

EXPLORING THE RISING NUCLEUS IN NIGERIAN ENGLISH TONE PHRASES

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Abstract

This paper analyzes the operation of tone phrases in Nigerian English, focusing on the pattern of rise in the tone phrase with particular emphasis on the nucleus. It examines how statements can be segmented into various tone groups and compares whether these features align with those in British English. Fifty subjects read prepared statements, some drawn from studies by O'Connor and Arnold (1973), Wells (2006), and Cruttenden (1997). Findings indicate that expressions in British English with two or three tone phrases often correspond to a single tone phrase in Popular Nigerian English. This occurs because the nucleus does not carry distinctive stress, and the rise may appear at the tail rather than the final stressed syllable of the tone group.

Keywords: *Intonation, Rising Tone, Nucleus, British English, Nigerian English*

1. Introduction

It is interesting to note that although English is a common language spoken across the world, it has varieties that don't seem to originate from a common source. It is true that as the language moves across geographical, linguistic and cultural borders, it is subjected to series of modifications in order to enable it fit in its new environment, thereby resulting in the rise of different varieties of English language; and to a large extent, intonation is one of the affected areas. Intonation is one major marker of English varieties rