and L, which may carry the diacritics "*", - and "%"

To illustrate the implementation of Pierrehumbert's system consider the following examples in the context of FO contours

In the FO contours at (I. 1A), (I. 1B) and (I. 1C) the utterance "Anna" consists of two syllables whose metrical form is

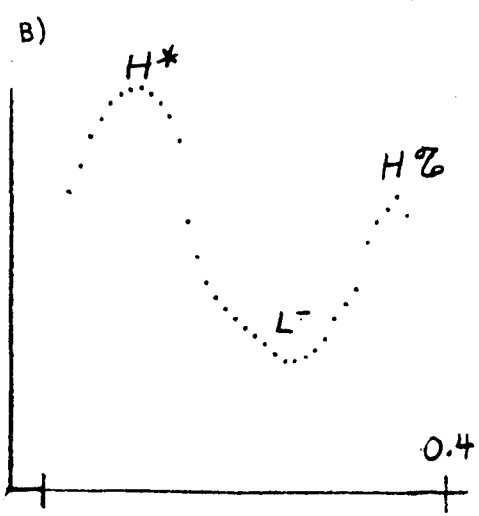
1.1A) JBP



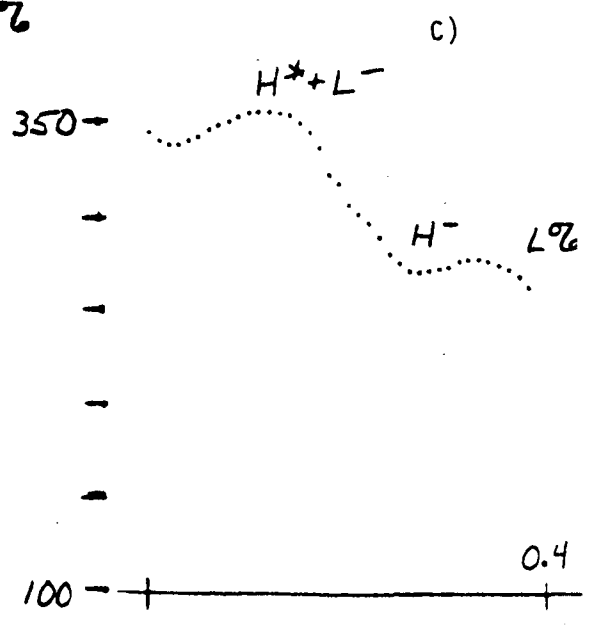
In (1A), there is a peak of the pitch accent H* on the first (i.e. s) syllable, followed by a drop of pitch to nearly the bottom of the speaker's range L- and a boundary tone L%.

Anna
H* L- L%

This tonal pattern is typical when "Anna" is an answer to a question.



Anna
H* L- H%



Anna
H*+L- H- L%

Figure (1B) exhibits a pattern similar to that in (1A) with the exception that the FO rises again at the end. This contour serves as an answer to a question, but it contrasts with (1A) in that the answer is incomplete i.e. it implies that the speaker has something else to add, even if he does not say what it is. (1C) is a pattern which is used to call out to Anna; it contrast with (1A) in that immediately after the bitonal pitch accent (H* + L-) the contour drops to H- and stops higher than the speaker's lowest range. Note that the boundary tone in 1A and 1C is L% whereas in 'B the boundary tone is H%. Note that the difference between H* and H- is not to be equated with the difference between H and M in some other language systems, "both H* and H- are equally high tones, but they differ in how they are associated with the text"

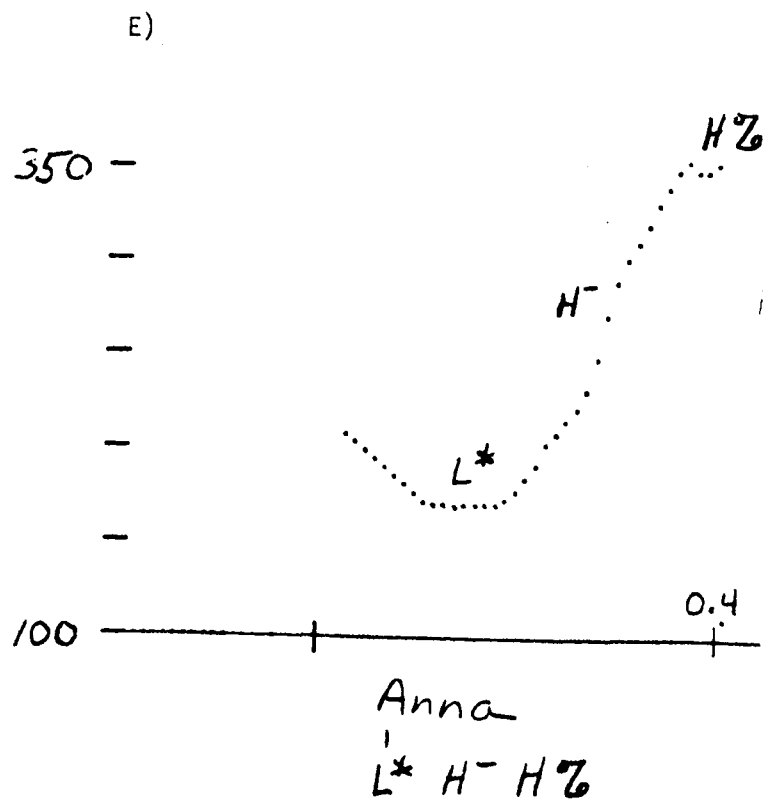
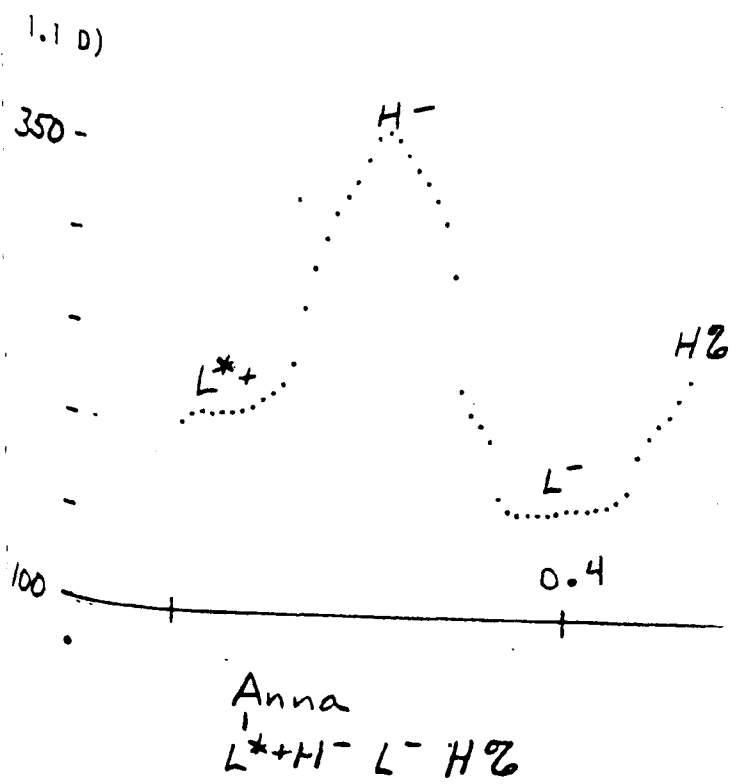
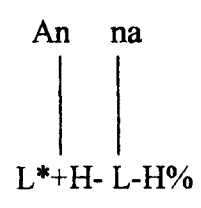


Figure 1D starts at a fairly low level pitch accent (L*) and maintains this level for a little while before it rises to another H- accent which leads to the starred L* accent, in spite of the fact that there is no other strong (S) syllable to carry this leading (H-) tone. Thus here is an instance of a bitonal pitch accent (L* + H-) defined on only one strong syllable (S). Subsequent to the pitch accent, the contour drops to the phrase accent (L-), and rises again to end with an H% boundary tone. The entire pitch pattern can thus be represented as shown below:



According to Pierrehumbert, this pattern can be used either to signal incredulosity or to

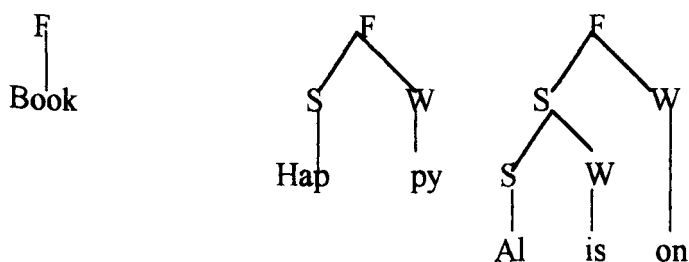
suggest that the speaker is supplying just one of many possible answers.

Finally, in Figure 1E the pitch accent on the stressed syllable is very low (L*) which then rises steadily to the end of the contour. This pattern is appropriate for the question: "Is it Anna?"

The above examples exhibit different melodies for a disyllabic utterance "Anna". The melodies multiply for utterances with more stressed syllables.

The pitch accents differ in respect of (1) the tones they comprise and (2) alignment with the text. As mentioned above, pitch accents can be monotonal or bitonal. If bitonal, the tone on the accented syllable is marked with a star, e.g. H* and the tone that leads or trails the starred one marked with a raised hyphen, e.g. H-. Note that the bitonal accent H* = H- contrasts with the plain H* in that the H- undergoes spreading and generates FO plateaus which the plain H* does not generate.

"The starred / unstarred relation in pitch accents," says Pierrehumbert (op.cit.:9) "may be compared to the stressed / unstressed relationship within the metrical foot, and entity which will also play a role in our discussion of tune / text association". The metrical foot consists of one stressed syllable along with any associated unstressed syllables, An utterance comprised of only one stressed syllable has only one foot, e.g. book, happy, Alison.



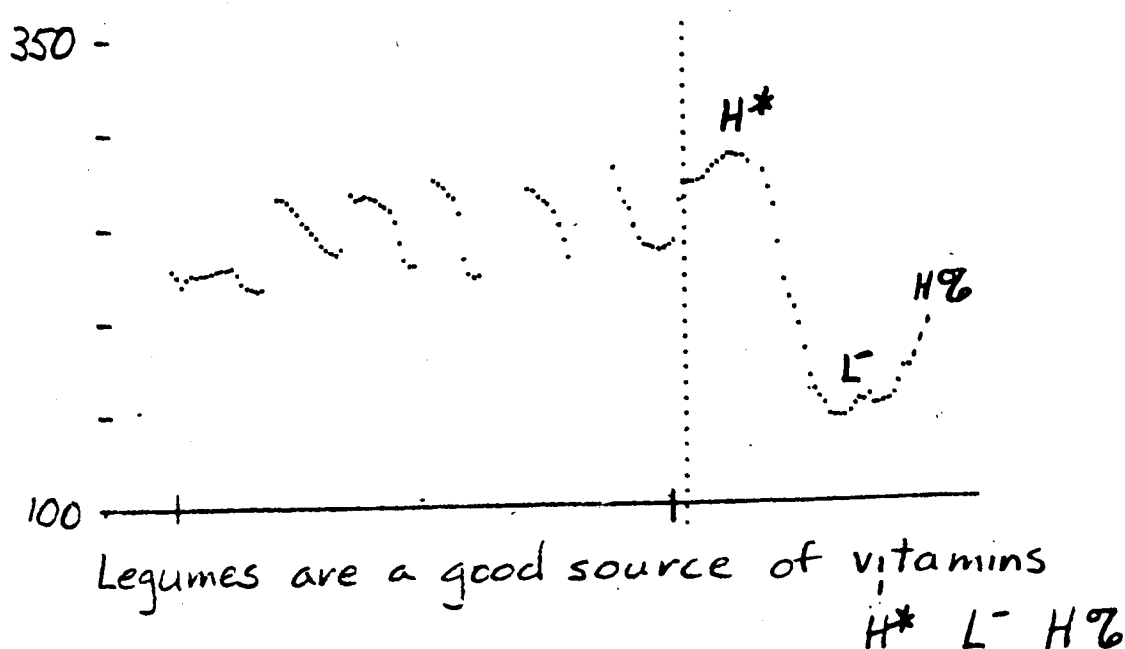
It is worth reiterating that the phrase accent has the following characteristics:

1. It occurs soon after the nuclear (pitch accent) irrespective of how soon the phrase boundary is reached.
2. It can spread to the right by rule and often gives rise to a plateau spanning the end of the phrase up to the final change of pitch.

The performance of these characteristics of the phrase accent can be seen in the following FO contours.

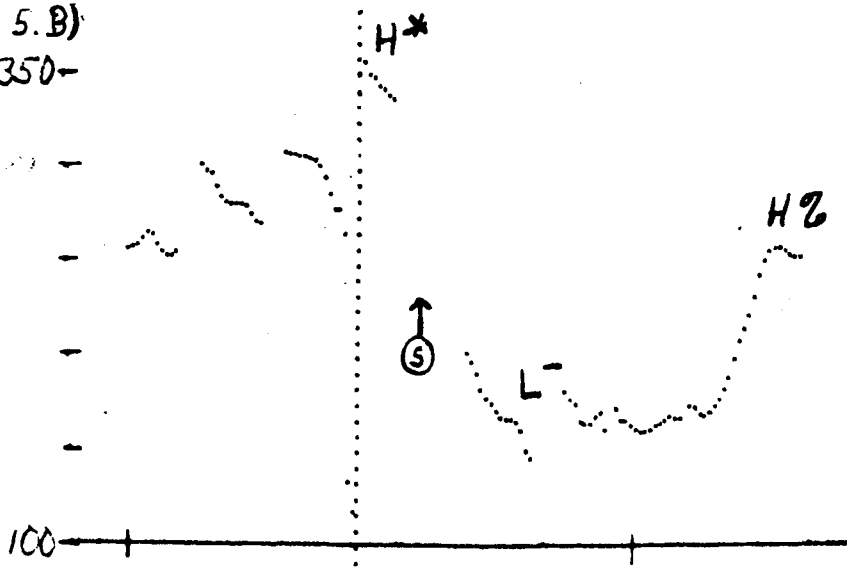
- (a) In Figure 5A the phrase accent (L-) occurs near the end of the word with the nuclear accent (i.e. the word "source" in this figure), and then it (i.e. the phrase accent) spreads a little to the right until the contour begins to rise towards the boundary tone H%.

5 A)



Similar features of the phrase accent can be seen in Figure 5B and 5C.

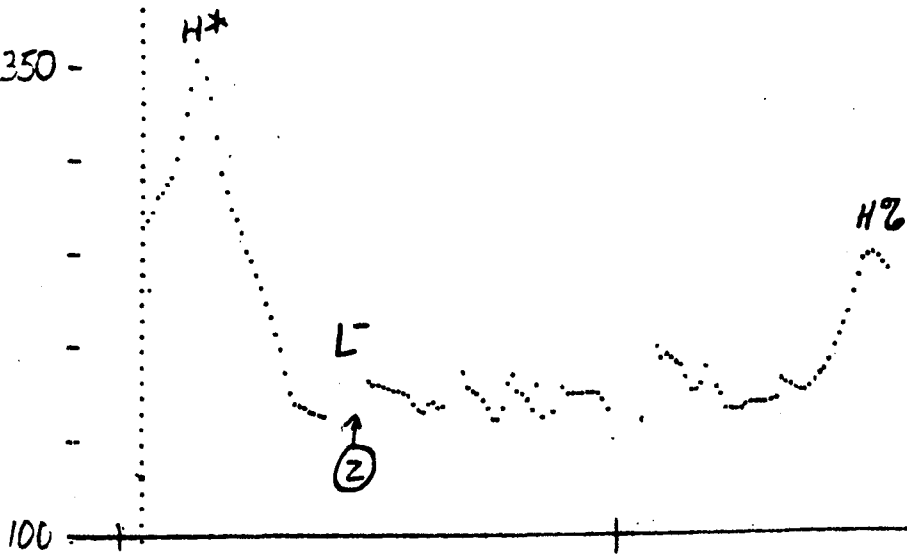
5. B)
350-



Legumes are a good source of vitamins

H* L- H%

5C) 350-



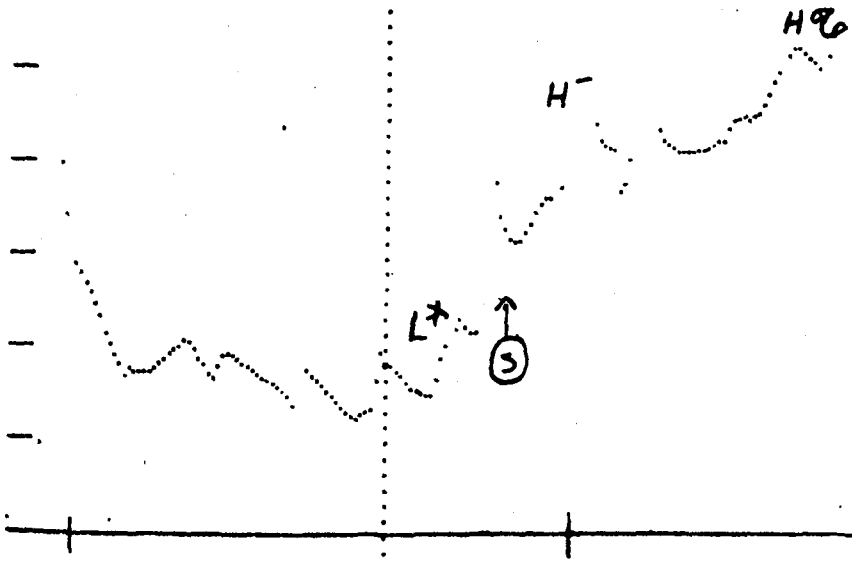
Legumes are a good source of vitamins

H* L- H%

The phrase accent (L-) in 5B and 5C occurs near the end of the word with the nuclear pitch accent and it creates a sustained plateau with a low value spanning the rest of the phrase up to the ultimate rise.

Likewise, in Figures 6B and 6C the behaviour of the phrase accent (H-) is further reinforced. Here the phrase accent (H-) accounts for the rise which begins immediately after the nuclear pitch accent (L*), and then by the spreading rule a plateau is created which spans the remainder of the phrase up to the final rise.

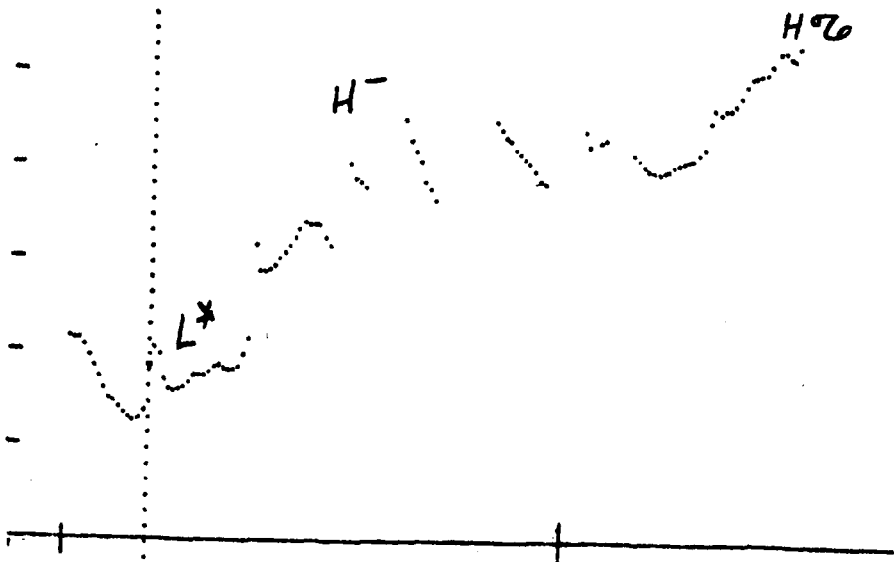
6 B)



Are legumes a good source of vitamins?

L* H- H%

6 C)



Are legumes a good source of vitamins?

L* H- H%

The generalised rule of tone spreading in English is formulated by Pierrehumbert (op.cit.:122)

as:R-

T-i spreads towards T_{i+1} if $T_{i+1} \geq T$ (where T stands for tone). This is formulated in terms of phonetic values of tones, rather in terms of the tones themselves. The rule says a certain tone is subject to spreading to the right if the next tone is equal or higher.

Leftward spreading seems to be much more restricted than rightward spreading.

Insofar as phrase accents are concerned the above rule predicts rightward spreading: in the following cases

(a) H- H%

(b) L- H%

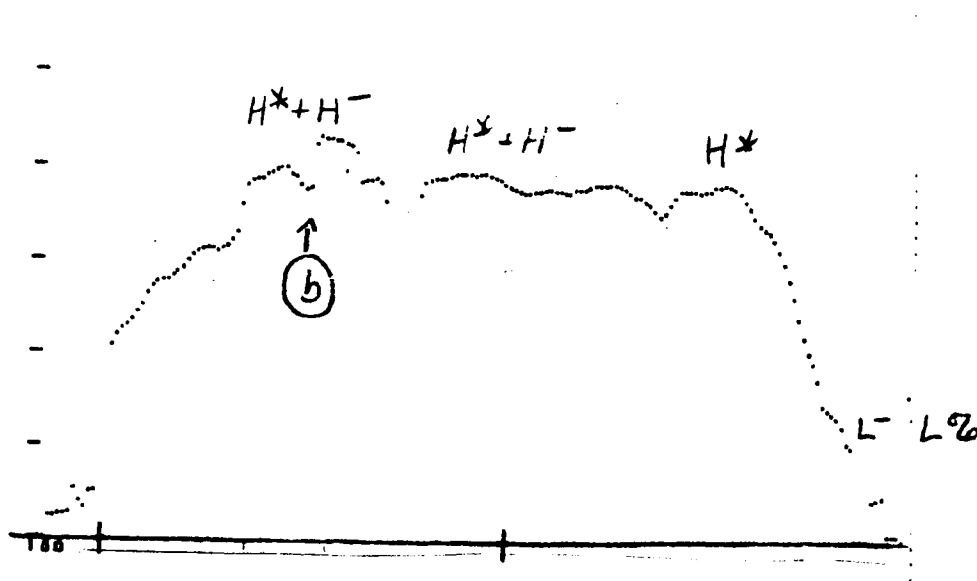
since in all these cases T% (i.e. the boundary tone) is higher than the phrase accent or as high as the phrase accent. On the other hand no spreading occurs in the case of L- L% as L% in this case is much lower than the phrase accent L-. Note that in (b) above L% is upstepped to the level of the preceding H-.

Pitch accents are also subject to spreading. In this regard, Pierrehumbert referring to Figure 5 (mentioned above) says (op.cit.:126):

"Figure 5 introduced a type of intonation in which the high FO is sustained on unaccented syllables, instead of dipping as between H* accents In the present theory, the only mechanism for generating a sustained high FO value is tone spreading." She argues that floating tones are the only eligible candidate for spreading; and since the FO is sustained in the middle of the intonation phrase, the floating tone is assumed to be the floating one of a compound pitch accent.

In her own words (op.cit.:126):

"Thus, the only choices for describing such a plateau are H* + H- H*, with H-spreading to the right under rule (I) or H* H- + H*, with H- spreading to the left" To these Pierrehumbert, with less certainty, adds H* + H- and refers to Fig 14 for illustration.



And remember to bring along your raingear

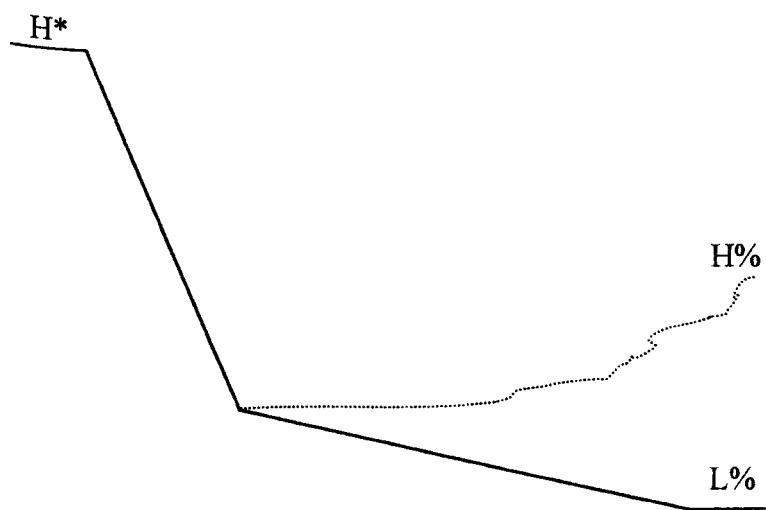
H^*H^-

H^*+H^-

$H^*L-L\%$

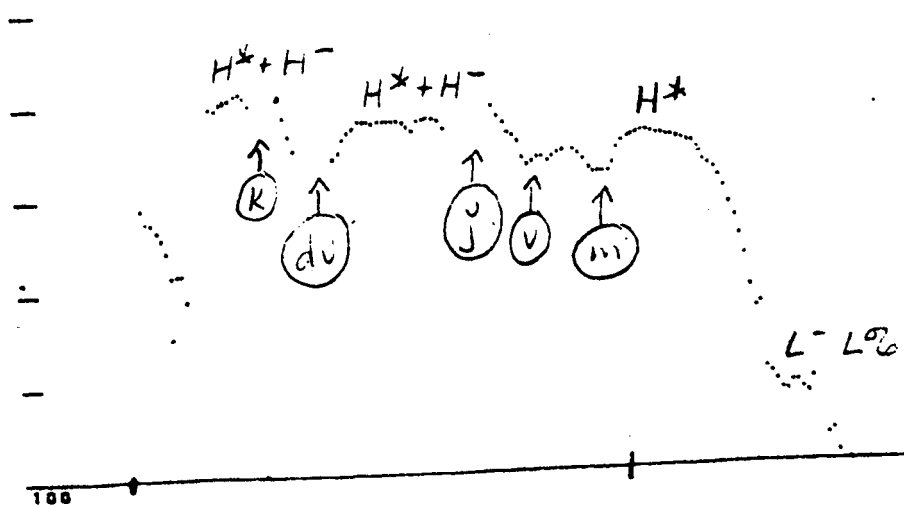
In this FO the accent on "raingear" is more prominent than the accent on "bring". Hence the H tone on the former is higher than the H tone on the latter. But since it is the value on "bring" which is carried across the FO plateau, it is reasonable to consider this plateau as the outcome of spreading of $H^* + H^- H^*$, "and it is plausible," says Pierrehumbert (op.cit.; 126), "that the two H tones in an $H^* + H^-$ would have the same phonetic value". Under this condition rule operates.

Note that whereas L- H% is subject to rightward spreading, L- L% is not, since L% is lower than L- in this case. The figure below (5-6) depicts these two cases:



As shown by the dotted line, L- H% involves rightward spreading, which is responsible for the sustained plateau. L- L%, as the solid line shows, involves no spreading; from L- to L% there is a gradual descent, not a plateau.

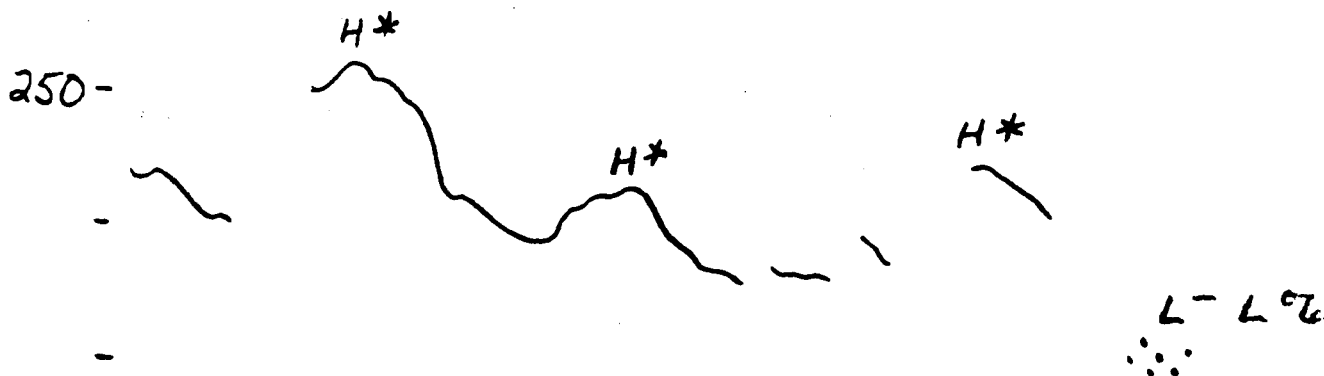
The H* + H- pitch accent receives special attention in Pierrehumbert's analysis. The rule spreading formula mentioned above predicts that "prominence relations, as reflected in phonetic value, can affect the applicability of tone spreading. This point has particular significance for the H* + H- accent, since this accent contrast with H* only in environments where spreading can occur" (op.cit.:126). Consequently, the distinctive characteristics of the H* + H- accent are reflected only in level configuration or in rising configurations. A typical contour with H* + H- accents is shown in fig. 17.



He took advantage of Amanda
 $\overset{H^*+H^-}{\underset{|}{t}}\overset{H^*+H^-}{\underset{|}{a}}\overset{H^*+H^-}{\underset{|}{k}} \quad \overset{H^*+H^-}{\underset{|}{a}}\overset{H^*+H^-}{\underset{|}{d}}\overset{H^*+H^-}{\underset{|}{v}}\overset{H^*+H^-}{\underset{|}{a}}\overset{H^*+H^-}{\underset{|}{n}}\overset{H^*+H^-}{\underset{|}{t}}\overset{H^*+H^-}{\underset{|}{a}}\overset{H^*+H^-}{\underset{|}{g}}\overset{H^*+H^-}{\underset{|}{e}}$ of $\overset{H^*}{\underset{|}{A}}\overset{H^*}{\underset{|}{m}}\overset{H^*}{\underset{|}{a}}\overset{H^*}{\underset{|}{n}}\overset{H^*}{\underset{|}{d}}\overset{H^*}{\underset{|}{a}}$

Here the $H^* + H^-$ accents on the words "took" and "advantage" contain the same prominence as the H^* on "Amanda". Hence the presence in the FO of a plateau which spreads from the first stressed syllable to the nuclear stress.

The above FO contours involving $H^* + H^-$ contrast with FO involving the alternating prominence characteristic of a series of H^* accents as shown in Fig. 19.



100 + Try occasional moderate agitation
 $\overset{H^*}{\underset{|}{T}}\overset{H^*}{\underset{|}{r}}\overset{H^*}{\underset{|}{y}} \quad \overset{H^*}{\underset{|}{o}}\overset{H^*}{\underset{|}{c}}\overset{H^*}{\underset{|}{c}}\overset{H^*}{\underset{|}{a}}\overset{H^*}{\underset{|}{s}}\overset{H^*}{\underset{|}{i}}\overset{H^*}{\underset{|}{o}}\overset{H^*}{\underset{|}{n}}\overset{H^*}{\underset{|}{a}}\overset{H^*}{\underset{|}{l}}$ $\overset{H^*}{\underset{|}{m}}\overset{H^*}{\underset{|}{o}}\overset{H^*}{\underset{|}{d}}\overset{H^*}{\underset{|}{e}}\overset{H^*}{\underset{|}{r}}\overset{H^*}{\underset{|}{a}}\overset{H^*}{\underset{|}{t}}\overset{H^*}{\underset{|}{e}}$ $\overset{H^*}{\underset{|}{a}}\overset{H^*}{\underset{|}{g}}\overset{H^*}{\underset{|}{i}}\overset{H^*}{\underset{|}{t}}\overset{H^*}{\underset{|}{a}}\overset{H^*}{\underset{|}{t}}\overset{H^*}{\underset{|}{i}}\overset{H^*}{\underset{|}{o}}\overset{H^*}{\underset{|}{n}}$ $L^- L\%$

Pierrehumbert supplies many other examples on tone spreading. But note finally the non-spreading of the free tone H- in (H- + L*).

And remember to bring along your raingear.

H*+H H-+ L* H* L-L%

In this pattern "bring" carries an H- + L* accent whose H- allows the preceding H- of the compound accent on "remember" to spread rightward, but since H- + L* has the unstarred accent on the left the spreading to the right of this same tone (i.e. H- of H- + L*) is blocked by the above mentioned spreading rule. Therefore, no sustained plateau is possible here; instead the FO contour will show a steady rise from L* to the nuclear H*. Furthermore note that, as Pierrehumbert says (op.cit.:128):

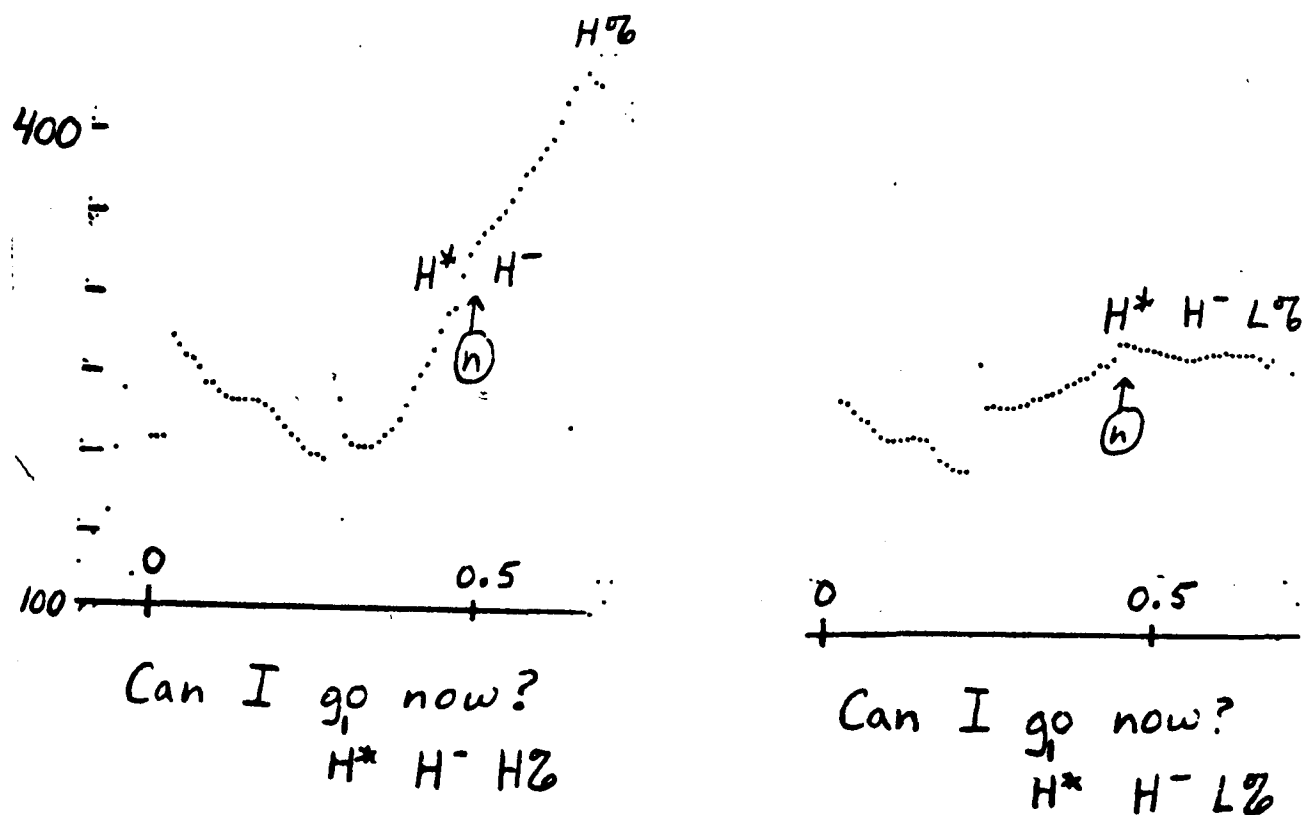
"The nuclear H* is down-stepped after H- + L*, but it is sufficiently prominent that it still comes out higher than the L*"

Certain patterns of English intonation are characterised by downstepping, others by upstepping. Thus, in the tone sequences H L+H and H + L H (but not in other alternating sequences) the second H is relatively lower than the first H, and the third is relatively lower than the second, and so on. This pattern results in the formation of descending terraces and is called downstepping. This idea of terracing is common-place in the British School tradition.

English intonation also has upstepping which raises either L or H after the phrase accent H-. "Because of this rule", says Pierrehumbert (op. cit.: **), the boundary tone after H- is either at

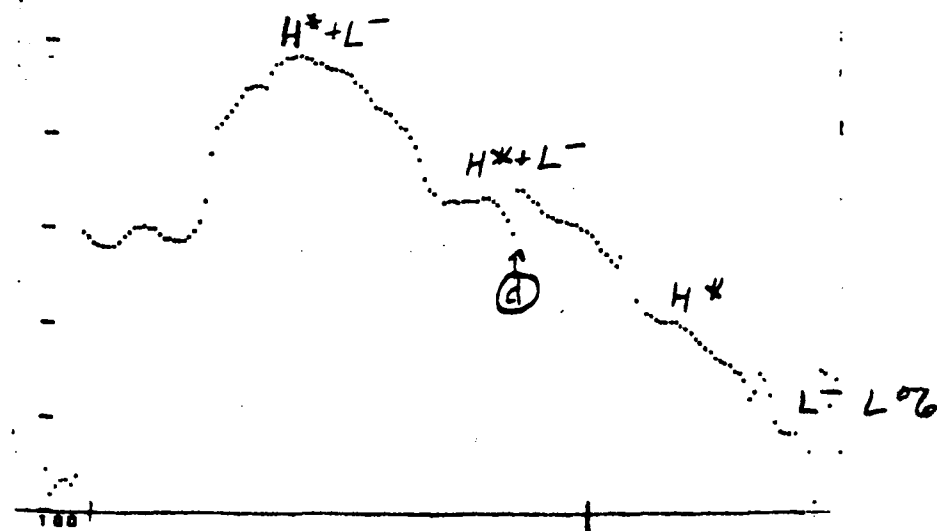
the same level as H-(if it is L%), or else higher (if it is H%). Figure 9 illustrates how this upsteps rule is reflected in the FO contours for H* HH%.

Fig. 9



It is important to note that according to Pierrehumbert (op.cit.:102) in English intonation downsteps do occur interactively in the right environment; however, upsteps are much more limited, notwithstanding Crystal (1969). Pierrehumbert's investigation led her to conclude that upstepping in English applies to boundary tones and she rejects the idea of a pitch accent responsible for upsteps. She says (op.cit.:103).

"One of the main types of evidence for the existence of down-step was provided by FO contours like Figure 2, (Reproduced below).



There are many intermediate levels.

H^*+L H^*+L^- $H^*L-L\%$

Where it is clear that the nuclear pitch accent has greater prominence but lower phonetic value than the prenuclear pitch accent. This is clear because we know independently that the nuclear stress is the strongest accent." Comparable evidence needed to support the existence of an upstep in English calls for a FO contour where "an accent on the right clearly has both less prominence and higher FO than the accent on its left..." No convincing cases of this sort have been found by Pierrehumbert. She affirms the position that upstepping applies to a boundary tone after H-, irrespective of the type of the preceding nuclear accent.

In summation then, this review of the work of Liberman and Pierrehumbert attempts to point out some of the salient features of this particular approach to English intonation:

1. English utterances comprise well-formed tunes.
2. These tunes are structured strings of the tones H and L and they consist of the following:
 - (a) One pitch accent or more, each made up of either a single tone or a pair of ordered tones with a strength relation defined on them.
 - (b) A phrase accent.
 - (c) A boundary tone.
3. Text and tune in English are underlyingly separate. The metrical system generates metrical patterns for both text and tune independently and then combines them in terms of congruence correspondences between their respective nodes.
4. "A quantitative representation of the intonation pattern is computed from the phonological representation by a package of local context -sensitive rules, which applies iteratively from left to right" Pierrehumbert (op.cit.:132). Chief among these phonetic rules is the one which deals with tone spreading, where a tone T- spreads rightwards when the next tone is equal or higher. Pierrehumbert (op.cit.:135) admits that this study of English intonation had left unanswered a number of important problems. The account she gives of text tune alignment is incomplete in many respects. Little is said about intonational meaning.

In spite of these and other shortcomings, it must be acknowledged that Pierrehumbert's representation of English intonation constitutes a significant advance in this complex area. As Cruttender (op.cit.: 72) puts it:

"The conversion of nuclear tones into sequences of H's and L's, which, together with various conventions and rules, serve as an algorithm for the generation of fundamental frequency, constitutes a first attempt at the explicit formal representation of the form of intonation".

Ladd,R.

What is discernible from the rather extensive and heterogeneous work on English intonation is that no two scholars seem to agree on the subject. To disagree is the norm, and ironically to agree has become the exception. Nowhere is this disagreement more in evidence than in the differences of opinion between British and American linguists. 'Configurations vs. levels' is but one of the many debates perennial to such disagreement. Nevertheless, many attempts have been made to get behind disagreements and establish common denominators between the two poles of dispute. One such attempt was Liberman (1975). He integrated the 'lexical-taxonomy' of the British with the phonemicised level analysis of the Americans, thereby coming up with a truly phonological analysis of intonation as Ladd (1980: 13) says. With the publication of Pierrehumbert (1980), and with its idea of linearity of tonal structure, the British taxonomic analysis was once again brought under heavy bombardment. Ladd (1996) shows that the two approaches (this time Pierrehumbert's and that of the British) are not at odds with each other as largely propagated, and that somehow they could be accommodated into a single coherent theory of intonational phonology. This is one of the most notable themes that Ladd (1996) discusses. Before dwelling on this topic however, it seems fairly reasonable to touch upon some of the other key issues which are by no means less important and that make Ladd (1996) yet another 'book on intonation'. These issues will progressively unfold as one finds one's way through the sections and parts of the book.

Right at the outset of his first chapter, Ladd gives his own definition of what he believes to be 'intonation'. He says:

“Intonation, as I will use the term, refers to the use of suprasegmental phonetic features to convey ‘postlexical’ or sentence-level pragmatic meanings in a linguistically structured way” (op.cit.: 6).

The use of ‘suprasegmental phonetic features to convey postlexical-sentence-level pragmatic meanings’ has been acknowledged by almost everyone who has written something on the subject. What breaks new ground in this definition, however, is rather the third characteristic, namely in ‘a linguistically structured way’. In his other book The Structure of Intonational Meaning, Ladd dedicated a whole chapter to the discussion of the place of intonation in linguistics. He argued then rather strenuously against Bolinger’s (1972) proposal that intonation falls outside the realm of linguistics proper (i.e. is peripheral or using Bolinger’s words “Around the edge of Language”).

Without belabouring the point, by emphasizing the linguistic structure of intonation, Ladd seems to dissociate himself from Bolinger in this respect. Another reason not unrelated to the first has to do with the relation between linguistic and paralinguistic features.

“Intonational features”, says Ladd, “are organised in terms of categorically distinct entities (e.g. low tone or boundary rise) and relations (e.g. stronger than/weaker than). They exclude ‘paralinguistic’ features, in which continuously variable physical parameters (e.g. tempo and loudness) directly signal continuously variable states of the speaker (e.g.: degree of involvement or arousal).

Chapters 2 and 3 constitute the backbone of Ladd’s book. He presents a detailed exegesis of the standard theory of intonation, the so-called autosegmental-metrical approach or Pierrehumbertian theory. Some of the theoretical precepts of this theory are embraced whole-heartedly, especially the idea of linearity of tonal representation,

while other features (viz. the analysis of downstep for instance) are criticised rather harshly. Readers familiar with Ladd (1983a) will find little new information, if any at all, in his critiques. A synopsis of his arguments seems to be in order.

Ladd's argument reads as follows:

“My overall argument was that the Pierrehumbert analysis is needlessly complex and fails to express certain cross-classifying similarities between contour types. The source of the needless complexities, I argued, is Pierrehumbert's phonological analysis of downstep and its delicately balanced relation to the use of Bruce's concept of ‘phrase accent’”. (op.cit.: 89).

Pierrehumbert sees downstep as a localised intrinsic feature characterising a certain sequence of tonal strings (i.e. pitch accents). Four of the sort mainly bitonal (viz. H^*+L , $H+L^*$, L^*+H , $L+H^*$) are said to trigger downstep as the figures below show:

3.3 Modifications to Pierrehumbert 1980 91

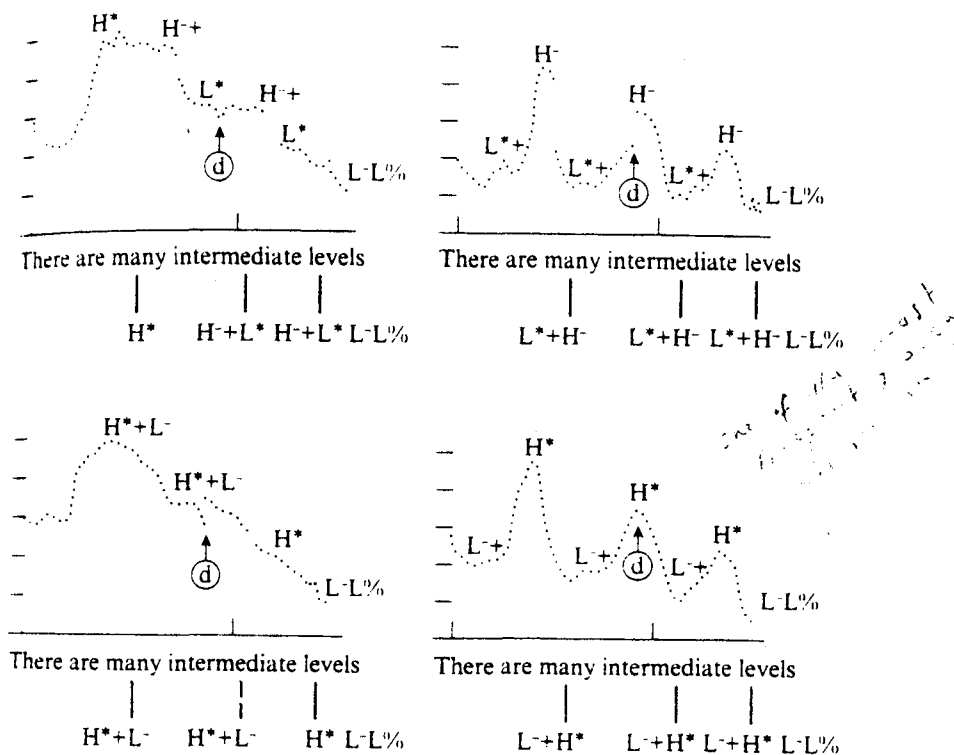


Figure 3.5 Four different downstepping contours in English, applied to the text *There are many intermediate levels*. From Pierrehumbert 1980.

Ladd's argument stems from Pierrehumbert's analysis of the so-called 'calling contour' in English. Pierrehumbert sees this contour as a sequence of H^*+L pitch

accent, an H- phrase tone and an L% boundary tone. Influenced by the analysis of downstep in African tone languages, Pierrehumbert, for no phonetically sound reason, invokes the L trailing tone in the bitonal pitch accent H*+L just to account for the downstepping of the following phrase accent. This analysis is seized upon by Ladd who sees downstep rather as "...an independent linguistic choice with an identifiable meaning and identifiable phonetic effects" (92).

By factoring out 'downstep' and treating it as an extrinsic feature, independent of accent type, Ladd dispenses with Pierrehumbert's unfounded use of the H*+L tone for downstep and instead preserves it for use in rather transparently occurring falling tunes. In consequence, the H*+L H-L% sequence is actualised according to Ladd's view as H* !H (where the diacritic mark !/ indicates a downstepped tone).

One problem solved, many others are created, however. But they could actually be a blessing in disguise, for as Ladd says, Pierrehumbert's analysis is excessively complex. This complexity has much to do with the notion of the 'phrase tone' which Pierrehumbert borrows from Bruce's analysis of Stockholm Swedish (see Bruce 1977). The 'phonetic evidence for the phrase tone analysis' as Ladd (op.cit.: 92) says, "is less compelling in English than in Swedish. In Swedish the phrase accent can be directly observed as a distinct peak in the contour separate from the lexical accent. In English, this is never the case". It is a pity that Ladd dedicates one paragraph and no more to the discussion of this point, but nevertheless, the remarks he makes are very insightful. To go back to the example of the 'calling contour' just cited, recall that Ladd has suggested the use of the bitonal pitch accent H*+L for conspicuously falling tunes. This necessarily means that the L- phrase tone which was originally there when

a falling tune was analysed as H*+L L-L% would now be redundant: for why have a sequence of L- trailing tone, L- phrase tone and L% boundary tone when no real pitch movement is happening?

Another case, also having to do with the ‘calling contour’ is reported to have been investigated by Gussenhoven (1993), although many linguists have mentioned this long before (cf. Fox.1969,1970, Crystal 1969b). Remember that Ladd has analysed this tone as a sequence of H* pitch accent followed by a downstepped !H tone. Gussenhoven says that this !H tone, whenever there is more than one accented syllable in an utterance, chooses the last to align with, as the examples below show:

| | |
|-----------------|----|
| H* | !H |
| Lunch is ready | |
| H* | !H |
| Jonathan’s turn | |

“This behaviour”, says Ladd (op.cit.: 215), “is consistent with the idea that the postnuclear !H in the calling contour in English(...) is in some sense an accent, not just an edge tone...the postnuclear step in the calling contour occurs at a lexically stressed postnuclear syllable if there is one, and only otherwise will it go to the edge of the phrase”.

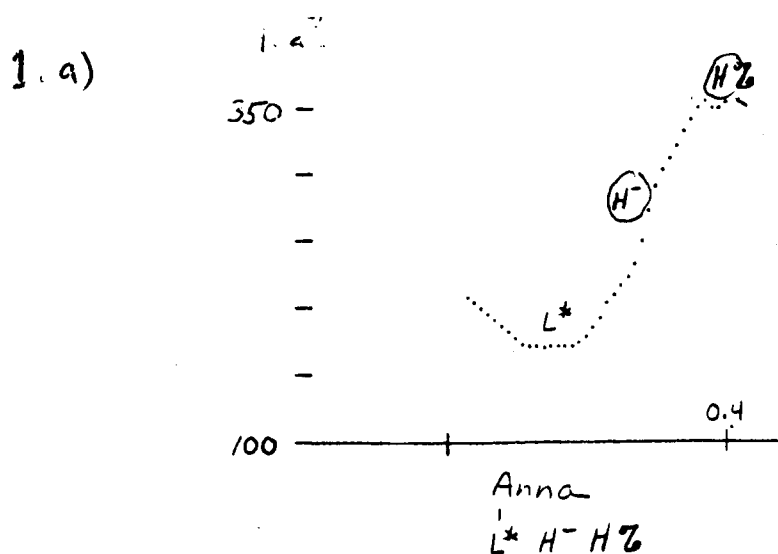
The final accent in a “calling contour” has, as a matter of fact, sparked a debate between Fox (1969, 1970) and Crystal (1969b) as to whether it ought to be considered nuclear having the rightmost position or postnuclear. In any case, it is not demoted to the level of a phrase tone.

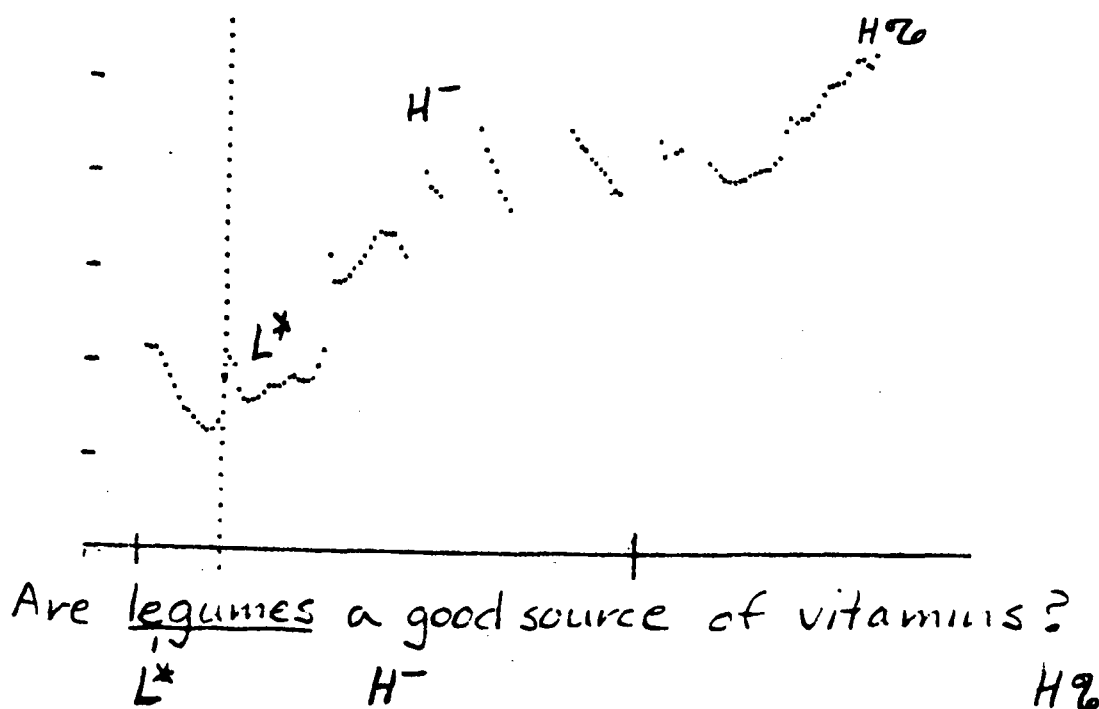
If this is so with the “calling contour”, why not extend this very same idea to one of the strongholds upon which Pierrehumbert based her notion of phrase tone, namely the rise-fall-rise tune. The rise-fall-rise tune for instance, has always been analysed by

British linguists (cf. Crystal 1969, O'Connor and Arnold 1973) as constituting a rise-fall nuclear accent followed by a subordinate rising accent (my emphasis). As in the calling tune, the rise in the rise-fall-rise contour always occurs at metrically strong syllables if there are any, excluding the nucleus; otherwise it would go onto the end of the tune. By the same token then, it ought to be analysed as an accent not a phrase tone.

Another case in defence of these arguments is indirectly arrived at through Ladd's discussion of what he calls (following Gronnum 1991) 'Compressing' and 'Truncating' languages. In a compressing language, according to Ladd (op cit: 133) no part of a tune (i.e. pitch movement) can be omitted, be it spread over a monosyllable or a whole sentence. By contrast, when a part of a tune is omitted for whatever reason, then the language it belongs to is said to be truncating.

Taking the rise-fall-rise tune and stretching it over the two utterances A driving instructor and Sue, and seeing that it is realised in both cases, Ladd claims that English is a "compressing language par excellence". One would wonder though, if this were the case as to how Ladd could account for a case like the following:

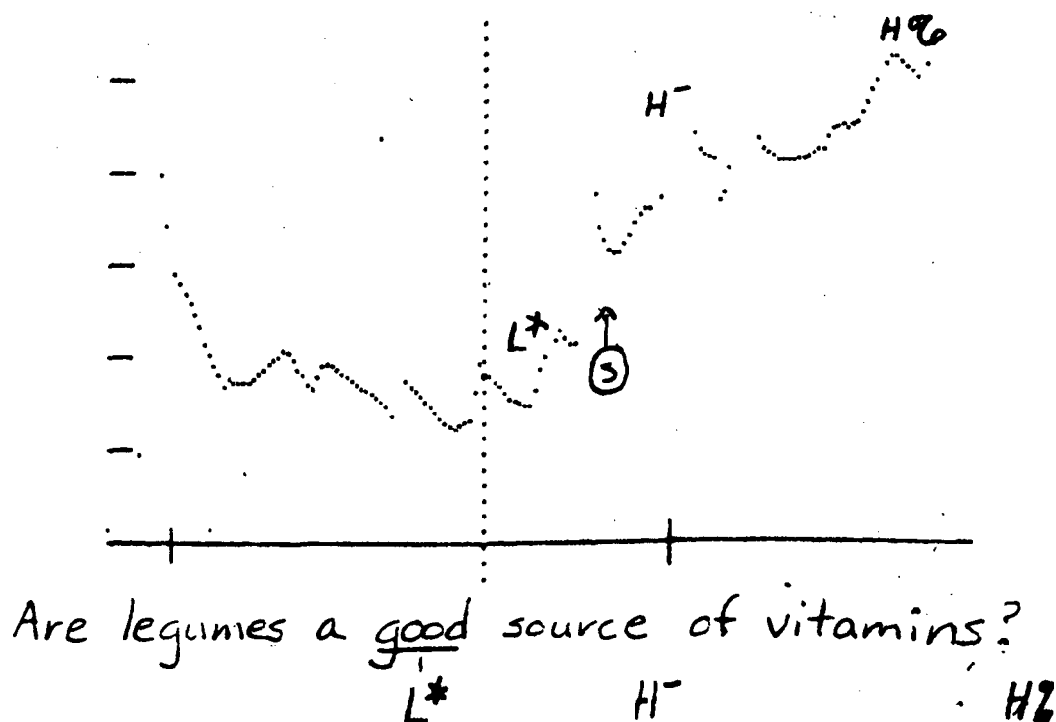




As can be plainly seen, the same questioning tune is realised differently in each case. In (1a.) there is a steadily rising movement from the beginning till the end of the utterance. In (1b.) by contrast, this rising movement is broken off by the plateau which spans the rest of the utterance until the final rise occurs. In Ladd's terms, wouldn't this contour be counted as 'Truncating'? Indeed it would.

This is not however to lead us astray from the argument we originally embarked upon, namely that the phrase tone is far too troublesome a notion that ought to be done away with. To return to the examples just cited and see how they fit into the overall picture

thusfar presented, notice that in 1a. Pierrehumbert analyses the string of tones as L* H- H% despite the fact that substantive evidence for the presence of the H- phrase tone cannot be objectively attested. On what basis does she invoke it? It is not absolutely clear. If this argument, however, were to be dismissed on the basis that the phrase tone is present in the other example (i.e. 1b) taking the shape of a corner, one would then contend that this tone is highly elusive, for it is not clear how it aligns with the text. In 1b for example, as Pierrehumbert shows, the H-phrase tone is aligned with the lexically accented syllable good, which happens to be located after the nucleus. But is this to be generalised to mean: in a rising tune always assign the H- phrase tone to the lexically stressed syllable immediately following the nucleus. The evidence that Pierrehumbert adduces does not seem to support this supposition. In 1c below for instance, the H- phrase tone is aligned not with the stressed word source but after it. To sweep such a discrepancy under the carpet for the sake of maintaining a highly elusive form is misleading.



Physiologically, there seems to be a good explanation as to why this “elbow” movement occurs in rising tunes. “Huang,” says Pierrehumbert, “reports that upstep [i.e. rising movement], frequently occurs in anticipation of downstep [i.e. falling movement] In such cases, a rising and falling rather than a monotonically rising pattern would be generated, and so problems of exceeding the speakers range would not arise” (my emphasis) Pierrehumbert 1980:84). This viewpoint finds resonance in Bolinger (1986). He (op cit : 153) gives the example

| | | |
|----|-----|-----|
| | | u ? |
| | tha | o |
| Is | t | y |

and says that “In completing the first B [i.e. rise]..., the speaker drops the pitch slightly at the end of that to make room for the second B on you. A second (or later) B is apt to force that sort of adjustment rather than just to continue up- it is as if we were afraid of running out of space to reach higher, or perhaps reluctant to display the degree of tension that higher and higher pitch might suggest.” [my emphasis]

So it seems that pitch ‘rationing’, if one may say so, is behind the plateau movement occurring in the rising tune. To subsume such a movement, therefore under the same rubric with other pitch movements such as the –rise in a rise-fall-rise tone for instance by dogmatically calling them a ‘phrase tone’ is misleading as stated above. In the light of this, Ladd’s classification of English as a “compressing” language seems to be partly justified, for his main concern was with actual pitch accent movements of the sort which is alien to the type discussed in 1b and 1c.

If this H- phrase tone were to be eliminated, someone might contend, how would a ‘questioning’ tune with a high-rise ending be phonologically distinguished from a

low-rise ending statement tune. In answer to this, nothing could be more handy than Ladd's "Phonological features theory" alluded to earlier. By abstracting a feature, say "upsteps" and treating it with an identifiable meaning (e.g. questioning, for example) the high-rise and low-rise could not only be formally linked by having the same phonological representation, but also functionally (i.e. semantically) kept apart - a strategy whereby two birds are hit by the same stone.

Be that as it may, 'downstep' and its concomitant bearing on the validity of the notion of 'phrase tone' is not the only feature that Ladd discusses. Two other features namely 'raised peak' and 'delayed peak' are also given due attention.

In his (1983a) paper, Ladd analyses [delayed peak] as a phonological feature that accounts for differences between what are traditionally called 'rising-falling' tunes and 'falling' tunes. By analysing both tunes as [L-+ H*] with the former having the description [+ delayed peak] and the latter [-delayed peak], Ladd thinks that he can phonetically cross-classify the two tunes in an identical way. He did not realise then that the leading unstressed tone L- in this bitonal analysis corresponded actually to an accentual low target (i.e. a starred tone) L*, having been preceded by a stepping down movement. In the face of this evidence Ladd considers his analysis. He says: (op cit:104)

" In suggesting that the 'scooped' or 'delayed-peak' falling contours are tonally identical to non-delayed falls and that the only difference is one of alignment, I ignored the fact that the delayed contours often involve a slight stepping down to the accented syllable before beginning the rise to the (delayed) peak and subsequent fall.

This slight stepping down is almost certainly to be interpreted as a low accentual target aligned with the accentual syllable namely a L*; that is, the delayed peak contour should be treated as L*+ H...” This analysis seems to be more consistent with the views British linguists have always had.(cf. Ladd (1980 : 112)

The other feature, namely ‘raised peak’, which *grosso modo*, covers the same grounds as the term “Contrastive stress/accent” was unwillingly abandoned after the heavy criticisms it had drawn from Pierrehumbert and Bolinger. Arguments against the ‘raised peak’ feature stem from the fact that raised peak does not constitute an all-or-none contrast between the two varieties of the tune at issue, and anything that is not categorically contrastive, must *a priori* be gradient, and likewise anything that is gradient must be paralinguistic. “As it happens”, concedes Ladd (op cit:285), “further work (Hayes 1993, Ladd, Verhoeven and Jacobs 1994, Ladd and Morton ms) has convinced me that Bolinger and Pierrehumbert were probably right about raised peak -emphatic peak raising probably is gradient and paralinguistic, though it sometimes gives rise to nuances that appear categorically distinct.”

It is paradoxically intriguing to see this very same idea of “scoop” or “raised peak” as a gradient feature propounded by Ladd himself. In his (1980) book Ladd says: (op cit:109)

“More formally, then, the hypothesis of this chapter is that intonational meaning involves both all-or –none contrast between linguistic categories and dimensions of gradience within categories...Specifically, the all-or-none categories are the four tones fall, fall-rise, high-rise, and low-rise, while dimensions of gradience are scoop, pitch range, and such ‘less linguistic’ features as loudness, tempo, etc” [my emphasis]

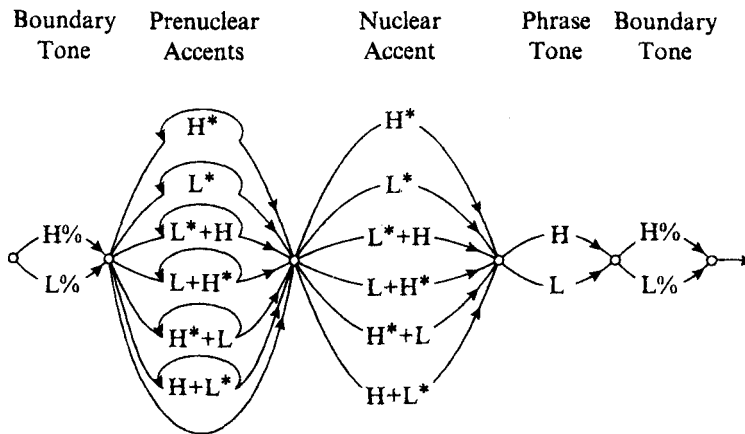
And in another position

“I class scoop as a gradient dimension, not an all-or-none contrast, since in most cases it merely adds a degree of emphasis, insistence etc”. [my emphasis]. (op cit:112)

Such a discrepancy in one’s viewpoints is not fatal however. As it happens sometimes, and how frequently it does when intonation is the subject concerned that

“... one analyst treats a given intonational phenomenon as linguistic and makes provision for it in the phonological analysis (in this case the tonal string), while another analyst - or the same analyst a few years later - argues that the phenomenon is outside the system of linguistic contrasts and consequently should not be represented phonologically at all” (op.cit.: 282)

Ladd wraps up his book by drawing a comparison between Pierrehumbert’s autosegmental–metrical analysis of English intonation and that of the British tradition. Though acknowledging that Pierrehumbert’s approach provides a new foundation for analysing intonational distinctions, and not merely a new notation for the same old description, Ladd argues that the two approaches could somehow be integrated into a more coherent and elaborate system of intonational representation. Pierrehumbert, it must be remembered, conceives of intonation as a sequence of pitch accents followed by an obligatory phrase tone and an obligatory boundary tone. This linearity of tonal structure, as it seems, accords no theoretical status to what is conventionally known in British analyses as nuclear and prenuclear accents or tones, despite the fact that Pierrehumbert does refer informally to the last accent in the sequence as the ‘nuclear’ accent. (Ladd, op.cit: 210). Without obliterating Pierrehumbert’s sequential order of tones Ladd, *mutatis mutandis* modifies Pierrehumbert’s original finite –state grammar for generating English tunes so as to allow for a nuclear and prenuclear segment. The final rendition of this finite state grammar as Ladd suggests looks like:



Though highly commendable this new analysis, in my view, complicates intonational description and representation perhaps unduly.

Chapter 3

The Analysis of Arabic Intonation

3.1 Introduction

The intonation of the variety of spoken Arabic described in this study can be analysed in terms which correspond very well to those that have been used in the standard analysis of English intonation.

In order to recognise the nuclear tones of spoken Arabic, and to study the structure of its intonation, the following theoretical constructs and principles will be used, explicitly or implicitly.

1. The principle of contrast to distinguish between significant units and meanings thereof.
2. Syntagmatic relations to analyse the intonation units and their accentual structure.
3. Paradigmatic relations to establish the contrastive tones
4. Direction of pitch movement to distinguish between recognizable tones.
5. Pitch range to study any meaningful differences between otherwise similar tones.

3.2 The structure of Arabic intonation

The intonation of utterances can be regarded as a succession of intonation units or TONE GROUPS.

3.2.1. The unit of Intonation (The Tone Group)

A sentence in this variety of Arabic may consist of one or more tone groups. Tone groups are quite often, but by no means always, coextensive with such syntactic constituents as the noun phrase, the verb phrase, the clause, adjunct, disjunct, the sentence, e.g.

ʔiTullaab miDirbiin 9an iddiraasi min ʔusbuu9een

‘The students have been out on strike against studying for two weeks’.

This sentence may be realized as one or more tone groups as shown below.

(/marks tone group boundary)

(i) One tone group

/ ?iTTullaab miDirbiin ʒan iddiraasi min ?usbuuʒeen /

(ii) Two tone groups

/ ?iTTullaab / miDirbiin ʒan iddiraasi min ?usbuuʒeen? /

(iii) Three tone groups

/ ?iTTullaab / miDirbiin ʒan iddiraasi / min ?usbuuʒeen \ /

To give an example with a disjunct as a separate tone group, consider :

biSaraaḥah / ʒindu SaraṬaan /

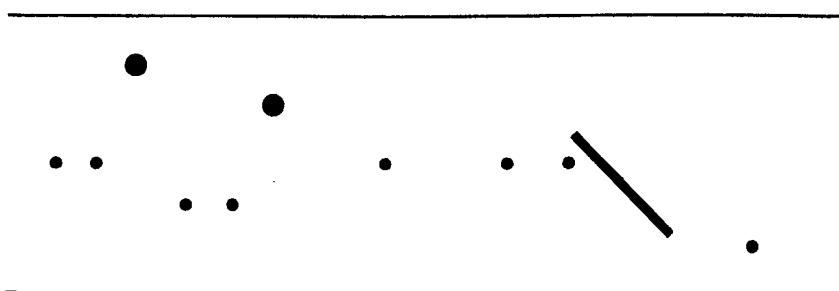
‘Frankly, he has got cancer’

As El-Hassan (1991:22) says :

“Arabic speakers can, for good reasons choose to align tone groups with certain intra-clause constituents or equally combine two or more clauses in a single tone group” (cf. Halliday 1970 : 4)

As mentioned above, the intonation of utterances can be considered syntagmatically as a sequence of pitch accents each indicating a prominent syllable and, consequently, a prominent word, e.g.

?iTTullaab miDirbiin ʒan iddiraasih



Every tone group may potentially have the following structure:

(PRE-HEAD) (HEAD) NUCLEUS (TAIL)

The central obligatory feature of each tone group is the NUCLEUS, which coincides with the chief accented syllable of the tone group. The nucleus may optionally be followed by a TAIL, consisting of all post-nuclear syllables. The pattern of the tail is, however, not independent of that of the nucleus, so that nucleus and tail together form a single phonological entity.

The nucleus may optionally be preceded by a HEAD, which commences with the first-pre-nuclear accented syllable of the tone group, and includes all following accented and unaccented syllables up to the nucleus. Any unaccented syllables preceding the head are designated the PRE-HEAD. Again, however, the intonation of the pre-head is not distinctive, and hence the pre-head and head together constitute a single phonological entity.

We may thus recognise two distinctive parts of the tone-group, as in the majority of analyses of English intonation within the British tradition: the pre-head + head, and the nucleus + tail. This approach of 'immediate componentialization' writes Crystal (1969a:209):

"recognizes from the start the linguistically central principle that different places within the tone-unit have different functions and possibilities of contrast, and that these exist relatively independently of each other. Second, the approach allows one to give due importance to gradation in linguistic contrastivity. Third, it produces a simpler descriptive statement to refer all tone – units to combinations of two or three contrastive types of variation than to list major contours as wholes without explicit reference to their immediate constituents. This is particularly important in view of the fact that the main components of the tone-unit, other than the nucleus, are optional: if one has a 'tune' approach, one is forced to see a tone-unit consisting of, let us say, a nucleus plus head, as different from one consisting of a nucleus plus prehead, and both of these from nucleus plus head plus prehead. The approach becomes extremely cumbersome as types of unit multiply, and there tends to be marked redundancy."

In what follows, the contrasting patterns for each tone-group will be called heads and tones respectively. The syntagmatic accentual patterns of tones will be discussed after listing the recognizable tones in this variety of spoken Arabic.

3.2.2 Tones

Consider the following contrasts on the disyllabic word:

1. saafar 'He left / travelled / departed'.

1. saafar

2. saafar

3. saafar

4. saafar

By ringing tonal changes, it is possible to recognise, initially at any rate, four basic tones in spoken Arabic as shown above. These tones are: 1. a fall, 2. a rise, 3. a fall-rise and 4. a rise-fall. These tones are not only phonologically distinct, but semantically different, too. The fall at 1 conveys a statement of fact, complete, definite and final; the rise at 2 asks a yes-no question, pure or with an element of surprise, the fall-rise implies that there is some contrasting bit of information which the addressee will infer, e.g.

bass lissa maa waSal

'but he hasn't arrived, yet'

and the rise-fall expresses speaker's relief and satisfaction at the fact of the departure.

When the factor of accent range is taken into consideration, the first two tones (i.e. the fall, and the rise) can be subdivided as follows:

1. The fall: a) low fall, b) high fall.

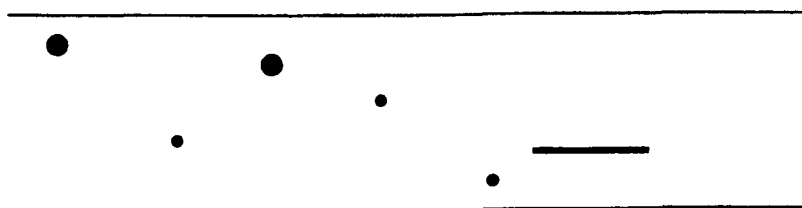
2. The rise: a) low rise, b) high rise.

The status of low and high will be discussed later on, but suffice is to say at this point that these subtones are phonologically and semantically distinct; details will be discussed later.

If the factor of movement per se is considered, nuclear tones are either moving (up, down, etc) or level (-). Compare:

kunt fii bariis 'I was in Paris'.

lamma |kunt fii bariis 'When I was in Paris...'

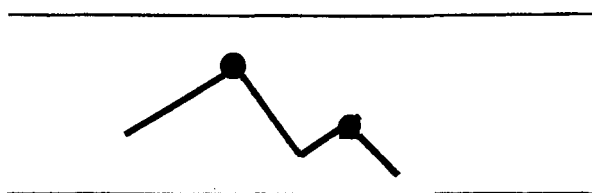


In the following sections, each of these tones will be described in turn, with exemplification of the different possible structures and with a brief characterisation of its use and general meaning.

I. The Fall

I(a) The low fall

Phonetically, the nucleus of the low falling pattern begins in the lower half of the speaker's normal range and falls to near the bottom of the range. The tail is low and level. The typical pattern of the head can be represented graphically as follows :



This pattern, as will be shown below, occurs in all sentence types and along with any

one of tonal types mentioned above. Here are some examples of the low fall:

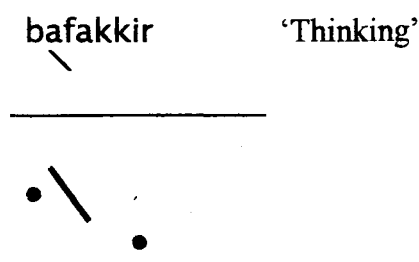
- a) (keefak? 'How are you?') kwayyis 'Fine'
-
- b) (?eeš ni፩mal bilfuluus tSaddaquu biiha
 'What shall we do with the money?') 'Give it away in charity'
-

In example (a) the utterance consists of a single word with two syllables. The low fall is associated with the first syllable kway-, and the following unaccented syllable, the tail -yis, remains very low too. The nucleus falls from about the middle of the voice range (or from the lower half of the voice range) to near the bottom of the range.

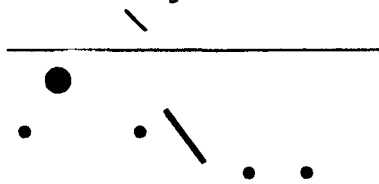
In example (b) the utterance consists of two words containing five syllables. The nucleus is the first syllable, and it is followed by two unaccented syllables, one accented syllable and another unaccented ultimate syllable. The last four syllables, including the accented one, make the tail. Once again, the nucleus drops from the lower half of the speaker's normal range to near the bottom, and the tail maintains a level low pitch in spite of the accented syllable. The unity of nucleus + tail is thereby given phonetic manifestation. This confirms what was mentioned earlier (cf. 3.2.2.) that the pattern of the tail is not independent of that of the nucleus.

Now consider the examples at (c) and (d) with head and/or pre-head.

(c) (šuu 9am ti9mal 'What are you doing?')



(d) darasna tarjamih 'we studied translation'



The syntagmatic pitch pattern in example (c) is such that the first syllable which is unaccented is pre-nuclear and is pitched rather low (near the bottom third of the range) to be followed by the nucleus, which although low, starts at a relatively higher level, still within the lower half and drops to near the bottom. The tail, an unaccented single syllable, follows suit maintaining a very low level. In short, there is a step -up to the onset of the low fall, a movement down -from there to near the bottom followed by a low, level tail.

In example (d), there are six syllables comprising the pre-head, head, nucleus and tail.

The details of the accentual pitch pattern are as follows:

low pre-head, step -up to the head, step-down to the ultimate unaccented syllable of the first word, step -up to the onset of the low tonic, movement-down-from to near the bottom followed by a low, level tail of two unaccented syllables.

The accentual pattern exhibited by the head and pre-head in example (d) is in fact typical of spoken Arabic irrespective of sentence type. The relatively high head gains prominence because of pitch obtrusion (i.e. deviation from a relatively constant pitch level), and the word containing the head similarly gains semantic prominence. Beyond

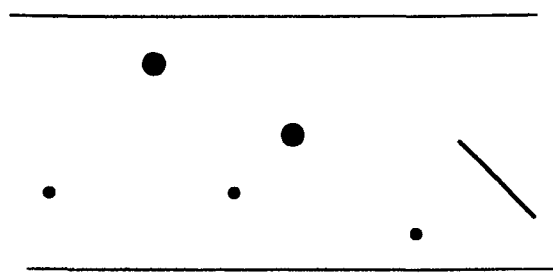
that, the head does not seem to play any further contrastive role. Note that the entire tone group is executed within the lower half of the speaker's range.

The low fall imparts feelings of completeness and finality coupled with rather detached, reserved, calm (and at times hostile) attitudes.

The next example to be cited here is one with two accented syllables preceding the nucleus.

(e) (ribiḥ ilyaanaSiib 'He won the lottery')

ya ʔallah šuu maḥḌuuḌ 'How lucky he is!'

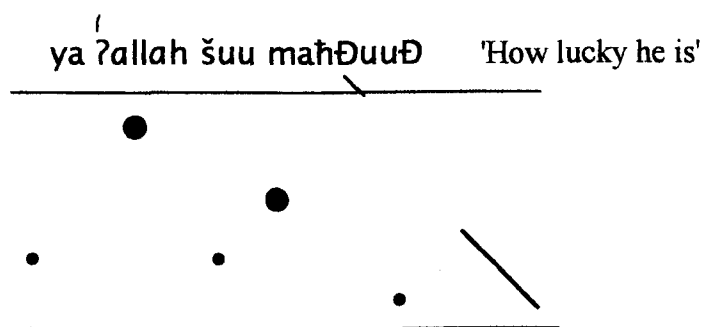


The two accented pre-nuclear syllables exhibit relative descent with respect to each other; the former being slightly higher than the latter. This phonetic feature is common in other languages, including English, and has been referred to as declination in the literature.(cf. Cohen and 't Hart (1967), Pierrehumbert (1979), Cooper and Sorensen (1981) and Ladd (1984)).

The term 'declination' is also used in reference to the fact that the voice pitch in declaratives functioning as statements, as well as in interrogatives functioning as questions, (wh-questions only in spoken Arabic) and in imperatives functioning as commands, in interjections functioning as exclamations, the voice pitch in all of these tends to be lower towards the end of the utterance than at the beginning. Partly, this feature of declination has to do with the fact that unaccented syllables at the beginning of the types of utterances mentioned earlier are usually higher in pitch than unaccented

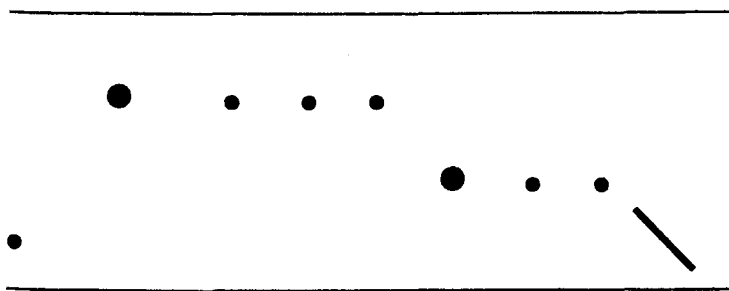
syllables at the end, as shown in examples (c), (d) and (e).

These tonetic patterns may be characteristic of many intonational languages including English. But what is distinctively Arabic is that the pitch obtrusion patterns exhibit an up-and-down series of movements. Consider example (e) above, repeated here:



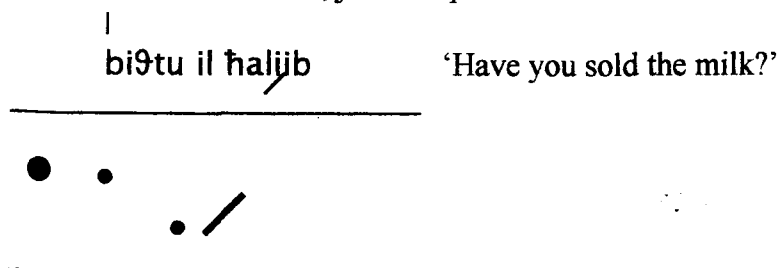
English does not seem to have this kind of 'jumping' movement, cf.

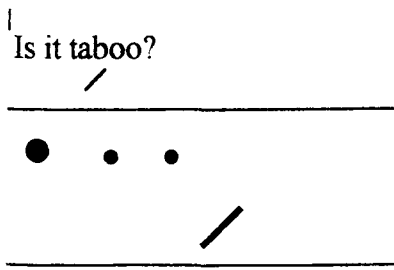
I'll meet you at the top of the road



No such up-and-down movement is exhibited here, and the lowest syllable in the utterance is the nucleus itself, the unaccented syllable immediately preceding the nucleus does not descend, as the Arabic counterpart does.

These features apply not only to falling tones, but also to other types as will be shown in due course. But for now, just compare these two rises in Arabic and English:

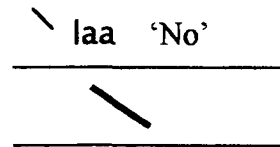




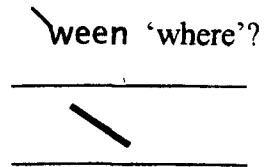
1(b): **The high fall**

From a phonetic viewpoint, the nucleus of the high falling pattern begins in the upper half of the speaker's normal range and falls to near the bottom of the range. As in the low falling pattern, the tail is low and level, and the head exhibits a pitch pattern similar to that discussed under the low fall. Examples:

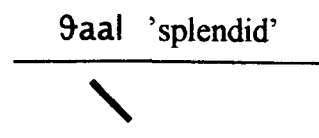
1. (biddak tijji 'Are you coming?')



2. (fii haadiΘ seer 'There is a traffic accident')



3. (bukra ftitaaħ ilmustašfa 'Tomorrow is the inauguration of the hospital')



As these examples illustrate, the determining factor of the high fall, in contradistinction to the low fall, is accent range. With the high fall, the accent range is very wide and steep; the speaker is perceived to be shouting in anger or in joy. Naturally, this factor contributes to a difference in meaning between the low and the high fall -which justifies the recognition of this intonational contrast. Without getting bogged down in semantic details, the high fall in educated spoken Arabic conveys a sense of involvement and interest -be it an expression of anger or joy, as mentioned above. One cannot but

sympathise with Crystal (1969a:) who warns analysts of intonation of a distortion of meanings by labelling them. The trouble is that such labelling is needed, however crude and unscientific, to enable the analyst to proceed.

It is sound to say that the distinction between the low fall and the high fall is not to be categorised on a par with that between the fall and the rise. There is a primary distinction between fall and rise, and within each a secondary distinction between low and high. This perhaps tallies with Halliday's analysis of English intonation, which has both primary and secondary tones.

The functions of the low and high fall in educated spoken Arabic may be so well defined, anymore than their English counterparts are. However, this problem must not deter the researchers if some meaningful contrasts can be established.

The status of low and high fall is best summed up by Ladd (1980: 204) who suggests that

"pitch range -both overall height relative to the speaker's voice, and relative width or steepness of pitch movement- is an independently meaningful dimension of gradience along which segments can vary without in some sense destroying their identity as segments; for example, steep fall and shallow fall are not two different contours, but are both instances of a single category fall, together with a difference of pitch range which makes a separate contribution to the meaning of the contour."

Perhaps one should add to Ladd's statement a rider-underlining acknowledgement of the difficulty of defining meaning, as Crystal has indicated.

The importance of range to the study of intonation is worthy of further attention. It seems that the relative steepness and abruptness of the fall has significant implications for some meaningful contrasts in English and in Arabic. Ladd (1980:106) gives the example:

'... If a child asks his father for a piece of candy and the father says

(6) N

o

the child may try again, whereas if the father says

(7) N

o

The child is likely to get the message. Again, the definiteness of the assertion is in some sense matched by the abruptness of the fall".

Ladd's English example easily and readily translates into spoken Arabic with similar effects.

a) laa

A diagram showing a horizontal line at the top, a short diagonal line sloping downwards, and another horizontal line at the bottom, representing a shallow fall in pitch.

b)l aa

A diagram showing a horizontal line at the top, a steeper diagonal line sloping downwards, and another horizontal line at the bottom, representing a steeper fall in pitch.

The reply at (b) has got a wider accent range, and a steeper fall, and both of these features along with the accompanying abruptness of the fall create the impression of irreversibility and definiteness of the reply.

One more idea having to do with range seems to be in order here, namely the so-called 'expressive lengthening' (cf. Ladd: *ibid.*), e.g.

bithibbiih

'Do you (feminine) love him?'

- kəiir

'very much'

pronounced :

A diagram showing a horizontal line at the top, a long diagonal line sloping downwards, and another horizontal line at the bottom, representing a long, shallow fall in pitch.

This kind of lengthening and the wide accent range matches up with the muchness (or abundance) described.

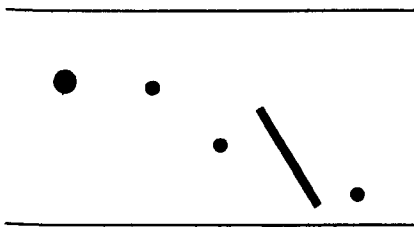
To examine the informational structure of the head and tail of the high fall, consider these two examples

1. (šuu raʔyak bahallawħah)

'what do you think of this painting'

lawħa ʕaḏiimih

lit. 'a painting great'



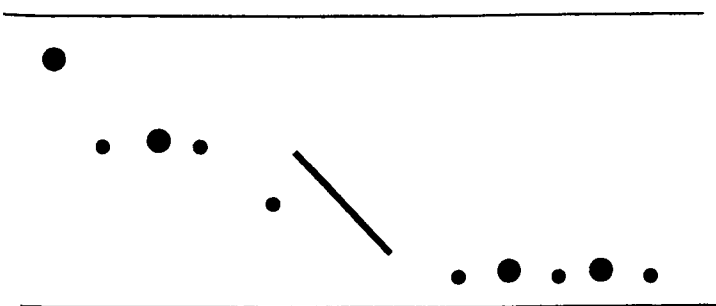
2. (xallafat sabṯ jraawah)

'It gave birth to a litter of seven puppies'

walla fiiha ʕajaayib haadi ddunya

'By God this world has wonders'

'walla fiiha ʕajaayib haadi ddunya'



The head and tail patterns are reminiscent of the ones examined under the low fall

(i) the characteristic up-and-down movement.

(ii) the down stepping accented syllables in the head

(iii) the declination of unaccented syllables in the head

(iv) the low, level tail near the bottom of the range despite the presence of two accented syllables.

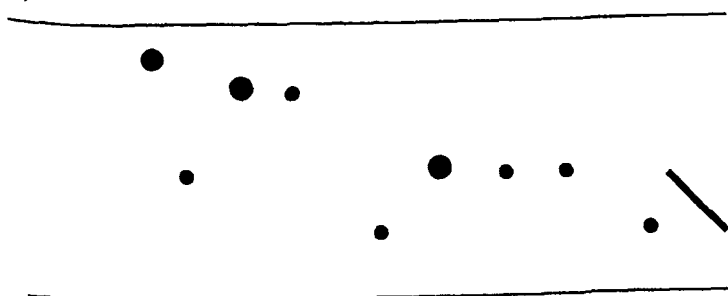
So far nothing has been said about contrasting heads in the pretonic; it is time to address this issue. Consider:

ʔana laazim abaTTil ittadxiin 'I must give up smoking'

which may be realised as the utterances shown at (a), (b) and (c) below

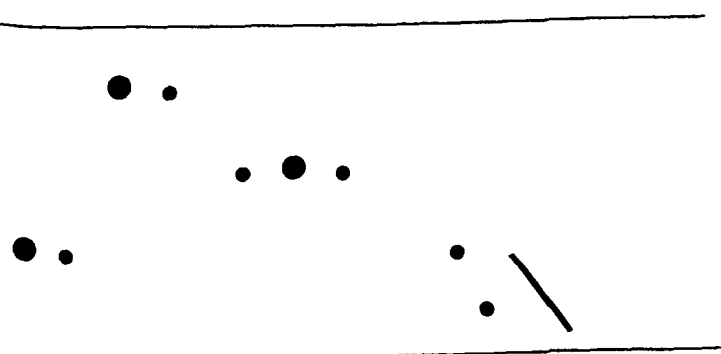
ʔana laazim abaTTil ittadxiin

a)



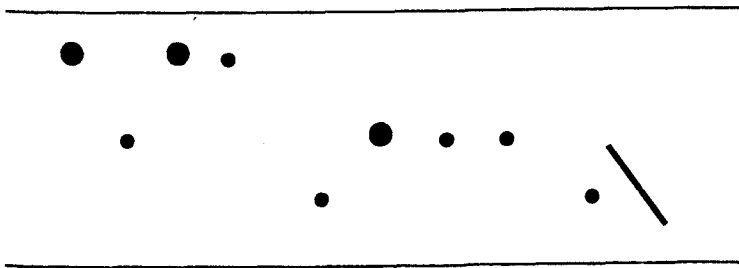
ʔana laazim abaTTil ittadxiin

b)



| | | |
 ?ana laazim abaTTil ittadxiin

c)



The pattern at (a) (in answer to *šuu laazim tigmal* 'what are you going to do' with a down-stepping pretonic and a medium fall (see below) is a normal and unmarked reply.

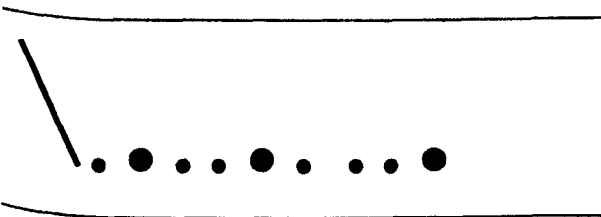
In comparison, the pattern at (b) (in answer to *?eešganaa፻tak ba፻፻ hattagriir iTTibbi?* 'How do you feel after this medical report?') with a step-up to the word *laazim* 'must', suggests that the matter is now urgent -the obligation I necessity expressed by *laazim* is given extra emphasis.

In answer to the question *miin malluub minnu garaarSi፻፻hi* 'Who is required to make a health decision?' the pattern at (c) with the high head and a stepping-down pretonic suggests a sense like:

It is I (not you, etc) who must stop smoking. Note that the hearer may perceive a resemblance between the pattern at (c), and that at (d) where the tonic shifts leftwards to fall on the first syllable, viz.

\ | | |
 ?ana laazim abaTTil ittadxiin

d)



Here the pitch starts high and there is a movement down -from on the first accented syllable ; the pitch reaches its lowest by the end of the first unaccented syllable, and all the post-tonic syllables make a low, level tail. This last example illustrates what may be considered "accentuation by default", which Bolinger (1986:134) describes as 'shifting the accent away from a repeated, or otherwise redundant item'. Of course, the context plays an important role in placing the tonic on the first syllable of this utterance : the preceding question *miin laazim ibaTtil ittadxiin* 'Who must stop smoking?' requires a reply in the form of a noun or pronoun in response to the question-word *miin* 'who?'. Hence, the pronoun *?ana* 'I' takes the tonic -the rest of the information is old or redundant. Just one more example on contrasting heads.

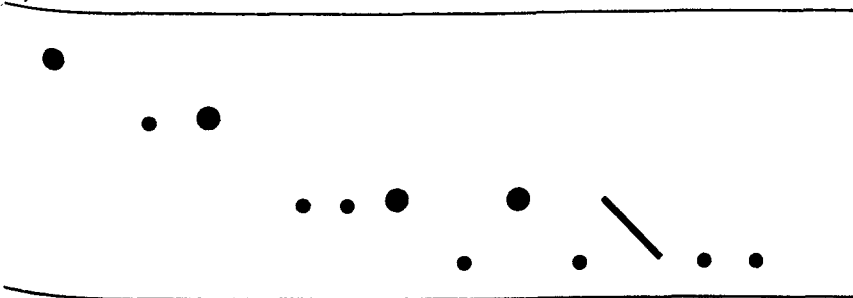
Consider:

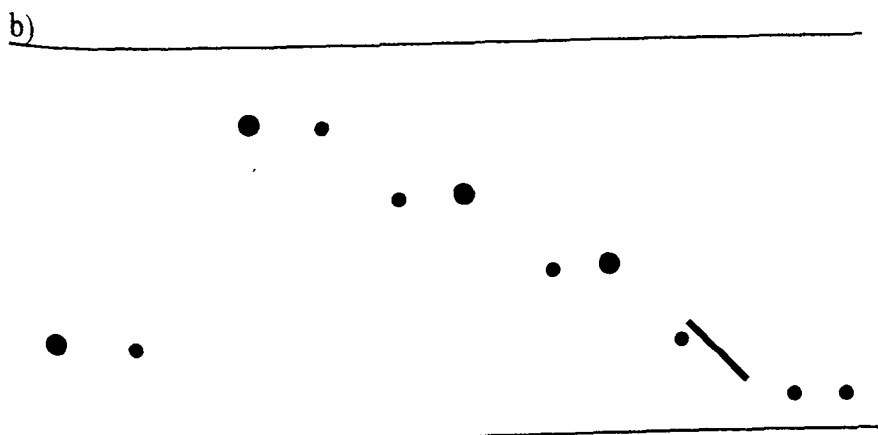
?ana maa bastaTii? aDyyif ?a?arah 'I can't host ten'

which may be realized as a) or b), among other forms:

?ana maa bastaTii? aDyyif ?a?arah

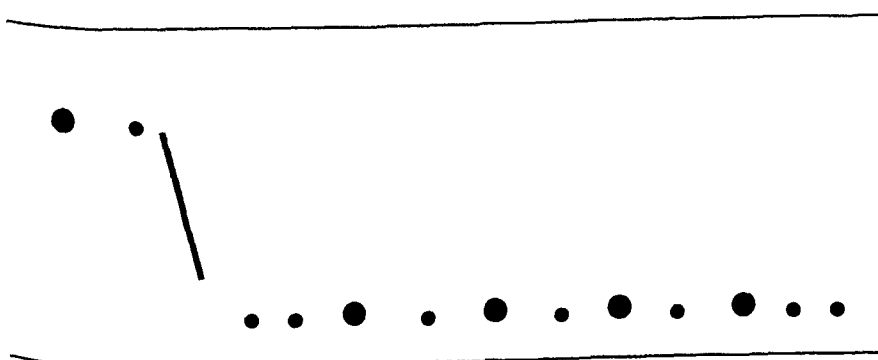
a)



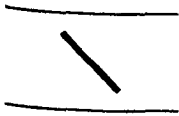


The pattern at (b), where the negative particle *maa* is pitched higher than the preceding head such that there is a pre-nuclear step-up followed by a step-down, gives more weight to the negative than the pattern at (a). The difference is one of degree or gradience as Ladd (1980:106) points out.

There is a third possibility shifting the tonic leftwards to the negative particle *maa* (cf example (c), above):



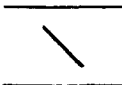
This section has dealt with the falling pattern of intonation in spoken Arabic. The fall was divided into a) the low fall and b) the high fall. But both of these are in a sense marked, and the native speaker recognises a neutral falling tone which starts mid low and drops to a low level, viz:


ruuḥ 'go'


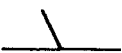
In English, as Halliday (1970 : 9) suggests:

"The secondary tones are in fact of two types. Those in the tonic segment and those in the pretonic segment. The tonic secondary tones are the finer grades of pitch movement in the tonic segment: for example, within the primary tone 1 (falling tonic) we can distinguish, as secondary tones, a wide fall (high to low), a medium fall (mid to low) and a narrow fall (mid to low)"

Perhaps what was described above as the neutral falling tone in Arabic corresponds to Halliday's 'medium fall (mid to low)'. Thus in Arabic:

high fall ruuḥ
 is overjoyed or angry

low fall ruuḥ
 is detached

fall. _____
 is just complete and final

Finally, it is worth noting that Halliday (ibid.) recognises what he calls 'pretonic secondary tones' whose domain is the pretonic segment. In association with the falling tone, i.e. Halliday's tone 1, pretonic secondary tones are either said to be even (with few or no changes of direction) or uneven with many changes of direction).

In spoken Arabic a pretonic comprising several syllables is usually characterised by many

changes of direction, and rarely, if ever, by none. The examples given in this section should be sufficient to illustrate this point.

II. The Rising Tone

(a) The Low Rise

(b) The High Rise

In term of pitch movement, the nucleus of the rising tone rises. Pitch height varies, and pitch range is wide, medium or narrow. In general, the rising tone conveys a sense of incompleteness and uncertainty; but more particular contexts, as the examples below will illustrate.

As in the case of the falling tone discussed in the previous section, the rising tone is subdivided principally into (a) low rise and (b) high rise, depending on pitch height of the onset of the tonic and the width of its range.

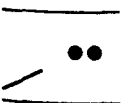
II(a): The Low Rise

Phonetically, the nucleus of the low rise starts in the lower part of the speaker's normal range and rise to a mid-low level, i.e. the domain of the entire tonic segment is below the bottom half of the speaker's range. Examples:

1. ʔaħmad 'Ahmad' (call)



2. ʔsaafaru 'They left?'



3. miin 'Who?'

4. ba9deen

Example 1 is a vocative, 2 a yes-no question, 3 an information / wh-question requesting confirmation of previously provided information, and 4 prompts the speaker to proceed with his narration. As shown, the tail, when present picks up the end of the trail of the nucleus and continues the rise till the end of the utterance, within the height and range described above (roughly low to mid-low).

As the last example shows the low rise has this important discursual function of prompting and encouraging the interlocutor, notably on the phone, to continue. Here are two more illustrations of this function:

5. ʔaah / ʔaywah 'Yes, go on'

6. hmm 'Hmm/

The low rise (indeed, the rising tone generally) plays a significant grammatical role in spoken Arabic. When applied to a declarative string of words, the resulting utterance has the function of a yes-no question. In standard (written) Arabic, there are grammatical signals for such questions:

hal 'Do, Does, Did' and

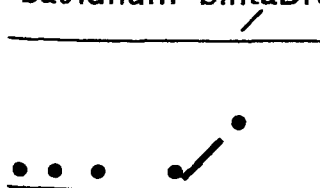
ʔa 'Do, Does, Did'

These two grammatical devices are very formal and therefore extremely rare in spoken Arabic.

The rising tone has taken their places as a device for polarity (i.e. yes-no) questions.

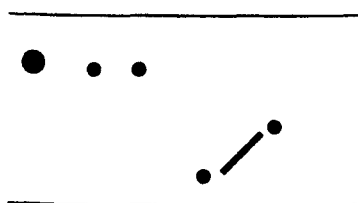
The pretonic segment of the low rise tends to be fairly level on mid-low pitch with a slight down-to movement towards the onset of the nucleus. The overall picture is similar to that of the pretonic segment of the low rise in English described by Halliday (1970:11). Example:

7. [|]baʔidhum bintaʔru 'Are they still waiting'



On the other hand, the pretonic can be pitched fairly high (in the middle or even in the upper half of the speaker's range) as in:

8. baʔidhum bintaʔru



This gives emphasis to the head **baʔidhum** 'Are they still' (cf. Bolinger's Profile C (1986:149), where, as he says, the pitch starts high in order to come down viz.:

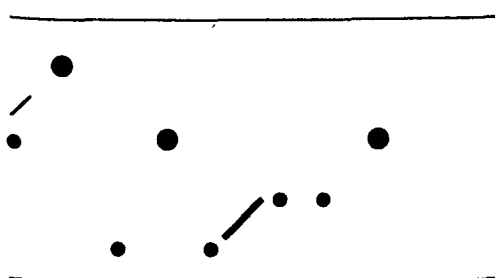
Give it

a
y
r
t

The example at 9 further illustrates this point along with other observations.

9. ʔilθinab siθru naʔzil bissuug

ʔThe price of grapes has dropped on the market'



The high head gives prominence to the commodity ʔilθinab 'grapes', and it captures the attention of the interlocutor (s). The pretonic pitch pattern exhibits the familiar down-stepping movement (cf. Declination) characteristic of spoken Arabic.

The nucleus and the tail, including the last stressed syllable in the tail, exhibit the low rise. Note also that although the last word in the utterance, i.e. bissuug 'on the market', is a lexical word with a stressed ultimate syllable; it does not qualify as the nucleus of the utterance because the sense / information it provides is somehow redundant in the light of the preceding context and words which talk about prices going down -it is with reference to what goes on the market that such transactional relations have meaning. Again this is another instance of accentuating an item by default such that the tonic shifts away from a word that is repeated or redundant.

II(b) The High Rise

The high rise usually starts near mid-low and rises fairly steeply to a high pitch beyond the above-mentioned domain of the low-rise. The tail, when there is one, continues the tonic rise until the end of the utterance.

With regard to English, the high rise in British tradition is similar to Bolinger's Profile B', where the accent is jumped up to, the accent being at a high pitch.

Examples:

1. $\acute{y}uusuf$ 'Joseph' (vocative)



2. $\acute{b}tigdar$ 'Can you?'



3. $\acute{n}aajih$ 'Are you / Is he successful?'



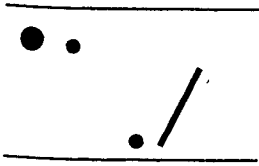
The high rise signals more interest and friendliness than the low rise: it tends to be deferential, too. Specific meanings depend on the context. For instance, the imperative on a high rise functions as a polite request, e.g.

4. $\acute{t}faDDal$ 'Come in'



When the pitch range is extra wide and steep, the high rise signals high emotions, e.g. anger, frustration, great surprise.

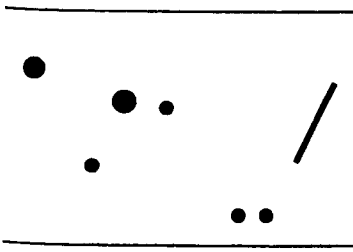
5. ʔinta majnuun 'Are you mad?'



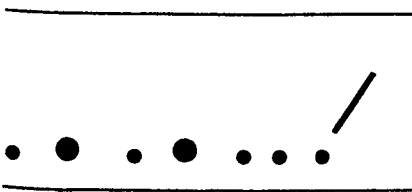
The steeper the gradient, the sharper and more emphatic the emotion. (cf. Ladd (1980:106) The pretonic segment of the high rise is either high or low. The high pretonic (cf. Halliday 1970:17) starts high and steps down; the low pretonic is low-pitched and shows little or no pitch obstruction.

These two patterns are illustrated by examples 6 and 7 respectively:

6. 'laazim txabbir ilboliis 'Must you tell the police?'



7. 'laazim 'txabbir ilboliis



Bolinger (op cit: 152) mentions three possibilities pertinent to his B Profile exemplified by the string 'Is that the best you can do?' viz.:

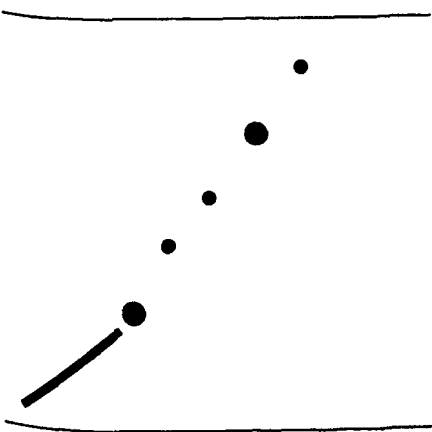
'Is that the best you can do?

that the best you can do?
 'Is
 that
 'Is the
 best
 you
 can
 do?

"The end of the profile, from accented that on," he says "is respectively rising, level and falling but with no abrupt change such as might signal an additional accent..."

In spoken Arabic, only the pattern with the rising tonic (including tail) is possible on such a yes-no question. Level tails and falling tails following a rising nucleus in yes-no questions are alien to Arabic. The tail continues the movement of the rising nucleus to the end of the question. Consider a situation involving a shopkeeper and a customer. The customer tells the shopkeeper to show him the best he has of a certain commodity. The shopkeeper tries to oblige but the customer, dissatisfied, remarks

/ haad ahsan maa 9indak?



With such a polysyllabic tail and an initial rising nucleus, the high rise is not completed on the tonic syllable, but it embraces the tonic along with the ensuing tail.

In this section, the rising tone was subdivided into low and high. The question is whether there is a neutral rising tone in spoken Arabic. The low rise and the high rise taken to their extremes do not qualify as a neutral rising tone. Assuming, of course, that native speakers of spoken Arabic recognise a neutral rising tone, which they do, the issue can be resolved in one of two ways:

Either a moderate form of the high rise is considered as neutral or a third sub-category, e.g. mid-high is added such that the domain of the latter is the middle two quarters of the speaker's normal range, viz:

e.g. *naajih* 'successful'



Perhaps it is more sensible to go along with the former solution -i.e. a moderate high rise is to be regarded as a neutral rise. This is more economical than recognizing a third subdivision of the rising tone¹.


III. The Fall Rise

The previously discussed simple tones (i.e. the falling tones and the rising tones) are the commonest in spoken Arabic. The so-called complex tones, the fall-rise and the rise-fall, are far less frequent, but they seem to be becoming more and more widespread in educated spoken

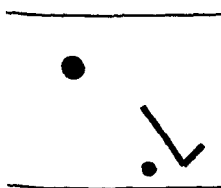
¹ Perhaps the high fall in the previous section can be considered a neutral falling tone if it is a moderate one, roughly occupying the middle two quarters of the voice range, e.g.

ruuh 'Go'

Arabic, plays and soap opera included.

Phonetically, the fall-rise consists of two parts –one falling, the other rising. The falling part typically extends over a greater range than the rising part: the picture looks like this . As Halliday (1970:11) says 'The maximum force, or intensity comes on the fall'. Normally, the falling segment commences about mid-high and finishes about mid-low. But there are variations which will be discussed below. Here is an example:

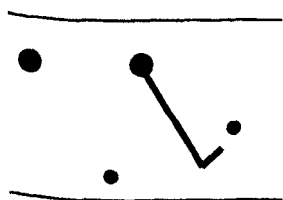
1. ¹šaabb waš¹iim 'A handsome young man'



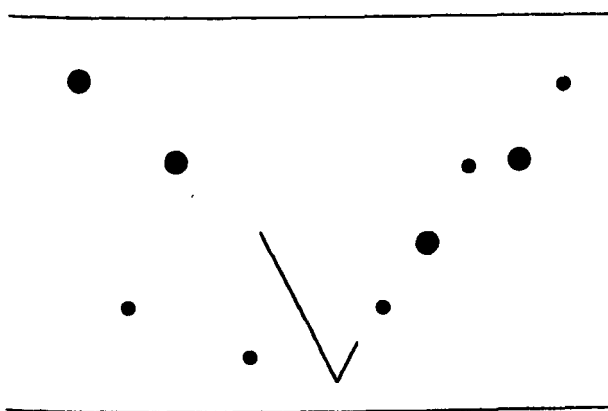
The tonic in this example is associated with just one syllable; there is no tail. In utterances involving a tonic with a tail, the falling part of the fall-rise starts on the tonic syllable and the lowest pitch is reached on (or by) the syllable immediately following. (cf. Halliday: *ibid.*).

Examples:

2. ¹ʔihna f¹Tarna 'We have had breakfast'



3. ¹maa ʔahnabtu ʔaaxir 'marra ¹šuftuh 'I did not rebuke him the last time I saw him'
- ¹maa ʔannabtu ʔaaxir 'marra šuftuh



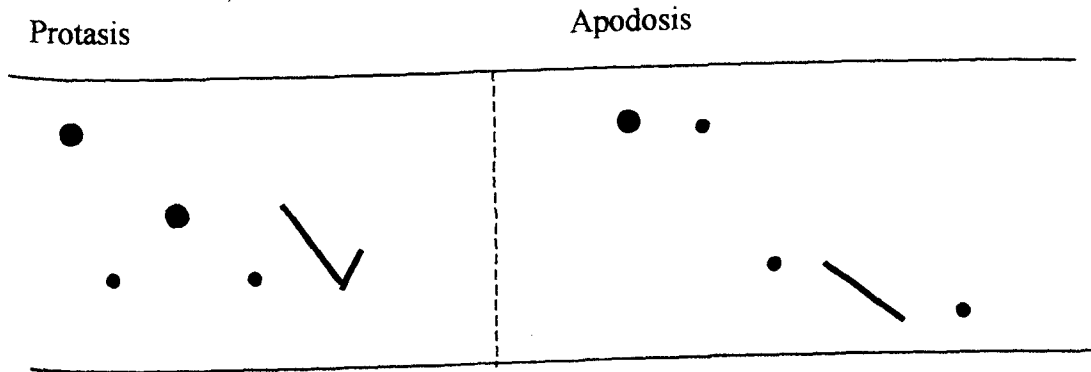
It was said above that the tonic of the fall-rise normally has a narrow range: about mid-high to about mid-low. But the tonic may also be high with a steep range or low with a narrow range. Insofar as meaning is concerned, the fall-rise in statements expresses feelings of reservation or contrast. Thus, example 1 above implies a sense of reservation as though the utterance is incomplete and a *laakin* 'but...' is ellipted: 'šaabb wašiim (laakin...).

Example 4 suggests a contrast:

4. ʔaʕjabni [∨] 'He impressed me? with an implication like (even if he didn't impress you).

Evidently, the fall-rise shares with the rising tone the general meaning of incompleteness or uncertainty mentioned in section II. This being so, the fall-rise is suitable for sentences involving subordinate elements of structure, e.g. adverb clauses. El-Hassan (1990) has an interesting conditional example:

'ʔda 'ʒindku juuʒ, ʒindhum majaaʒah 'If you have hunger, they have starvation.'

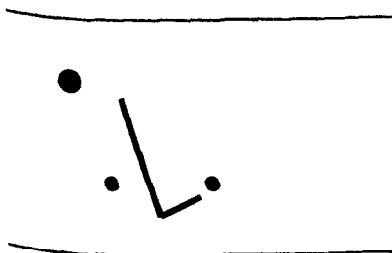


The pretonic segment of the fall-rise is tied up with the tonic. If the tonic is high, the pretonic starts high and steps down; if the tonic is low, the pretonic is also low with little pitch obtrusion.

Compare examples 5 and 6:

5. (High tonic, high pretonic)

'ʔihna fTarna 'we have had breakfast'



6. (Low tonic, low pretonic)

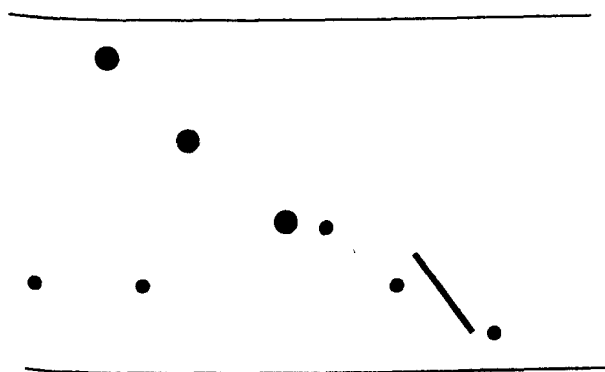
'ʔihna fTarna



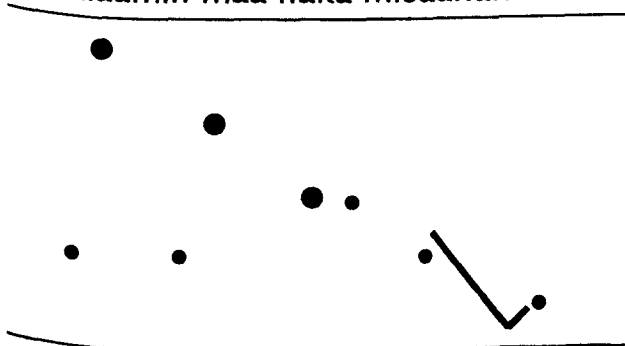
The difference in meaning has to do with the degree of involvement and interest: example 5 shows a higher degree of involvement and interest than example 6. One of the interesting characteristics of the fall-rise in English and spoken Arabic is that it has significant relevance to the delineation of the domain of negation, and consequently, to the disambiguation of sentences like the following: (cf. Bing (1980), Ladd (1977), Halliday 1967, 1970, Palmer 1922 etc.):

7. salaamih maa ḥaka mišaanak 'Salaamih didn't speak out for your sake.'

(a) salaamih maa ḥaka mišaanak



(b) salaamih maa ḥaka misaanak



Note that the pretonic pattern of accentuation in (a) and (b) shows a very similar step-down movement (or declination). The difference between (a) and (b) phonetically has to do with the

tonic only. The falling tonic in (a) expresses the following meaning: (salaamih did not speak out, and that was for your sake). No speaking out took place, the negation is applicable to the verb *ħaka* immediately following the negative particle *maa*. On the other hand, the falling-rising tonic in (b) shifts the domain of negation from the verb to the phrase *mišaanak*. So the meaning is:

salaamih spoke out but it wasn't for your sake that he did, he spoke out for some other reason.

The fall-rise as a nuclear tone has phonetic affinities with the compound fall + rise. The latter comprises two nuclear tones associated with two separate tone groups which often are transposable (cf. Mitchell and El-Hassan 1989 : 58).

For English Halliday (1970 : 43) recognises two compound tone groups, i.e. tone groups with double tonic, namely 13 (one-three) and 53 (five-three) in his system of tones. He says:

"Tone groups with double tone, tones 13 and 53, have the same general pattern of information as other tone groups, with the tonic marking new information. The difference is merely that there are two places where the speaker has decided to focus the information in the information unit, instead of one".

According to Halliday, the two tonics have unequal value in this pattern, i.e. one-three : the first tonic (with tone 1) is the major one, whereas the second tonic (with tone 3) is the minor one. Semantically, it is the major tonic which carries the main, new information; the minor tonic carries old or secondary information. He gives examples to illustrate those features, for instance:

//Jane goes/ shopping in/ town/ every/ Friday

Where the last item in the tone group is an adjunct as the minor tonic, and the preceding tonic, the major one.

In Arabic, as in English, this compound (double) tonic occurs in utterances with adverbial extensions, e.g.

ˈ jaay bakkiir ilyoom ‘You are early today’

ˈ basaafir ʔusbuu9iyyan ‘ I travel weekly’

IV. The Rise-Fall

This is the last tone to be discussed in the present study. The rise-fall consists of two parts: a rise followed by a fall either on one and the same syllable, e.g.

ˈ laa ‘No’,

or two or more syllables, e.g..

ˈ XalliS ‘Hurry/ Finish’

This nuclear tone has the following phonetic characteristics (cf Halliday: *ibid.*):

1. There is a greater force on the rising part than on the falling one.
2. The falling part tends to cover a wider range than the rise.
3. If the tonic has more than one syllable the highest point is often reached by the immediate post-nuclear syllable, and subsequent syllables fall to a low pitch and remain fairly level to the end of the utterance.

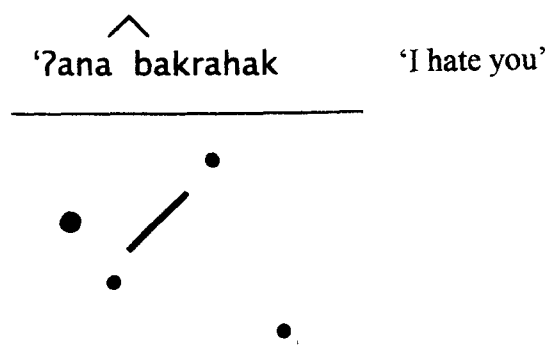
The rise-fall may be:

- a) high
- b) neutral
- c) low

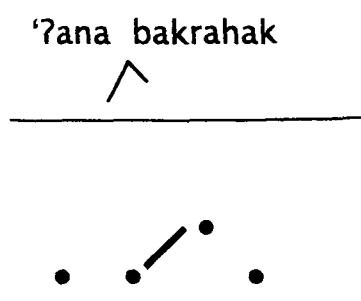
The high tonic starts just a little higher than mid and rises to a high pitch before falling to a low pitch. The neutral type starts about mid, rises to about high and falls to a low level. The low type starts below mid and rises to about mid, i.e. it has a narrow range.

The pretonic segment, like that of the previously discussed fall-rise is determined by the tonic: high and stepping down with the high tonic and the neutral one: low and exhibiting little pitch obtrusion in the company of a low tonic. Examples:

1. High pretonic + High tonic



2. Low pretonic + low tonic



In general, the rise-fall shares with the falling tones the sense of completeness and certainty. But there are more particular meanings in particular contexts. For instance, when calling the attention of the interlocutor, the rise-fall is usually friendlier than the plain rise and the plain fall, e.g.:

3. ^haazim

Equally the same call might express reproach and insistence.

The rise-fall can express a challenge, as in 4

4. \wedge 9umrak maa bit'Siir Tabiib naajih

'You'll never be a successful physician'

\wedge 9umrak maa bit'Siir Tabiib naajih



Note that after the falling part of the rise-fall, the tail remains low on a monotone.

Mitchell (1993: 221) mentions this tone and says that it is "very rare in Arabic outside the Magrib". In fact, the rise-fall occurs fairly frequently in spoken Arabic, mainly in brief rejoinders, e.g.

5. A. saami fissijin 'Sami is in prison'

B. \wedge 9aarif 'I know'

6. A. saami fissijin

B. \wedge 7ajwah 'Yes: it is scandalous'

4.2 Conclusion

This chapter has dealt with the structure of intonation in the variety of Arabic under consideration. The analysis corresponds very well to those that have been used in the standard works on English intonation. The intonation of Arabic utterances was analysed as sequences of tone groups each having the following components:

(Pre-head) (Head) Nucleus (Tail)

Four major tone types have been recognized:

1. The Fall: a) the low fall
b) the high fall
2. The Rise: a) the low rise
b) the high rise
3. The fall-rise
4. The rise-fall

The tonetic structure of each tone was examined and that included the tonic, the tail, the pre-head and the head. Brief references were made to the meaning and function of each nuclear tone. Wherever necessary, comparison and contrast with English was made. The tone types and their categories are summarised in the diagram below:

| LEVEL 1 | LEVEL 2 | LEVEL 3 |
|------------|-----------|---------|
| Final fall | Fall | Low |
| | | High |
| | Rise fall | |
| Final rise | Rise | Low |
| | | High |
| | Fall-rise | |

Chapter 4

Grammatico-attitudinal Functions of Intonation

Perhaps the grammatico-attitudinal function is the most controversial aspect of intonational studies in English. Some scholars argue that intonation plays a significant role in signalling grammatical categories (e.g. Armstrong and Ward: 1926, Kingdon: 1958, Halliday: 1967, Moulton: 1962, Stockwell: 1960, Stockwell and Bowen: 1965); others are sceptical about assigning such a role to intonation (e.g. Cruttenden: 1970, and 1986, Crystal: 1969 (a) and (c) and 1975, Bolinger: 1986 and 1989).

Among the proponents of the grammatical function of intonation, the most elaborate statement has been made by Halliday whose definition of grammar is such that it includes all meaningful distinctions comprising parts of closed systems. Casting the grammatical net so wide allows Halliday to suggest that almost every function of intonation can be said to be grammatical in spoken English. He says:

“The systems expounded by intonation are just as much grammatical as are those, such as tense, number and mood, expounded by other means... There is no difference in the way they work in the grammar between systems with direct phonological exponent, such as those carried by intonation, and those expounded indirectly through a long chain of grammatical abstraction. Halliday”(op.cit.: 10)

But not everybody agrees with Halliday's concept of grammar. It is true that Transformational-generative grammarians have also adopted an inclusive approach to grammar ascribing to it a syntactic component, a semantic component and a phonological component; but transformationalists have not said much about intonation generally, let alone its role in determining grammatical categories.

In short, the majority of works on English intonation take a different point of departure from that of Halliday's. Crystal (1969c) has reviewed Halliday's work on the grammatical function of intonation. He says:

Here one has to be very rigorous over what is to count as a grammatical function of intonation. If the criteria are not exact and explicit, the grammar quickly becomes overloaded with spurious categories and artificial distinctions (for example, degrees of "exclamatory force" or "personal commitment". This is the difficulty that I find with Halliday's approach to intonation.

Crystal would only consider as grammatical such uses of intonation that can be explicitly proved "to expound categories already required by a grammar". By this, he means that for intonation to be claimed to have such a grammatical role, it should be shown to be able to expound a grammatically recognised categories like sentence, clause, negation, subordination, completion. Crystal underlines the claim (also made by others) that the grammatical and the attitudinal functions of intonation are so fused that

"... any explanation of intonational meaning cannot be arrived at by seeing the issues solely in either attitudinal or grammatical terms. It is precisely the interplay between the interpretation of an intonation pattern in grammatical terms and its interpretation in semantic (attitudinal) terms that is of interest, since there are grounds for believing that the two sets of "meaning" are to some extent mutually defining".

Crystal illustrates this by saying that a low-rise in English may be interpreted syntactically as a signal of 'continuity' and in attitudinal terms as a signal of 'inconclusiveness'. Similarly a fall-rise is interpretable syntactically with reference to a category of 'contingent negation' and attitudinally with reference to labels like 'uncertainty', 'doubt', etc.

Crystal (1969a) has a chapter on 'the grammar of intonation' and another on 'the semantics of intonation'. In the former, he admits that it is impossible in the above-mentioned work to study the entire range of grammatico-intonational co-occurrences. The task is formidable. So he limits his study to a selected inventory of aspects of overlap between grammar and intonation namely: the structure of tone units (including tone-unit length, structure length, tone-unit boundaries), tonicity (including form clauses, compound tones, tonal subordination), nuclear tone type (including grammatical placement of nuclear types, the intonation of sentences). Crystal (op.cit.: 254) says that

“The suggestion that there is a purely grammatical function of intonation, as opposed to an attitudinal one, is theoretically unsound... I take the view that grammatical considerations are relevant for the study of intonation in so far as it can be shown that a given grammatical structure has a regular correlation with a given intonational pattern, and that a change in intonation causes one to re-label (re-interpret) the syntactic structure of an utterance, no other morphological change being necessary.”

Crystal (op cit:272) regards the division of tonal contrast into (i) grammatical and (ii) attitudinal to be artificial, for “it seems impossible to pronounce any utterance in such a way that it will be interpreted as carrying no attitude whatever”. Instead of this dichotomy, Crystal (ibid) proposes ‘a scale of contrastivity’ ranging from most grammatical to least grammatical tonal contrast. “At the grammatical end of this continuum would be placed the relatively ‘closed’ systems of discrete tone contrasts not primarily of attitudinal significance; at the other end, the relatively “open” sets of tone contrasts whose primary function is to make attitudinal contrasts of different degrees of subtlety”. This means that tonal types with specific grammatical structures irrespective of whatever attitude may accompany the utterance, e.g. the distinction between tag-questions which require agreement or seek information.

A similar position is taken by Cruttenden (1970). The later discusses the relevance of (i) tone-group boundary, (ii) choice of tune and (iii) the placements of the main accent to the characterisation of grammatical categories (cf. Halliday's systems). He concludes that intonation alone has only a marginal role in determining grammatical relations.

With respect to tone-group boundary, Cruttenden deals with the disambiguation function of intonation groups in strings of words like Halliday's: He washed and brushed his hair, and Lieberman's I fed her dog biscuits, and Wode's Those who took the chances at once made a great fortune, and says that "... disambiguation by the use of groupings is relatively of infrequent occurrence in the language, because such formally identical sentences are rare and in any case are disambiguated by the context... the function of the intonation group is to stress the internal coherence of the items within it... disambiguation is a derivative effect which this function may have within grammar".

As for the placement of the main accent, Cruttenden considers its main function within the intonation -group as to make the relevant word/ morph stand out to the ear and that has no grammatical import. Such examples cited in Lee (1956) as: green house vs greenhouse may indirectly determine word-classes, assuming one can consider examples out of context.

Nor does Cruttenden seem to be willing to assign a grammatical function to the choice of tune. What is referred to by other scholars (e.g. Halliday) as the 'normal' or 'unmarked' tunes-for instance, statements and wh-questions are claimed to be said on a fall, yes-no questions on a rise-are all too often modified by affective implications. Cruttenden finds it difficult to separate the affective from the grammatical. He suggests a statement of 'greater generality regarding the meaning of tunes would be

produced by saying ...that tunes carry an independent meaning of their own, regardless of sentence type. Falling tunes seem to carry always an element of definiteness, rising tunes an element of tentativeness'. Correlations that are found between a particular tune and a certain sentence-type can be explained in terms of what Cruttenden calls 'harmony between the meaning of a tune, and the meaning of a syntactic pattern'. Thus the fall of statements can be explained in terms of the harmony of 'definiteness' of the fall and the 'non-question' of a statement. The meanings conveyed by the grammar and those signalled by intonation overlap.

On the other side of the Atlantic, Bolinger (1986: 25-34) raises similar issues concerning the relationship between grammar and intonation. Of course, Bolinger (op.cit.: 25) recognises the fact that intonation "helps in distinguishing between questions and statements. This is especially true when the intonation is the only clue to the difference". He illustrates this with the reply one gives to: 'when would you like to go? The choice is between a fall and a rise on the important word in the reply viz:

Tomorrow vs. Tomorrow.

Bolinger (op.cit.: 26) accepts another fact about terminal intonation. He says "terminal intonations also keep in marking the internal organisation of a sentence, serving, for example, as one kind of link, between the more or less independent, parts...". He cites several examples, one of which is the following:

If you don't stop. As soon as I signal, you will receive a shock. And

If you don't stop as soon as I signal, you will receive a shock.

But notwithstanding this position, Bolinger (op.cit.: 27) says that “though intonation is indispensable to grammar, the grammatical functions of intonation are secondary to the emotional ones; speakers feel differently about what they say, and the feelings manifest themselves in pitch changes that serve as clues”. Bolinger echoing Crystal and Cruttenden above believes that “the affective, attitudinal, emotive side of intonation is inextricably intertwined with the grammatical”.

In his more recent book, Bolinger (1989) thinks that intonation and grammar are interdependent pragmatically, but not linguistically. He says (op.cit.: 67): “Neither can be used to define the other in any strict sense, but both co-operate in giving communicators a fix on their meanings”. Bolinger repeatedly underscores the looseness of the tie between intonation and grammar. The looseness of the tie becomes most evident when we try to express rules of correspondence that are truly based on grammatical principles”. (op.cit.: 79)

Now what evidence can be adduced from Arabic in support or contravention of the above positions? It is convenient to start with tonal type, or what Cruttenden has called ‘the choice of tune’, since this aspect of intonation seems by far to be ‘the main contribution to the claim that intonation has a grammatical function.

Consider utterances which syntactically are declarative statements, i.e. have an SV structure. Examples:

- (i) bintu XaTfat ‘his daughter eloped’
- (ii) salma ntaħrat ‘Salma committed suicide’

Grammatically (i) and (ii) are declarative statements, and as such, when spoken, they are usually characterised by a falling intonation. For this type of grammatical structure then falling intonation simply reinforces an already defined syntactic structure. The role of falling intonation in characterising these utterances as declarative statements is evidently marginal. To say this is not to deny the significance of intonation; for it is intonation which makes it possible for the two syntactic strings to have the effect of conclusiveness. But the fact remains that in such contexts intonation does not define the grammatical category in question. Now consider the same syntactic strings in association with a rising tune (high or low) as shown in (iii) and (iv):

(iii) lbintu xaTfat 'his daughter eloped?'

(iv) salma ntaħrat 'Salma committed suicide?'

The latter utterances are not only considered as questions but also convey an awesome feeling of surprise, (Incidentally, both elopement and suicide are disgraceful acts in the Arab world). These meanings (the grammatical and the affective) are achieved with the aid of the rising tune despite the SV structure of the strings. In other words, intonation here serves as the single clue for recognising them as questions, all be it with an accompanying disposition of surprise.

It may be suggested that this is a statement expressing surprise by virtue of the rising tone. Such a suggestion would be unmotivated: it would make this the only case in the Arabic under consideration where a rise is associated with a statement.

A statement by definition, is complete and conclusive, but the rising tone is not compatible with this type of sense elsewhere in the language.

Such utterances are best treated as yes-no questions with an element of surprise: the question and the surprise are tied up together here.

Having said that one must point out that statements can express surprise on a falling tone as in:

?u¹ maat faj?a ‘And he died suddenly’

?ilbank insaraq (birragm min wujuud ilħaras)

‘The bank was robbed’ (in spite of the presence of the security guards)

Exclamations, which are also said on a falling tone, are also a case in point (cf. exclamations).

If the strings at (iii) and (iv) uttered on a rise do convey attitudinal surprise in addition to being ear-marked as questions, it is because the choice of the lexical items xaTfat ‘she eloped’ and ntaħrat ‘she committed suicide’ that the attitudinal impact is so strong. One can, however select words that minimise the affective impact, thereby restricting the intonational role to the grammatical function, as shown in (v):

(v) ?ilmaa? Daruuri lilħayaah ‘water is essential for life’.

Syntactically, this is in the form of a declarative statement but if it is uttered on a rising tune, it becomes a genuine question (e.g. for a five-year old) relatively free from attitudinal overtones.

Here, then, is evidence that rising intonation plays a grammatical role in Arabic. This role becomes even more salient when one knows that spoken Arabic, at least in the region concerned, does not permit a yes-no question, be it genuine or tag-like, on a falling tune. Thus, whereas in English such questions may be uttered on either a fall or a rise, their Arabic counterparts are categorically uttered on a rise. In English, for instance, both the forms at (a) and (b) in (vi) and (vii) below are admissible:

- (vi) (a) Are you coming?
 (b) Are you coming?
- (vii) (a) (You're coming), aren't you?
 (b) (You're coming), aren't you?

Of course the change of tune is meaningful, but that is another matter. The Arabic counterparts of (vi) and (vii) admit of no such tonal polarity—only the rising tune is attested, viz:

- ?inta jaay? 'Are you coming?'
 - (?inta jaay), muš heek? (You're coming), aren't you?

Having said that, it must be pointed out that under certain circumstances, Arabic may seem to admit of a falling intonation in a context of seeking an answer to a yes-no question. The circumstance in question can be illustrated by the following example:

- (viii) ?u Saddagtuh
 'And you believed him'

This utterance calls for a reply of the yes-no types, and therefore it may be misconceived as a yes-no question said on a falling tune. The truth of the matter is that the utterance at (viii) comprises the statement that precedes the question-tag, which in such a context is deleted, i.e. the utterance at (viii) is a short form for the one at (ix)

ʔu Səddəgtuh, muš heek ?

And you believed him, isn't that so?

That such utterances are construed as statements preceding ellipted questions-tags and not in themselves questions is also clear on two grounds:

- a) They can be extended by further remarks which definitely make them complete and conclusive statements:

ʔu Səddaqtu, yaa ɡabi 'And you believed him, oh fool'

- b) If they are said on rising tone, as has been illustrated in this thesis, they do become yes-no questions

1. ʔu Səddaqtu, (yaa ɡabi) 'And you believed him, oh fool!'

2. ʔu Səddaqtu, (yaa ɡabi) 'And you believed him, oh fool!'

This discussion hopefully supports the argument that examples like ʔu Səddaqtu 'And you believed him' with a falling tone can be considered statements preceding an ellipted yes-no question-tag depending on the context; in other contexts, they are just statements of facts with no ellipted question-tag:

(šfigit ʔaleeh) ʔu Səddaqtu (I felt sorry for him) and believed him

Example ix:

(x) ʔu heek bikuun ʔaɣnaʔak, muu heek?

And so, he convinced you, (lit) isn't that so?

To turn to the intonation in Arabic of *wh*-questions, this type of question is usually pronounced on a falling tune, viz:

- (xi) (a) $\begin{array}{c} \backslash \quad | \\ \text{ween raayih?} \end{array}$ 'where are you going?'
 (b) $\begin{array}{c} \backslash \quad | \\ \text{miin talfan?} \end{array}$ 'who phoned?'
 (c) $\begin{array}{c} \backslash \quad | \\ \text{mata msaafir?} \end{array}$ 'when are you leaving?'

In all these examples, the nucleus of the fall is on the *wh*-word.

Of course, these are marked as questions by their syntactic structure—the presence of the question-word is the exponent of their interrogative structure. Therefore they do not need a rising tune to make them questions; hence, intonation here plays no independent grammatical role.

But that is not the whole truth about *wh*-questions. In fact, quite often such questions are said on a rising tune, viz:

- (xii) (a) $\begin{array}{c} | \\ \text{ween raayih?} \\ / \end{array}$ 'Where are you going?'
 (b) $\begin{array}{c} | \\ \text{miin talfan?} \\ / \end{array}$ 'Who rang?'
 (c) $\begin{array}{c} | \\ \text{mata msaafir?} \\ / \end{array}$ 'When are you leaving?'

The latter set of wh-questions is different in meaning from the corresponding set of (xi). Whereas those at (xi) are unmarked intonation questions, the ones at (xii) are definitely marked as either demanding genuine clarification of the referent/denotation of the question word because it wasn't heard clearly when first mentioned, or expressing such affective feelings of surprise, disbelief, disapproval and the like. But rising intonation here cannot be assigned any grammatical function. Rather, the rise in such contexts is an invitation to supply misapprehended information and an opportunity to demonstrate feelings of disapproval, surprise, disbelief, etc, with regard to a foregoing utterance by the interlocutor.

In so far as questions are concerned, then, spoken Arabic pairs these grammatical structures in a regular manner with given intonational patterns (cf, the 100% correlation between yes-no questions and rising intonation. Violation of this partnership results in ungrammaticality and/or unacceptability). Attitudinal impact is there to a greater or lesser degree depending, among other things, on lexical choice, pitch height, and often situational and personal factors.

It is worth pointing out that the regular correlation in spoken Arabic between yes-no questions and the rising tune contravenes Bolinger's (1989: 98) claim that 'no intonation is an infallible clue to any sentence type: any intonation that can occur with a statement, a command, or an exclamation can also occur with a question'¹. Bolinger (1989) seems to be adamant an unwilling to part with this claim which is reiterated in different forms and styles throughout the book. 'Where connections have been

¹ Bolinger says this is not just in reference to English, but often world languages (spelled out in a footnote on P. 424) which include Norwegian, Finnish, Estonian, and French.

established they have generally turned out to be approximations rather than rules, e.g. the notorious “questions go up at the end”.

Statements, Commands and Exclamations

It was shown above that intonation plays a vital role in signalling questions in spoken Arabic. But elsewhere, e.g. with statements, commands, and exclamations, which are regarded as such by the grammar of the language, intonation simply co-operates with the grammar to give these grammatically established categories the realisation of the utterance, or at least aspects of it. The role of intonation here is ‘pragmatic’, to borrow a term from Bolinger (1989: 74). By ‘pragmatic’ one means that intonation signals overtones and speaker’s intentions which go beyond the referential meaning of the sentence. Thus, for instance, *fii ħarr kØiir hoon* ‘it’s too hot in here’ may prompt an interlocutor to turn on the air-conditioning or the fan, for that is the speaker’s intended meaning.

The above three categories, statements, commands and exclamations, are gathered together here because they share a common tonal feature, namely the fall in their typical unmarked form of utterance. Here are some examples:

1. $\overset{|}{?}innataa?ij \backslash ?u\theta linat$ (statement), ‘The results have been announced’
2. $\acute{h}uTTu \backslash hnaak$ (command), ‘Put it there’
3. (a) $yaa la\overset{|}{T}iif \acute{s}uu \backslash hilu$, ‘How beautiful it is!’
 (b) $yaa \overset{|}{?}allah maa \overset{|}{?}ajmal \backslash ha\acute{x}aatim$ (exclamation), ‘Oh God, what a beautiful ring!’

As these examples show, falling intonation is the typical and unmarked characteristic of statements, commands, and exclamations. However, these grammatical categories permit the fall-rise, for instance, to convey some other attitudinal meaning viz:

4. ʔinnataaʔij ʔuθlinat

5. ʔhuTTu hʔaak

6. yaa ʔallah maa ʔajmal halxaatim

The latter set of examples imply continuity in the sense of ‘but...’. Example 4 says that the results have been announced, and implies, e.g. ‘but your name isn’t there’; example 5 implies, e.g. ‘but be careful’; and example 6 implies, e.g. ‘but, alas, we can’t afford it’. Such variation in tonal type is very common in Arabic -as in English and other languages- but perhaps it is reasonable to maintain the distinction between the unmarked features and the marked ones.

Just one more remark about exclamations. Obviously, exclamations are used in language to express some deep affective feelings. Bolinger (1989: 248) cites Quirk et al (1972: 286) as saying that “exclamations are primarily for expressing the speaker’s own feelings”. To this Bolinger (ibid.) adds: “it follows, if intonation is basically affective, that the connections between intonation and exclamations must be both broad and deep”. Once again, there is need for further research into this extremely interesting area in spoken Arabic.

Co-ordination and Subordination

Co-ordination and subordination here are not used in respect of any dependency between sequences of tone groups, which Fox (1984a:123) proposes to study intonation structure. The subordinating sequence involves 'a dependent and an independent tone group' while a co-ordinating sequence comprises only independent tone groups. As Fox (ibid.) puts it "Dependency is in essence a co-occurrence relationship: a tone group is subordinated to another if its occurrence depends on the occurrence of that tone group, such that it cannot occur alone".

Thus in

When I get [/]back / I'll give you a [\]ring,

the first tone group is subordinated to the second. Fox (ibid) is careful to distinguish this kind of subordination from the usual grammatical subordination of clauses, and says:

"That this relationship is not a grammatical one, despite the fact that it parallels the grammatical dependency in this example, is shown by reversing the order of the clauses:

I'll give you a [/]ring/ when I get [\]back"

An example of two independent tone groups in a co-ordinating relationship, Fox gives the following:

I'll give you a [\]ring/ when I get [\]back

“Despite the grammatical subordination of the second clause”, Fox says (op.cit.: 123) “there is no intonational priority here; the two tone-groups appear as equivalent entities.”

This is an interesting approach to the study of intonation and it is well worth pursuing. But let us return to the role of intonation in grammatical co-ordination and subordination.

The connection between tonal type and grammar is exhibited in co-ordinate and subordinate constructions in spoken Arabic.

Co-ordination may be at the level of the sentence, the clause, the phrase, or the word.

Consider the following examples:

1. $\begin{array}{cccc} | & \backslash & & | \\ \text{samiir} & \text{saafar} & ?u & ?arsalnaalu & fluus \end{array}$ ‘Sameer left and we sent him money’
2. $\begin{array}{cc} | & \backslash \\ \text{miin} & \text{mwaafiq} & ?u & \text{miin} & \text{m\text{th}aariD} \end{array}$, ‘who agrees and who disagrees’
3. $\begin{array}{cccc} | & \backslash & | & \backslash \\ \text{samiir} & \text{waSal} & \text{laakin} & \text{maa} & \text{?arsal} & \text{barqiyyi} \end{array}$, ‘Sameer left but did not send a telegram’.
4. $\begin{array}{cc} | & | \\ \text{na\text{D}Daft} & \text{ilbeet} & \text{min} & \text{id\text{d}aaxil} & \text{u} & \text{min} & \text{il\text{x}aarij} \end{array}$, ‘have you cleaned the house from the inside and outside?’
5. $\begin{array}{ccc} \backslash & \backslash & \backslash \\ \text{?akalna} & \text{?inab} & \text{u} & \text{tuffaa\text{h}} & \text{u} & \text{baTTiix} \end{array}$, ‘we ate grapes, apples; and water-melon’.

These examples illustrate a variety of co-ordinated grammatical units along with the associated tonal patterns. Example (1) co-ordinates two independent sentences with the conjunction *ʔu* ‘and’:

$\begin{array}{c} | \quad \backslash \qquad \qquad \qquad | \quad \backslash \\ \text{Samiir saafar } /ʔu/ \text{ ʔarsalnaalu fluus} \end{array}$

Each of these sentences is said on a falling intonation because these are intended to be declarative statements.

Example (2) presents two independent sentences, to be more specific two wh-questions, joined by the conjunction *ʔu* ‘and’. Typically, wh-questions in spoken Arabic are characterised by an unmarked falling tune.

In example (3), a sentence with Sameer as subject has two VP-predicates joined by the disjunctive ‘*laakin*’ ‘but’. The two NP’s carry falling tunes as they express a sense of completion or finality.

In example (4), the two units joined by the conjunction *ʔu* are adverb phrases of place and they both are said on a rise because they form parts of a yes-no question.

Finally, example (5) presents a sentence with a transitive verb, *ʔakalna* ‘we ate’ and its object *ʕinab* ‘grapes’ along with the conjunction *ʔu* followed by two other nouns.

The noun *ʕinab* and the co-ordinate nouns *tuffaaḥ* ‘apples’ and *baTTiix* ‘melons’

carry falling tunes echoing one another. The same example may be said on a different intonational pattern, namely that of the so-called list- viz:

ʔakalna ʕinab, ʔu tuffaaḥ ʔu baTTiix.

Where the first two items in the list are said on a rise and the last one on a fall. It seems that the former form of example 5 is more assertive to the extent of being boastful or challenging by virtue of the echoing falls, whereas the latter form is the unmarked one for such listing of items.

In complex sentences involving the feature of grammatical subordination, the role of intonation is interesting and illuminating. Consider the following types of complex sentences.

1. Conditional clauses:

Conditional clauses in Arabic (and in English) are the most interesting type of subordinate clauses. They have ties with questions-‘both pose a hypothesis rather than a fact’ Bolinger (1989: 127) likewise, there are connections between conditionals and imperatives (e.g. xaalif ittaʕliimaat ʔu bitšuuḥ ‘violate the instructions and you will see’.

With conditionals intonation is often the principal clue to their grammatical function as conditional. Consider the following examples:

1. Xaalif itta¹ḡliimaat ʔu bit¹šuuf, ‘violate the instructions and you will see’
2. ʔi¹ḡa šuftu sallim¹li ḡaleeh, ‘when/if you see him give him my regards’.

Conditional utterances typically consist of a conditional clause and a main clause as shown in example 2. The conditional clause in this is introduced by the conditional word /ʔiḡa/ ‘if’. Intonationally, a conditional utterance comprises two tone groups: one associated with the conditional clause, the other with the main clause. In example 2, the conditional clause

ʔiḡa šuftu, ‘when/if you see him’

is a tone group with a rising nucleus, and the main clause Sallimli ḡaleeh ‘give him my regards’ is another tone group with a falling nucleus.

Example 1 has no grammatically explicit conditional marker (cf. ʔiḡa ‘if’ in example 2). The command ‘xaalif itta¹ḡliimaat’ ‘violate the instructions’ comprises the conditional clause which is coextensive with the first tone group in the utterance. ʔu bit¹šuuf ‘and you will see’ is the other clause which is coextensive with the second tone group. Once more, and as in example 2, the conditional clause is said on a rise, and the other clause on the fall.

In both of these examples, the conditional clause precedes the main clause. This order can be reversed in example 2, but not in example 1.

3. *ʔu bitšuuf xaalif ittaʕliimàatt

4. Sallimli ʕaleeh ʔiɗa šuftu

‘give him my regards whe you see him’

3 is ungrammatical, but is worthy of notice in 4 is the fact that with this order (i.e. main clause preceding conditional clause) there is a change in tonal sequence: whereas in example 2, the conditional clause has a rising tune, and the main clause a falling tune, the two clauses in example 4 have a sequence of falling tunes. The main clause in 4 is an imperative sentence, namely, Sallimli ʕaleeh ‘give him my regards’ and therefore it has to be pronounced on a fall whether it precedes or follows the conditional clause.

But as El-Hassan (1990: 19) says: “...this pattern of accentuation is by no means invariable in the case of utterances involving conditional clauses”, El-Hassan cites several examples to this effect. One of his examples is shown below:

“ʔiɗa xaTabha Imuhandis nabiil, bitwaafig, ‘if Engineer Nabeel asks (‘lit asked) her hand, she will agree’”.

Here the conditional clause (in El-Hassan’s terms ‘the protasis’) precedes the main clause (‘the apodosis’, as he says). The intonational structure of the utterance consists of two tone-groups- the protasis on a rise, and the apodosis on a fall. This intonation

structure is the normal patterning In such conditional sentences. But El-Hassan reverses the previous order of protasis and apodosis to get the following pattern:

bitwaafig idā xaTabha nabii

‘She will agree if Nabeel asks (lit. asked) her hand’.

Here the two tone groups both carry a falling tune. Another possibility proposed by El-Hassan is:

‘bitwaafig idā xaTabha nabii’

where apodosis and protasis make only one tone group with a falling nucleus. This utterance is intended as a statement of fact. It suggests that the speaker can guarantee the approval of the woman in question. Hence, the regular falling intonation. Moreover, it implies that the protasis is old information, viz being part of the previous discussion.

But conditionals can pose questions too.

5. ?idā xaTabha nabii, bitwaafig?

6. bitwaafig idā xaTabha nabii

El-Hassan does not cite these variants for this example, but he provides several other examples as mentioned above.

Note that in examples 5 and 6, the tonal sequence consists of two rises; this is only to be expected in view of the fact that the utterances here are yes-no questions which, as stated above, can only occur on a rising tone in spoken Arabic.

With an explicit conditional marker (e.g. *ʔida*, *law...*) intonation lends support to the grammar on the one hand, and conveys certain attitudinal and pragmatic meanings, on the other hand. These two roles are integrated inseparably. Here is an attempted summary of the situation.

A. Statements: two tone groups.

1. (a) *ʔida* [|] *biʕna* *ibeet* [\] *binsaafir* ‘If/when we sell the house we will leave’

with a rise on the protasis and a fall on the apodosis, this makes the typical conditional intonational structure. This may be called the unmarked pattern of intonational structure in such an utterance. The rising tone in the first-tone group conveys a feeling of tentativeness and continuity, and the fall on the second tone group imparts a sense of finality.

- (b) *binsaafir* [\] *ida* [\] *biʕnaa* *ibeet/ibeet* ‘we will leave if we sell the house’

Here the apodosis precedes the protasis, but the tonal pattern is maintained as in (a), i.e. rise on the protasis, fall on the apodosis. But note that the rise/fall-rise at the end of the utterance (end-focus) casts doubt on the situation, that is to say, there is an implication of e.g. we don't expect to find a buyer.

(c) binsaafir iða biθnà lbeet

Two falls in a sequence suggesting an interpretation like: That is our final position; selling the house is more or less imminent.

B. Statements: One tone group

2. (a) ?iða biθna lbeet binsaafir

This gives more emphasis to the protasis and plays down the apodosis. Again, a deal seems to be in sight. Moreover the apodosis here gives no new information, it's part of the background.

(b) ?iða biθna lbeet binsaafir

This lays more emphasis on the apodosis, and indicates that a deal is about to be cut.

C. Questions: Two tone groups.

3. (a) ?iða biθtu lbeet bitsaafɾu 'If you sell the house will you leave?'

Two rises in a sequence; protasis first apodosis second. This is the typical yes-no in question intonational pattern in a conditional utterance. The two tone groups have equal weight in the utterance.

(b) ?iɖa biʒtu lbeet bitsaafru?

A falling tune on the protasis followed by a rising tune on the apodosis. There doesn't seem to be much of a difference between the pragmatic meaning of 3 (a) and 3 (b): both are conditional yes-no questions, but 3 (b) might indicate that the likelihood of selling the house is greater than in 3 (a). It is the falling tune in 3 (b) in contrast with the rising tune in 3 (a) which might justify this feeling.

(c) bitsaafru ?iɖa biʒtu lbeet

Reversal of apodosis and protasis position while maintaining a sequence of tonal rises seems to have the same meaning as 3 (a).

(d) ? bitsaafru ?iɖa biʒtu lbeet ?

This pattern is doubtful; its occurrence or otherwise requires verification.

D. **Statements: one tone group**

4. (a) ?iɖa biʒna lbeet binsaafir

(b) bitsaafru ʔiða biʔtu lbeet?

Enough for conditionals involving an explicit grammatical marker. Implicit conditionals (e.g. *xaalif ittaʔliimaat ʔu bitšuuf*) are not a well-defined category. It is therefore reasonable to limit the discussion here to utterances involving an imperative as the protasis (cf. *xaalif* ‘violate’ in the above example). As mentioned earlier, the intonational pattern associated with such conditionals is as follows:

xaalif ittaʔliimaat ʔu bitšuuf

with two falling tunes. This is not a productive type of conditionals in spoken Arabic:

(1) it is not reversible, (2) being an imperative protasis, it cannot be made a question.

In addition, the falling tones on both parts of the conditional tend to be the most common, but the protasis may carry a rise as in: *ʔiʔmalha wʔuuf*, ‘Do it and see’.

This is construed as a test of an idea or hypothesis, or experiment. More generally, the rise on the protasis conveys a sense of tentativeness.

xuđ iddawa btiʕfa, ‘take the medicine and you will recover’.

The variety of possibilities of conditional utterances lacking the grammatical signal for conditioning presented by Bolinger (1989: 172-182) are not replicated in spoken Arabic. Bolinger’s discussion of the role of intonation as the main cue for recognising them as conditional is very interesting, but in spite of that, Bolinger is not convinced of the grammatical role of intonation.

3. Other complex sentences

Here is a selection of other sentences presented (below) with a view to examining the grammatical role of intonation. In particular, the role of intonation in disambiguating sentences will be illustrated.

4. zoojtu Ili bitdarris Ɠarabi xallafat waladeen

‘His wife who teaches Arabic has given birth to two boys’.

Out of context, this sentence is ambiguous; it may be uttered in two ways vis:

(a) \swarrow zoojtu Ili bitdarris Ɠarabi | xallafat waladeen

‘His wife, who teaches Arabic, gave birth to two boys’

(b) zoojtu Ili bitdarris Ɠarabi | xallafat waladeen

‘His wife who teaches Arabic, gave birth to two boys’

The utterance at (a) has three tone groups of which the relative clause is one. The utterance means that she is the only wife; the relative clause is non-defining or non-restrictive. The utterance at (b) has only two tone groups and the relative clause coheres together with zoojtu as both are in the same tone group. The relative clause here is defining or restrictive, which means that the speaker is referring to this particular wife in contradistinction to the man’s other wives. Here is another example:

ʔiɗa maa btiʃha lamma baSaffir baSubb Ɠaleek mayya

This sentence is ambiguous, intonation can be used to disambiguate it viz:

(a) ?iða maa btiŞha lamma baSaffir, baSubb 9aleek mayya

‘unless you wake up as soon as I whistle, I’ll pour water on you’.

(b) ?iða maa btiŞha lamma baSaffir baSubb 9aleek mayya

‘unless you wake up, as soon as I whistle I’ll pour water on you.

The literature on English intonation abounds in such examples of ambiguous sentences. Equally, spoken Arabic is rich in them.

Generally speaking, the dependent clause in Arabic, conditional or otherwise, takes a rising tone which shows its inconclusiveness of the utterance, and the main clause takes the fall to show completeness. The variations discuss above express certain pragmatic meanings, a great deal of which depends on given and new information. The role of intonation supports the grammatical delineation of the category and is not the single index to that category.

2. Negation

Both Arabic and English make use of intonation to disambiguate sentences involving negation. (for work on English see Palmer: 1922, Halliday: 1967, O’Connor and Arnold: 1973, Bing:(1980), Ladd:(1977)). Consider examples 1 and 2:

1. ?ana ¹maa ¹gibt li?anni xifit ¹minnak

‘I didn’t absent myself because I was afraid of you.

2 ʔana ʔmaa ʔgibt liʔanni ʔxifit ʔminnak

The first of these two utterances says that the speaker did absent himself, but that was not because he was afraid of his addressee; rather, it was for some other reason that the absence occurred.

The second utterance, on the other hand, says that the speaker didn't dare absent himself because he was afraid of his addressee. In other words, the fall-rise in (1) associates the negation with the clause *liʔanni xifit minnak* 'because I was afraid of you'. But in the next utterance, the falling tune associates the negation with the verb *gibt* 'absented' to show that the absence did not take place.

It is true that intonation is being used here in respect of sentences out of context, but the role of intonation in determining which constituents cohere and which do not, must not be underestimated. Besides, there are circumstances when a sentence may have to be read without many contextual clues, e.g. an epitaph. Bolinger (1989: 68) provides an interesting example:

"A person coming upon a gravestone with the epitaph

I told the doctor

that I was sick

Is tempted to recite

told doc I si

I the tor that was

ck"

with a peak on sick, in which case it makes little sense. “But if the epitaph is read:

told

I the sick!

doctor that I was

The joke comes clear.”

All this goes to underline the role of intonation in signalling grammatical relations. Sometimes intonation is the only clue for recognising a grammatical category (e.g. yes-no questions and tag-questions in Arabic), sometimes intonation reinforces the role of grammar in determining grammatical relationships (e.g. conditionals in Arabic; disambiguation, etc.). But above all, it is the pragmatic role of intonation (including the affective and the attitudinal) that prevails.

5. Tone group boundary:

As Fox (1973:17) says “All in all then, we may conclude that for most writers on English intonation the tone-group is the largest tonal unit, and, although we may recognise characteristic sequences of tones, these do not constitute a larger entity”. Throughout this thesis, the tone-group is taken to be the unit of intonation. Besides, it is the clause which is considered to be the commonest domain of the tone-group, although Arabic and English at times associate the tone-group with the sentence (cf. conditionals above), or even with a phrase or a word. As Cruttenden (1970: 184) says:

“... We are left with a definition of the intonation-group as one sense-group or ‘one unit of information’. This unit of information usually corresponds with a grammatical unit, most frequently a clause, but often a noun phrase, an adverbial phrase, or a sentence consisting of two clauses”.

A tone-group is characterised by internal cohesiveness and, as shown above, this fact is at times used to disambiguate sentences. The disambiguation of sentences by means of intonation must neither be exaggerated as a grammatical function of intonation; nor must it be underestimated, in spite of what Cruttenden (*ibid.*) says: “Nevertheless disambiguation by the use of intonation groupings is of relatively infrequent occurrence in the language, because such formally identical sentences are rare and in any case are usually disambiguated by the context”. What was said above (cf. the previous section on co-ordination and subordination) is sufficient, one hopes, to establish a grammatical role for intonation. The internal coherence of the tone-group is certainly an instrument –intonationally devised– to delimit grammatical constituents. To avoid repetition, just one more example is given here. The sentence

gassal ʔu maššaT šaθruh

‘He washed and combed his hair’

can be taken as one tone group to mean one thing, or as two tone-groups to mean something else, viz:

(a) ^lgassal ʔu ^lmaššaT šàθruh (one tone-group)

(b) ḡassal ʔu ^lmaššaT \ šaθruh (two tone-group)

On the basis of the principle of cohesiveness of items in the same tone-group, (a) makes one grammatical unit meaning, he washed (his hair) and combed his hair. In contrast, and by the same principle of cohesiveness (b) has two grammatical units so that it means he washed (e.g. his hands, his face) and combed his hair.

3. Tonicity:

The placement of the tonic (or accent as it is called by American writers, e.g. Bolinger (1985; 1989), Ladd (1983) has grammatical relevance in a few places. In English grammar, accentuation plays a significant role in the process of compounding. The distinction between (adjective + noun) on the one hand, and compounds, on the other hand is signalled by the place of the accent viz:

hígh cháir vs. hìghchair

bláck bírd vs. bláckbird

But such compounding is virtually non-existent in Arabic, and tonicity figures in the following domains:

1. It is typically associated with the last lexical word in the utterance:

?ana ^ˈbakrah innifáa^ˋq, 'I hate hypocrisy'

It must be remembered that this is the normal way of saying the utterance. But the speaker may wish to highlight practically any word in the utterance to achieve certain pragmatic and contrastive effects cf:

?ána ^ˋba^ˈkrah innifáa^ˋq

which lays emphasis on the pronoun ?ana 'I' to express such meaning as, e.g. I, but not you.

2. Certain grammatical constructions, e.g. wh-questions, normally have the tonic placed on the question word itself: cf

ˋmiin ha^ˈkaalak, 'who told you?'

ˋween ra^ˈdayih, 'where are you going?'

ween¹ raayih, 'I beg you pardon, where are you going?'

Keef[^] haalak

or

Keef[\] haalak '(and) how are you?'

The last example with the rise–fall shows more interest on the part of the speaker than the typical

Keef[\] haalak

Similarly, the negative particle *maa* 'not' carries the accent in verb phrases where the verb does not have the suffix {-i š}:

?ana[\] maa baθrif, 'I do not know'

(cf. ?ana maa baθrifiš)

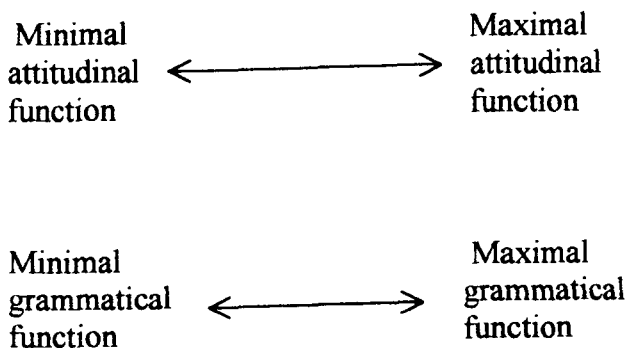
These two functions of tonicity have grammatical relevance; but the field requires further research in case there are other such connections between tonicity and grammar.

The discussion so far has concentrated on the grammatical function of intonation, although attitudinal reference has also been made whenever necessary. But attitudes are psychological and affective dispositions which are hard to define with a satisfactory measure of precision. Besides, as Crystal (1969: 284) says "...very often one finds a 'meaning' attributed to an intonation pattern which in fact derives largely or wholly from the attitudes implicit in the vocabulary of the utterance". Crystal cites the following example:

/ Why did you[\] Do such a stupid thing /

which has been given the meaning of ‘impatience’ or ‘irritability’ and says that to give such meanings to this utterance is to be distracted by the lexical content of the vocabulary. If ‘stupid’ were to be replaced by ‘dangerous’ in a context of mountain climbing, suggests Crystal, the meaning would differ.

At any rate, the established tradition is that intonation signals speakers’ attitudes towards what they say or towards an aspect of the context of the utterance—‘and no one would deny that this is certainly part of what intonation does’, (Crystal: op.cit.: 286). It is more accurate to say, as hinted in Schubiger (1935)-quoted in Crystal (op.cit: 288) ‘a pattern signals different kinds of information simultaneously, some of which becomes the dominant precept in a given context’. Crystal prefers to use scales ranging from minimal to maximal measures of grammatical and attitudinal functions of intonation:



and says (op.cit.: 289-290) “...the two functions of intonation stand in a relationship of hyponymy to each other: all cases where intonation is primarily of grammatical importance are also of attitudinal relevance, but not all cases of attitudinal functions (i.e. all utterances) display a grammatical function”. The previous examples in this chapter, and those in other chapters should suffice to show how intonation imparts attitudinal meaning. Anyway, here are three more examples:

1. In answer to the question, *mata bitriid niltaqi*, ‘when would you like us to meet?’ one may reply:

(a) *bukrah* or (b) *bukrah*.

The reply at (a) is definite, final, conclusive; that at (b) is tentative, seeking approval of the questioner.

2. (a) *ʔaʔTiini lʔanjar*, ‘give me the dagger’

(b) *ʔaʔTiini lʔanjar*

The former of these two is a command as might be expected from a policeman talking to someone with a dagger who might hurt himself or others. The latter is the type of utterance which, under the same circumstances, may be said by a social worker appealing to the person to hand him the dagger.

3. (a) *najhat*, ‘she passed’

(b) *najhat*, ‘has she passed?’

(c) *najaħat*, ‘she passed’

In this example, (a) *najhat* is certain beyond doubt, (b) *najhat* is questioning and perhaps conveying surprise, (c) *najaħat* expresses reservation and is construed as incomplete implying e.g. ‘but she did not get a high grade’.

One of the problems with attitudes is that the labels given to them are (1) open ended such that their number is on the increase, (2) they are not precisely and objectively defined, and therefore, different writers may use them with different meanings. This

problem becomes worse when these terms, e.g. 'tough', 'harsh', 'dismayed', 'excited', 'pleased', 'angry', 'matter-of-fact', 'irritating', 'soothing', 'amusing', 'encouraging', 'discouraging', etc., are communicated inter-culturally and given translational equivalents, e.g. in German, French, Arabic, Japanese, Russian, etc. "two scholars," says Crystal (op.cit.: 295) 'may both use 'harsh' and 'rough' as synonymous, or partially overlapping terms or as mutually exclusive terms, without realising the extent of a similarity or difference between them'.

But in spite of these problems one can still talk about the affective or attitudinal function of intonation using these labels, if only with a relatively modest degree of objectivity.

To bring this section to a close, it should be emphasised that the grammatical and pragmatic (including attitudinal) functions of intonation are so closely intertwined that it is best to deal with them together as shown in this chapter. One final word; to deal with the functions of intonation adequately and systematically needs much more space than is available in this thesis, it is hoped that the discussion presented above, however limited it is, has shown some of the relevant features of the functions of intonation in addition to underlining some of the problems encountered in the researching of this topic.

Chapter 5

Discoursal Function of Intonation

Intonation plays important cohesive roles within an utterance and across spoken exchanges between speakers. This chapter will highlight such functions of intonation within the single utterance, but more emphatically between utterances involving people's interaction.

In their Discourse Intonation and Language Teaching, Brazil, Coulthard and Johns (1980: 73-82) present an interesting discussion of discourse intonation. Their study is based on exchanges between speakers, where exchange consists of 'moves'; the main classes of moves being: opening, answering, and follow-up.

"The first two are functionally complementary: an opening sets up certain constraints and expectations which the answering move fulfils" (op.cit.: 74)

But an answering move may or may not fulfil expectations, and it is followed by a new opening move or by a follow-up one.

Applied to Arabic discourse, this scheme is interesting and revealing as the following examples illustrate:

- A. \ miin 9albaab?, 'who's at the door?' (high fall)
- B. | lyoom il?i?neen, 'Today is Monday' (low fall)

Here A's opening move is a wh-question with a high fall on 'miin 'who'. B's answering move is rather odd and playful; it is potentially terminal as exhibited by the low fall on the last syllable of the last word. In other words, the exchange between A and B can terminate there, but there are other options. For instance, A may get angry at the unexpected and irrelevant answer, and can add a new opening move, e.g.

A. ^ˈʔamma waqaaʔa, 'What impudence!'

on a high fall, A's new move expresses anger and infuriation. Hearing A's new move, B may depart or may choose to extend the exchange.

A more felicitous example fulfilling expectations is the following:

A. ^ˈKam θamanuh, 'How much is it?' (low fall)

B. ^ˈθalaθ miyyih, 'three hundred' (low fall)

A. ^ˈKθiir, 'too much' (low fall)

This exchange consists of an opening move on a low fall, an answering move on a low fall, and a follow-up termination, also on a low fall. Obviously, by choosing a low fall in his opening move, A sets up the scene intonationally for the ensuing moves—the choice of low fall is dispassionate and uninterested. This induces a similar attitude in B, whose answering move echoes A's move intonationally, whereupon A continues to show lack of interest and terminates the exchange concordially with a low fall.

Now study the following example:

- A. Kam θamanuh, 'how much is it?' (high fall)
- B. θalaθ miyyi, 'three hundred' (high fall)
- A. miiteen, 'two hundred' (high fall)
- B. miiteen u xamsiin, 'two hundred and fifty' (high fall)
- A. lissa kθiir, 'still too much' (high fall)
- B. man'taaš šarra, 'you are not a (serious) buyer' (low fall)

This last example differs from the previous one in respect of key (i.e. high against low). The high fall expresses interest and enthusiasm here and a bargaining process takes place; but the conversation terminates without a deal being struck; and disappointed, B pitches his closing remark on a low fall. This chapter contains, among other things, similar examples scattered under its different subsections.

Utterances differ intonationally in three ways: (a) the type of nucleus tone, (b) tonicity, i.e. the place of the nucleus. Both tonal type and tonicity (the latter, in particular) have syntagmatic functions of a discursal nature binding together cohesively and coherently elements of the spoken text. In other words, these two aspects of intonation, albeit in different degrees, link elements of the text both within and across tone groups, phrases and sentences. But first a word about tone-group

constituency. Tone-group constituency has a cohesive role to play in textual structure.

Consider verse 52 in Surit Yasin:

“qaaluu yaa waylanaa / man ba9aΘanaa min marqadinaa / haada
maa wa9ada rrahmaanu / wa Sadaqa / Imursaluun”, ‘they said woe unto
us / who has resurrected us from our place of repose / this is what the Merciful has
promised / and the messengers (of God) have spoken the truth”.

If one were to include the word / haadaa / in the second tone-group, one would get:

/ man ba9aΘanaa min marqadinaa haadaa? /, ‘who resurrected us from
(lit)our place of repose this?’ which, elsewhere is grammatical and meaningful, but in
the context of the above Quranic verse, to do this would render the remainder of the
utterance a sentence without its subject. This would also distort the text and the
meaning of the verse.

It is worth adding that in the Holy Quran there is a sign opposite this verse (or else as
a superscript at the end of the word / marqadinaa /, ‘our place of repose’ which
instructs the reader to pause after / marqadinaa /, ensuring that / haadaa / belongs
with the following tone-group, and averting the above mentioned violation in the
grammar and discourse of the verse.

English, of course, abounds in examples like this where tone-group constituency is
relevant to meaning and discourse. (cf. O’Connor and Arnold 1973: 3), Bolinger
(1986: 27).

Discorsal Functions of tonal type:

1. Falling tone:

A falling tone in Arabic and English is typically a signal of completeness and finality. But this is not an invariable characteristic of falling tones. Sometimes a falling tone in Arabic expresses an apology on the part of the speaker, and by conventions of social etiquette, the listener cannot help but give a response, verbal or non-verbal, e.g. by nodding. For example,

A. mutaʔassif, ‘sorry’

B. maʔaleeš, ‘never mind’

In such a situation, a high falling tone is a stimulus for an eminent response and, hence it serves as a discorsal device of cohesion and coherence. The verbal response is also on a fall, but this time a low one to express a degree of annoyance.

Falling tones in English and Arabic are often repeated across tone groups, thereby acting as discorsal cohesive devices. For example, the repetition of falls in Haj (pilgrimage) prayers:

‘labbayka llaahumma labbayk, labbayka laa šariika laka labbayk,
ʔinna lhamda, wanniʔmata, laka walmulk, laa šariika lak’—‘here I

am, O Allah, at your service. Here I am (ascribing) no partners to you, Verily Praise, Blessing/Grace, Sovereignty are Yours, (I ascribe) no partners to you.

This sequence of high falling tones (compatible with high spiritual motivation of pilgrims in Mecca) not only imparts emphasis to the utterance, but gives unity to the constituents of the prayer—each constituent in the text of the prayer echoes the preceding one and anticipates the following. The unity and cohesion of the pilgrimage prayer is achieved by intonation. Below are some other examples:

- (i) A. ʔilxiTTa fišlat, ‘the plan failed’ (stimulus)
 B. ʔyaa lalʔasaf, ‘what a pity’ (response)
- (ii) ʔyaa ʔibni, keef btuxTub, biduun 9ilmi, ‘oh my son, how dare you propose (i.e. get engaged), without my knowledge’ (blame/rebuke)
- (iii) ʔmaa ʔankarat, bil9aks, i9tarfat (or bil9aks i9tarfat), ‘she did not deny, on the contrary, she admitted! (two sentences with a conjunction, all on a fall).
- With adverbial or parenthetical extensions, echoing falls are evident means of cohesion, as shown in examples (iv) (v) and (vi).
- (iv) ʔlaazim ikuun filbeet, halla, he must be at home, now)
- (v) miš mumkin, geer heek, ‘it is not possible, otherwise’.
- (vi) ʔmaa fii waqt, bukraḥ, ‘there’s no time, tomorrow’.

These echoing falls suggest that the speaker is quite firmly committed to what he says. But it is also possible to use a different accentuation pattern involving the fall plus rise, as two interdependent nuclear tones, e.g.

miš [\]mumkin, geer [/]heek

‘It is not possible, otherwise’

Maybe in this case the adverbial extension comes as an afterthought, and therefore it does not carry the firm commitment associated with the fall.

Echoing tonal falls in Arabic (as in English) are instruments of additive discoursal function as shown in examples (vii), (viii), and (ix):

(vii) mah^hmuud bitkallam [?]al^{ma}ani, ka^{ma}an.

‘Mahmoud speaks German, too’ (i.e. as well as, say, English)

Here the repeated tonal fall links the additive lexical item /kamaan/ ‘too, also’ with the preceding nucleus /?almaani/ ‘German’ implying that in addition to say, English, Mahmoud speaks German. However, if the first fall is associated with Mahmoud, the additive/kamaan/ now echoes this to mean that he too speaks German as well as another person, e.g. Mazen, does.

(viii) mah^hmuud bitkallam [?]al^{ma}ani, ka^{ma}an

‘Mahmoud speaks German, too’ (i.e. as well as, e.g. Mazen)

(ix) ?u maħmuud maa bitkallam ?almaani, ?ayDan.

‘And Mahmoud doesn’t speak German, either

(any more than, say, Mazen does)

By the same token, examples (viii) and (ix) show how a repeated fall links the additive words /kamaan/ and /?ayDan/, both meaning ‘too’, with the preceding nucleus. Similar patterns of tonal fall occur in English as shown in Mitchell and El-Hassan (1989: 53).

2. The Rise:

Rising tones are appropriate, though not exclusively for asking yes-no questions in English and Arabic. With this function they tend to create a communication gap which calls for bridging. In the following example, for instance, the syntax, including word order, is not in the form of a question. It is the tonal rise which makes the utterance a question:

(i) A. raayhiin 9al9aša, (lit) ‘going to dinner?’

B. ?in šaallah ‘God willing; All being well’

B’s response is elicited by virtue of the rising tone in A’s utterance; the dependency between the two utterances is a function of the rising intonation. “Echoing rises” as in Mitchell and El-Hassan (1989: 54), occur in parenthetical additions or afterthoughts to interrogative sentences, e.g.

‘Do you remember Tom Jackson, our old neighbour, who moved north.

Where ‘Tom Jackson’, ‘old neighbour’ and ‘who moved north’ are exact, intonational echoes of one another”. This would also work with falls. What is cohesive here is the identity of the tones (tone harmony).

Here is a similar example from Arabic:

niði maazin, xaTiib hiyaam, bint ʕammaana

‘Shall we invite Mazin, the fiance of Hiyam, our cousin?’

The discursial cohesive function of the repeated tonal rises is obvious.

Question tags also have discursial functions of the type discussed above. In Arabic, question tags are much more restricted in form and tonal type than in English. Insofar as form is concerned, Arabic has a very limited set of items that occur in the question tag; chief among these in the Levant are:

- (a) ?alaysa kaðaalik ?, ‘isn’t it so’ [+formal]
- (b) muu heek, ‘isn’t it so’ [- formal]
- (c) muš heek, ‘isn’t it so’ [-formal]
- (d) Saħiiħ , ‘correct’ [unmarked for formality]

With the exception of (a) these expressions are not syntactically in the form of questions; the rising intonation gives them the function of questions.

As shown above, tags in Arabic are lexicalised, whereas in English they are grammaticalised, in the sense that all auxiliaries (modal and primary) can occur with personal pronouns to make a question tag.

Intonationally, too, Arabic tags are restricted to a rising tone, whereas English tags can be associated with a rise or a fall depending on the context of the utterance. Arabic tags are therefore straightforward yes-no questions requiring a response.

Example:

A. maazin saafar, muš heek?

‘Mazin has left, hasn’t he?’

B. (Either) (a) naṭam saafar, ‘yes, he left’

(b) laa maa saafar, ‘no, he hasn’t left’.

The affirmative and negative answers at B can both occur; the choice depends on the facts of the situations. Thus, question tags in Arabic-with the accompanying tonal rise connect a preceding utterance with a following response. In this sense the rising tag can be said to have a discoursal function, referring back and forth in the context of utterance.

The cohesive function of tonal rises is clear in utterances which list items, including longer elements of structure, in a series, as shown below:

(i) ?ištareet mouz, ?u ʒinab, ?utffaah, ?u tiin
 ‘I bought bananas, grapes, apples, and figs’.

(i) ʔana maa bašrab xamra,

‘I don’t drink alcohol’

This utterance presupposes a previous offer (by another interlocutor) of alcoholic drinks, and at the same time implying (but I drink non-alcohol). Note that if *xamra* ‘alcohol’ was said on a fall the effect would be different and the utterance could not be extended by ‘but...’.

(ii) A. ʔumru ʔašar sanawaat, ‘he is ten years old’

B. (correcting) tisiʔ sanawaat, ‘nine years’

Once again the link is obvious between A’s statement and B’s response-another example of discoursal cohesion achieved by tonal type. Notice that B’s answer can equally be on a fall, viz: *tisiʔ sanawaat*. But the fall, especially the low fall, is rather rude in this situation. The fall-rise, on the other hand, makes a friendly amendment.

The cohesive role of the fall-rise is very clear in delimiting the scope of negation in utterances like the one below. Note the interesting contrast between the fall and the fall-rise (cf. Cruttenden: 109-110), Mitchell and El-Hassan (op.cit.: 56-57), El-Hassan (1990: 11)

- (a) [|]maa [|]tzawwajha [|]lisabab _\waʔhad. (fall), 'He didn't marry her for one reason', (i.e. one reason only prevented the marriage),
- (b) maa [|]tzawwajha [|]lisabab [∨]waʔhad (fall-rise), 'He did not marry her for one reason', (i.e. the marriage took place and not just for one reason-many reasons were involved).

B. Tonicity:

The place of the nuclear tone plays a vital role in the expression of attitudinal and discursual meanings of intonation. The discursual function of intonation in general concerns knowledge or information shared by interlocutors, presuppositions and expectations in the context of utterance. In other words, old and new information has significant implications for nuclear placement. Bolinger (1985: 74-136) and Cruttenden (1986: 74-94) discuss such functions of intonation in English with reference to Focus.

In this area, the contribution of works on English intonation to the study of Arabic intonation has far reaching potential: Arabic intonation in general but in this area in particular is virgin soil indeed. True there are one or two studies of Arabic intonation which point in this direction (cf. El-Hassan 1990) and Mitchell (1993); but a detailed study is still awaited.

It is, therefore, hoped that in this section of the thesis the frontiers of this topic will be extended a little to pave the way for further research. The analysis will concentrate on

accentual focus in Arabic and its relationship with old and new information. The Arabic language, much like the English language, typically favours end-focus, where the nuclear accent coincides with the last lexical word in the utterance, last heard is best noted, as Bolinger (op.cit.: 49) puts it. End-focus is climactic; it is, as Bolinger (op.cit.: 74) says an accent of power—a means of employing intonation to “impress”. This type of accent is climactic as it hits the addressee with maximum force towards the end of the utterance, thereby impressing him most strongly. Here are some examples:

(1) [|]baʔD [|]irrijaal [|]biDurbu [\]ʔawlaadhum, ‘Some men beat their children’

(2) [|]baʃuufak [\]filmasa, ‘I’ll see you in the evening’

(3) [|]stagraʔat [|]minni [|]sittiin [\]diinaar, ‘She borrowed (lit) from me sixty
dinars’

(4) [|]mumkin [|]tigriʔni [|]xamis [|]danaanijr, ‘Can you lend me five dinars?’

(5) [|]ħalabti [|]lʔanzaat [|]ʔ, ‘Have you milked the goats?’

(6) [|]waʃʃilni [\]lalbalad, ‘Take me down town’

(7) [|]ʔiʔmal [|]lu [\]mawʔid, ‘Make him an appointment’

In all of these examples which include declarative statements (1, 2, 3), yes-no questions (4, 5), commands (6, 7), the nuclear tone is associated with the last word to achieve a climactic impression. The impact of the message gradually builds up (with the aid of prenuclear accents/stresses), and the onset of end-focus marks discursal climax.

It is necessary to point out that end-focus in Arabic is by no means an invariable tonal phenomenon. For instance, adverbials in final position, unless accented for interest, normally do not carry climactic focus. (cf. Cruttenden op.cit.: 84) Examples (8, 9)

(8) msaafriin ʔalḥajj bukra, ‘We’re going on pilgrimage tomorrow’.

(9) tgaddeena mansaf bjaraš, ‘We had Mansaf in Jarash’.

In these two examples, the accent falls on a word preceding /bukra/ ‘tomorrow’ and /bjaraš/ ‘in Jarash’.

Another common area of deviation from the typical end-focus concerns wh-questions.

Examples (10–13)

(10) ʔayya ktaab bitriid, ‘which book would you like?’

(11) miin ḥakaalak?, ‘who told you?’

(12) lamiin haSSuurah haay, ‘whose is this picture?’

(13) mata ʔiid zawaajku?, ‘when is the anniversary of your marriage?’

examples (10, 13) are wh-questions where the usual accent in Arabic is a fall on the wh-word as shown. The accent may change type and /or place however, if there is a good reason. For instance, a rise may occur to request repetition of just mentioned

information, or to focus interest on some other words as shown in (14) and (15) below:

(14) lamiin ha SSuura haay, 'Whose (did you say) is this picture?'

(15) lamiin haSSuura haay, 'Whose picture (not, say car or anything else) is this?'

Accents of interest will be dealt with later on in this chapter, but they are introduced here to show that end-focus in Arabic is not always the rule. Certain attitudinal and discursual circumstances often necessitate that the tonal accent fall on a word which is not utterance final, as illustrated by examples (16), and (17):

(16) (?intabih); fii h̄ayyi taht issariir, 'look out there is a snake under the bed'

Here, the utterance is intended not so much to inform, but rather to warn the hearer. The word /h̄ayyi (h)/ 'snake' is certainly the most important word in the utterance: snakes are generally assumed to be venomous. Therefore, /h̄ayyi/ takes the nuclear accent and is the focus of the interest.

(17) A. ʔeeš fii, 'what is the matter?'

B. ʔilqiTaar¹xaraj 9an issikkah, 'the train has run off the rails'.

Here once again, the focus of interest is on /ʔilqiTaar/ ‘the train’, which is the first word in B’s answer. To be sure, the first two words in the utterance, i.e. /ʔilqiTaar xaraʒ/ ‘the train has run off’, make the last two words, i.e. /ʕan issikkah/ ‘off the rails’ fairly predictable, hence they (i.e. the last two words) add little information to what is already known before they are uttered in this context.

Accents of interest in Arabic discourse merit a systematic and fairly detailed consideration. But before setting out to do this, a word must be said about the scope of the focus. As Cruttenden (op.cit.: 88) says. “...the nucleus does not in itself indicate the extent of the focus; more especially, it does not indicate how much of what precedes the nucleus is to be taken as in focus”. The scope of the focus is to a large extent indicated by the context of the utterance, e.g.

(18) A. (ʕuu ʔaxbaar maazin ʔ), ‘what’s the news about Mazin?’

B. maazin^ˈtraffaʕ, ‘Mazin has been promoted’.

The scope of the focus in (18) B consists of the two syllables of the word /traffaʕ/ i.e. the predicate. But in the following example the scope of the focus is the final word /ʔistiθnaaʔii/ ‘exceptional/ out-of-the ordinary’, which consists of four syllables:

(19) A. smiʕt innu maazin traffaʕ, ‘I heard that Mazin has been promoted’.

B. maazin traffaθ tarfiiθ istiθnaaʔii, ‘Mazin has got (lit) a promotion exceptional, i.e. an exceptional promotion’.

Only the word /ʔistiθnaaʔii/ ‘exceptional’ is new in B’s answer, hence the focus covers this word only.

Now consider example (20):

(20) A. (Saar šii jdiid fiddaaʔira ʔaθnaaʔ giyaabii), ‘Anything new in the department during my absence?’

B. maazin traffaθ tarfiiθ istiθnaaʔi, ‘Mazin has got an exceptional promotion!’

Here the accent falls on the last syllable but one of the utterance, but the entire answer given by B is within the range of focus, for none of the bits of information in B’s answer can be assumed to be already in A’s consciousness.

To go back to the issue of more systematically investigating accents of interest, it is convenient to divide the topic into:

- (a) contrastivity,
- (b) old and new information.

A. Contrastivity:

A speaker can choose to emphasise intonationally virtually any word in an utterance to highlight the meaning of that word, or indicate a contrast between that word or some other that could have been used.

1. (a) ʔana saaʔadit maazin, 'I helped Mazin'
 (b) ʔana saaʔadit maazin, 'I helped Mazin'
 (c) ʔana saaʔadit maazin, 'I helped Mazin'

In this example, (a) shows climactic end-focus, (b) and (c) are contrastive, emphasising respectively the pronoun /ʔana/ 'I' and the verb /saaʔadit/ 'helped' with the help of such contrastive tonicity, (b) says it was I, and no other person that helped Mazin; and (c) emphasises the verb /saaʔadit/ to mean that was what I did to Mazin: I did not, for instance invite him, or hit him, or envy him.

In Arabic discourse, such contrastivity serves to make a comparison between a limited set of elements (cf. Cruttenden. Op.cit: 90).

2. maazin daxal, ʔayman¹ xaraj, 'Mazin entered, Ayman went out'.

Here the contrast, which is marked by the two nuclear accents, is between the agents (in this case, subjects) of the two parts of the utterance.

3. ʔana Tábaxt ʔu huwwa náDDaf, 'I cooked and he cleaned'.

This contrast involves the actions expressed by the verbs. As Cruttenden (ibid.) points out, contrasts are not always binary; cf:

4. (a) kaanat il ʔišaara ḥamra, 'the light was red',
 (b) ʔindu sayyara ḥamra, 'he got a red car'.

The former utterance involves a contrast between red and green in a set of traffic lights, whereas the latter contrasts red with all the potential colours of cars.

In general, then, accentual contrastivity focuses on an item which conveys new information. The question of new and old information is the subject of the next section. But it must be pointed out here that contrastivity may involve an item which can be regarded as old information; e.g.

5. (fii ʔusra Kaamli filmustašfa bisabab ilḥariiq; ʔilʔab ḥaaltu
 xaTiiri,

'there's a whole family in the hospital because of the fire; the father is in serious condition'.

In this example, /ʔilʔab/ 'the father' receives a contrastive accent despite the fact that it can be considered old information derivable from the preceding /ʔusra kaamili/

‘a whole family’. So it is the context of the utterance which determines accentual contrastivity. Consider

6. (a) miʕidtak btuuʕʕak, ‘Does your stomach ache?’

(b) laʔ^ˈraasi byuujiʕnii, ‘No, my^ˈ head aches’

unlike many who have written about English intonation, Bolinger (op.cit.: 91-95) seems to be unhappy about accentual contrastivity. Referring to the sentence:

‘She likes wine but she hates milk’

he has this to say:

“here liking and hating are contrasted within some such set as ‘attitudes toward’, and wine and milk are contrasted within some such set as ‘beverages’. There is no question that in this context these items are in a sort of logical contrast, but since the sentence can be said with no particular emphasis on the contrasted items, it is hard to claim that there is any special requirement of making them stand out accentually”.

In footnote 3 (p. 380), Bolinger says that “contrast is apt to be more a matter of deaccenting than of accenting”. For instance, in

He put on a red shirt

Bolinger argues that “if shirt is not accented it is still expected” (ibid.).

Nonetheless, accentual contrastivity is a common and recurrent intonational phenomenon in Arabic and English, and to recognise it as a tonal feature serves a useful purpose in understanding spoken discourse. Thus, the focus on /Darab/ ‘(he) hit’ in the following example contributes something to the meaning of the utterance.

7. ʔana mitʔakkid innu maazin D̂arab ilwaziir, ‘I am certain that Mazin hit the minister’.

Said by a witness, this utterance is so emphatic that it leaves no doubt in the mind of, say, a presiding judge that this is a clear case of physical assault. It leaves no room for such alleviating follow-up by the defendant’s lawyer as:

laʔallu bass rafaʔ iidu, ‘Maybe he just raised his hand’

It is hard to accept Bolinger’s stand that this type of contrastivity is “more a matter of deaccenting than of accenting”. Note that the word /ilwaziir/ ‘the minister’ is not really deaccenting; it carries a stress-accent on its last syllable, and moreover, it falls within the scope of accentuation.

B. Old and new information:

In general, but by no means always, accentual focus is associated with an item which provides new information. But it was shown in the discussion of contrastivity above that old information does not constantly fall outside the scope of focus. Example (4) above (repeated below) is a case in point:

(5) Repeated:

fii ʔsra kaamli filmustašfa bisabab ilhariiq

‘there is a whole family in the hospital because of the fire’

ʔilʔab¹ ɦaaltu¹ xaTiirih

‘the father is in a serious condition’

/ʔilʔb/ ‘the father’ is old information subsumed under /ʔsra Kaamli/ ‘a whole family’ and therefore expected to be outside the scope of focus. But it is focussed despite this expectation. Cruttenden (op.cit.: 91) supports this argument with respect to English, and has this to say:

“We therefore have to modify our statement about old information falling outside the scope of focus by saying that old and contrastive information will frequently be separately focussed”.

Further down the line this issue will be investigated in more detail, but let us for the time being concentrate on contexts of utterance where only new information is focussed. As Bolinger (op.cit.: 89) says:

“A given word, say, is accented to show its informativeness, which in turn usually reflects its newness, its unexpectedness, its special contribution toward answering the question that usually lies back of the spoken sentence.”

This idea is illustrated by example (1):

(1) A. leeš Tiliθ bakkiir ilyoom ?, ‘why did he go out early today?’

B.θindu muqaabali issaaθa θamaanyih, ‘he has an interview at 8 o’clock’.

The word /muqaabali/ ‘interview’ takes the accent of interest because of its newness and informativeness with regard to the preceding question. Note that

/bakkiir/ ‘early’ in the question makes the time of the interview, i.e. /issaa9a ̸amaanyih/ ‘at eight o’clock’, redundant; hence, it needs no tonal emphasis.

What constitutes old information and what constitute new information in discourse may not be explicitly identifiable as shown in the example above. But in general, repetition of an element-whether verbatim or paraphrastic, direct or indirect, is considered old information. Examples (old information underlined)

2. A. miin najaḥ fil?imtiḥaan?, ‘who passed the test?’

B. maazin najaḥ fil?imtiḥaan, ‘Mazin passed the test’.

In this example, /najaḥ fil?imtiḥaan/ ‘passed the test’ in B’s answer is verbatim repetition of the same in A’s question. It is therefore outside the scope of accentual focus, which falls on Mazin. The fact that /najaḥ fil?imtiḥaan/ can be deleted without much loss in the meaning of B’s response is evidence of its redundancy.

A student returning home after spending some time abroad asks about the news:

8. Student: ?eeš ?axbaar ilbalad ?, ‘what is the news about the country?’

gets the answer:

tʃakkalat ḥukuuma jdiidih, ‘a new government has been formed’.

Here the entire answer is new information and a climactic end-focus is called for.

As mentioned above, old information may recur indirectly by many subtle ways of paraphrastic repetition which the context makes clear.

(a) elliptic substitutes:

maazin maa ?idir yiħmi DDeef, laakin ?ayman bayyaD ilwijiħ

‘Mazin wasn’t able to protect the guest, but Ayman saved the situation (lit: made the face white).

The phrase /bayyaD ilwijiħ/ ‘saved the situation’ is a substitute for the preceding /?idir yiħmi DDeef/ ‘was able to protect the guest’ conveying the same meaning.

Therefore, /bayyaD ilwijiħ/ is old information, which explains why it is not focussed. Instead, /?ayman/ ‘/Ayman’ takes the nuclear accent; he succeeded in getting something done in contrast with Mazin, who failed.

(b) Synonymy:

In the example just mentioned, /bayyaD ilwijiħ/ ‘saved the situation’ is not a synonym of /?idir yiħmi DDeef/; it is an ellipted equivalent. The following example, however, involves a relationship of synonymy (cf. El-Hassan op.cit.: 29).

1. (ʔana bazakki ʔamwaali fii ramaDaan)

liʔannu ʔajr iSSadaqa kabiir jiddan fii šahr iSSoom.

‘(I give alms in Ramadan) because the reward of alms is very great in the month of fasting’.

As El-Hassan says, /šahr iSSoom/ ‘the month of fasting’ at the end of the utterance is synonymous with Ramadan, which is mentioned earlier on in the text. Therefore /šahr iSSoom/ is old information, which explains why it is deaccented. Had it not been for this synonymous repetition, /šahr iSSoom/ would have taken the nuclear accent.

(c) Hyponymy:

Hyponymy is a sense relation which holds between two items of which one is a subclass of the other. The larger class or set is the superordinate, and the sub-class is the hyponym, example:

A. tfaDDal, ‘oblige us; help yourself’

B. ʔeeš haada ʔ, ‘what’s this?’

A. nabiid, ‘wine’

B. laa, ʔana maa bašrab xamrah, ‘no, I don’t drink alcohol’.

The last word in B's second response, i.e./**xamrah**/ 'alcohol' is a superordinate of which the former word /**nabiid**/ 'wine' is a hyponym. Normally, /**xamrah**/ in this final position is subject to end-focus, but in this context it is regarded as old information, hence the deaccentuation.

It was mentioned above that old information is not always outside the scope of focus. If old information is contrastive, for instance, it usually is under the scope of focus. An example from Arabic was given above, it is repeated here:

fii ʔusra kaamli filmustašfaa bisabab ilhariiq. ʔilʔab haaltu
xaTiirih, 'there is a whole family in the hospital because of the fire. The
father is in serious condition'.

Now let us look at other situations involving old information. Verbatim echoes are a case in point. For instance:

- A. | kallaf ʔalfeen diinaar biZZabT, 'it cost two thousand dinars exactly'
B. ʔalfeen diinaar biZZabT, 'two thousand dinars exactly'.

The accentual focus in the echoing utterance is climactic. This is subject to more than one interpretation: either B is expressing resentment or incredulity or is being ironic. Perhaps it is such attitudinal-discoursal emotions that require the echo to be in focus.

In situations like this it is hard to draw a line between the attitudinal and the discursual functions of intonation; the two tend to converge.

Typically then, meanings already present (explicitly or implicitly) in the situation of the utterance tend not to be highlighted intonationally. (cf. Bolinger, op.cit.: 112-113).

Here are some examples with the unfocussed elements underlined>:

1. ?ilxiTaab maTbuuθ bass iTTaabθa Dayyaθat SaTreen,\

‘the speech is typed, but the typist missed two lines’.

In the context of a written speech, the phrase SaTreen ‘two lines’ is implied, and therefore doesn’t need accentuation.

2. maa bti?dar it Sawwit maa lam it kuun θiθriin fama fooq, ‘you

can’t vote unless you are twenty or over’

3. bakrah lambaat inniyon li?annu Taniinha bizθijni, ‘I hate neon

tubes because their hum disturbs me’

4. fii ?azwaaj biDurbu zawjaathum, ‘there are husbands who beat

their wives’

in this last example /ʔazwaaj/ ‘husbands’ predicts the occurrence of /zawjaathum/ ‘their wives’, in which case zawjaathum is deaccented thereby allowing the accent to be placed on the preceding verb /biDurbu/ ‘beat’. Compare, /fii rjaal biDurbu zawjaathum/ where /rjaal/ ‘men’ leaves wider choice for victims of beating, e.g. /ʔawlaadhūm/ ‘their children’. /ʔaxawaathum/ ‘their sisters’, /ʔixwaanhum/ ‘their brothers’. Hence, /zawjaathum/ in this case takes the accent.

Often the meaning of a word is so complex, and as Bolinger (op.cit.: 10) says “...it may be only some part or aspect of a meaning that we intend to highlight”. One can, for instance, highlight a grammatical category (e.g. tense, aspect, number, and gender), a word-class (e.g. noun, adjective, verb) etc. cf. El-Hassan (op.cit.: 22-25).

Examples.

1. Tense:

- A. kaanat itganni fil haflaat, muš keek ʔ, ‘she used to sing at parties, isn’t that so?’
- B. baʔidha bitganni filhaflaat, ‘she still sings at parties’.

2. Aspect:

- A. smiʔt inhum banu madrasi jdiidih, ‘I heard they (have) built a new school’
- B. ʔam bibnu biiha, ‘they are building it’

3. Modality: (commitment on the part of the speaker with regard to what he says, e.g. necessity, obligation, permission, possibility, etc.). e.g.

A. ʔiTTabiib filʕiyaadih?, 'is the doctor in the clinic?

B. laazim ikuun filʕiyaadih, 'he must be in the clinic'.

4. Head noun:

A. baddu yitzawwaj iṣṣahr iljaay, 'he wants to get married next month', (lit. month next)

B. smiṭt innu lʔusbuuṭ iljaay, 'I heard next week' (lit. week next)

A. ʔiṣṣahr iljaay, (lit. month next).

In his second response, A places the accent on the head noun of the noun phrase to make it stand out in contrast with B's response.

5. Modifier:

A. baddu yitzawwaj iṣṣahr haad, 'he wants to get married (lit. the month this), i.e. this month'.

B. ʔiṣṣahr iljaay (lit. the month next), i.e. next month'.

B accents the modifier /ʔiljaay/ in contrast with A's /haad/ 'this'. The focus in B's response is one of both interest and power for climax and it tends to consume more vocal energy in terms of tonal range (e.g. a higher fall) than in the case of climax only shown in example 4, for instance.

Conclusion

A lot has been written about English intonation, but not all those who wrote about it use the same descriptive and theoretical framework. Most British and American intonationists have similar persuasions and interests, although some are more practical and more pedagogically oriented, while others are more theoretically and descriptively oriented.

As far as the study of Arabic intonation is concerned, there is, regrettably, a shortage of sources. No systematic attempts to study Arabic intonation are available. There are a few articles which concentrate on one aspect or another of Arabic intonation as well as unpublished graduate dissertations written by students in certain departments of language study in the U. K. and U. S. A.

The present thesis is designed to show the contribution of works on English intonation to the study of intonation in the spoken Arabic of Jordanians and Palestinians.

Throughout the thesis, the theoretical framework and the descriptive techniques advanced for English intonation have been a source of inspiration and a model for studying Arabic intonation. Of course the detailed facts of English intonation are not the same as those of Arabic intonation. No attempt is made in the present thesis to force the facts of English into the straitjacket of Arabic. The same theoretical and descriptive model, however, is utilised to study the details of Arabic intonation in its own right. But as it turned out, the two languages, which are so different genetically (English being Germanic, Arabic Semitic) do share certain aspects of intonation. This

is likely to be in part due to certain universals having to do with intonation across human languages (cf. Cruttenden op.cit.: 72-73).

In what follows a summary of the main contributions of works on English intonation to the study of Arabic intonation will be made.

1. Tone groups:

The similarity between the establishment of tone-groups in English and Arabic is very striking. (cf. chapter 3 of this thesis). The size of the tone group varies from several words to just one word. Example:

(a) /ʔiʃtareet[|] ruzz[|] u sukkar/[\], 'I bought rice and sugar'

as one tone group in (a) above, and as two tone groups in (b) below:

/ʔiʃtareet ruzz/[|] u sukkar/[\], 'I bought rice/ and sugar'.

The phonological characteristics delimiting tone group boundary are also similar. These include lower pitched unaccented syllables at the end of a tone group than at the beginning, and the lengthening of a syllable marking a tone-group boundary.

Tone-groups affect meaning in both languages. In English, for example, (cf. O'Connor and Arnold, op.cit.: 3):

She dressed/ and fed the baby (two tone groups)

She dressed and fed the baby (one tone group)

Similarly, in Arabic:

ˈnaDDafat/ u ˈħalbat ilθanzih/ (two tone groups)

‘She cleaned (e.g. the house) and milked the goat’

ˈnaDDafat u ˈħalbat ilθanzih (one tone group)

‘She cleaned (the goat) and milked the goat’.

2. Tones:

The establishment of tones in Arabic has a great deal in common with the establishment of tones in English. Basically, the fall and the rise are the most salient tones in Arabic, but there are complex combinations of these, e.g. (fall-rise) and (rise-fall) which are nuclear tones, and (fall + rise), which is not a single nuclear tone, but rather an association of two nuclear tones. Examples:

(a) Fall-rise:

A. ʔeeš raʔyak fiħ ʔ, ‘what is your opinion of him?’

B. šaab ˘Tayyib, ‘a nice chap’, implying some reservation, e.g. but...

(b) Rise-fall:

^
Yallah 'never mind' implying resignation, and being content although unsatisfactorily.

(c) Fall+rise:

The fall on an initial utterance, and the rise on an extension by e.g. and adverbial e.g.

\
miš mumkin, geer heek,
/
'It is not possible, otherwise'.

3. Tonal range

In both languages, a fall, for instance, may be high or low depending on the mood and emotional state of the speaker. The high fall in Arabic is usually charged with high feelings, whether pleasant or unpleasant. To express an angry mood one may say:

\
ʔinSarif, 'get lost'

but equally to convey a high degree of enthusiasm, one says:

\
mumtaaz, 'excellent'.

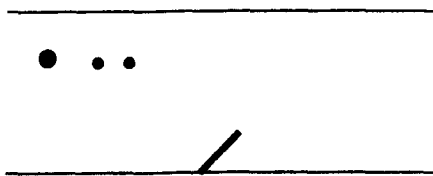
Admittedly, the context of the utterance will indicate whether *mumtaaz* is ironic or not; but the fact remains that the high fall reflects a strong emotion.

On a low pitch /ʔinSarif/ 'get lost' is an expression of despair and helplessness usually accompanied by husky (i.e. dry and almost whispering) voice.

Similarly, a wh-question, on a high fall conveys interest, e.g. *miin* 'who?', but on a low fall it is unmarked.

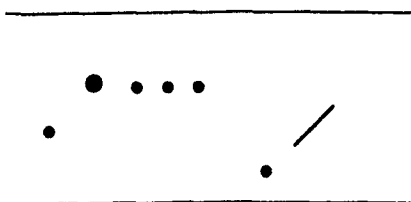
It must be pointed out that in spite of observable similarities in the overall picture of tonal range in English and Arabic, the actual details of pitch variation within the utterance tend to be language specific. Thus, in a final rise in English the final nuclear syllable often takes the lowest pitch (cf. Mitchell and El-Hassan op.cit.: 64), e.g.

Is it taboo?



In Arabic, the picture is different, cf:

ħakkaalak innu mamnuu9?, 'did he tell you it is forbidden?'



The tonic syllable here cannot be associated with the lowest pitch; the unaccented syllable in the last disyllabic word descends to make the accented syllable immediately following it stand out.

Such details of intonational difference need to be investigated thoroughly to facilitate the task of speakers of one language learning the other as a foreign language.

4. Tonicity:

The position of the nuclear syllable is commonly associated with the last lexical word in English and in Arabic; this has been referred to by the so-called end-focus, or climactic focus, which is intended to impress the hearer: last–heard is best–noted.

Equally, both languages permit other types of accentuation, notably, accents of interest. Depending on the meaning he wishes to emphasise, a speaker of English may accentuate virtually any word in the utterance, e.g.

He was injured in the accident.

The nuclear accent on injured emphasises the event (injured, against, say, killed, crushed, etc.). Any one of the six words in the above utterance can be associated with the nuclear accent to make it stand out and serve a contrastive function.

Arabic on the other hand, can associate a nuclear accent with a stressed syllable only.

Thus, the equivalent of the previous utterance in Arabic is:

jurih filhaadiθ

The two syllables which are potential holders of the accent are the stressed ones only:

ju- and -ħaa-, the remaining unstressed syllables cannot carry the accent. English, however, seems to be capable of associating the nuclear accent with almost any syllable-stressed or unstressed. Bolinger (op.cit.: 78) provides a very interesting example:

If we want to warn someone that a bottle containing a certain fluid is explosive, we are more apt to say It's gasol'ine!, and to say it's g'asoline merely to identify the contents.

Arabic does not permit such a contrast.

Accentuation in English compounds serves what may be called a lexical purpose; it changes the meaning. The citation form of, say, green-house has a different meaning from that of green-house. But such compounding is not a common feature of Arabic grammar, anyway.

Another difference between English and Arabic with respect to tonicity is worth mentioning here. In English one can move accent away from the end of the utterance "to seem more reserved", as Bolinger (op.cit.: 81) says, "or even by the sort of turnaround that one often gets in maintaining good relations with one's interlocutors more self-confident". Bolinger discusses this under what he calls anticlimax functions of intonation. "Speakers are not always intent on plunging the sword to the hilt", he

says. "A person who beats the drums constantly may seem to be covering up a sense of insecurity... So the person who responds to another's remark with [|]Absolutely scores the last word of confident assurance". Thus, to achieve such high degree of assurance, a speaker of English shifts the accent on the citation form of the word [|]absolutely to the left-most syllable.

In Arabic this cannot be done for two reasons:

- (a) the accent cannot be associated with an unstressed syllable in a word, and
- (b) this idea of confidence or assurance does not seem to be a relevant function of anticlimactic intonation. Anticlimactic accentuation in Arabic just shifts the focus of interest to express contrastive meanings, as mentioned under discursal functions of intonation.

5. Other functions of intonation:

Works on English intonation usually are concerned with its grammatical, attitudinal and discursal functions. These works provide inspiration and keys for students of Arabic intonation. A great deal needs to be done in this area of Arabic intonation along lines investigated by English intonationists; but care must be taken not to force the facts of one language into the mould of another.

The grammatical function of intonation seems to be a controversial issue; some have accepted it and argued for it, e.g. Cruttenden, others like Bolinger are unconvinced. Cruttenden (op.cit.: 86) says:

Compare: bilʒab[˘] šaTranj, on a fall which is a declarative statement meaning 'he plays chess'.

(b) Commands/ imperatives and the fall: e.g.

ʔudxul, 'get in'.

(c) Requests and the rise e.g.

warriini halbašakiir, 'show me these towels'.

This utterance said by a customer to a shop assistant is definitely a request; said on a fall, the same words will be a command.

(d) Declarative statements and the fall: e.g.

ʒam[˘] tišti, 'it is raining'.

(e) Wh-questions (unmarked) and the fall: e.g.

miin[˘] hakaalak?, 'who told you?'

Such questions can, of course, be said on a rise, but that would make them marked, e.g.

miin hakaalak, 'who told you?'

The latter question presupposes the name asked about has been already mentioned, and the listener wants it confirmed or clarified.

Even Bolinger (op.cit.: 25) recognises the link between grammar and intonation:

“We have already seen how intonation helps in distinguishing between questions and statements. This is especially true when the intonation is the only clue to the difference.”

Bolinger (op.cit.: 26-27) adds that intonation also helps “in marking the internal organisation of a sentence: serving, for example, as one kind of link between the more or less independent parts”. One of his examples is:

stop

signal

If you don't as soon as I you'll receive a sho
ck.

signal

stop.

If you don't as soon as I you'll receive a
ck.

Interestingly, Arabic makes similar use of intonation cf:

(a) ?iḍa maa wgifit ʕind il?iṣaara lḥamra btinmasik,

‘if you don’t stop, at the red light you’ll be caught’.

(b) ?iḍa maa wgifit ʕind il?iṣaara lḥamra btinmasik,

‘if you don’t stop at the red light, you’ll be caught’

Despite all this , Bolinger still thinks that “though intonation is indispensable to grammar, the grammatical functions of intonation are secondary to the emotional ones”. (op.cit.: 27). It is not clear how ‘secondary’ can be proved objectively. At any rate, the grammatical function of intonation is such a salient feature in Arabic that one cannot neglect it or underestimate it.

The attitudinal, or emotional, function of intonation in English seems to have received more attention and emphasis than the grammatical. In Arabic, the attitudinal function is a promising and rich area for research along lines similar to those pertinent to English intonation. (cf. chapter 4).

Likewise, the discursal function of Arabic intonation can be probed in the light of works on English intonation. Chapter 5 is intended as a modest contribution to this very interesting domain; but further research needs to be undertaken to highlight this function.

In conclusion then, this thesis has demonstrated that the benefits which Arabic intonation can draw from works on English intonation are many and far-reaching, both at the theoretical and the practical, e.g. pedagogical, levels. The thesis is an example, and the horizons of the topic can be pursued in similar light.

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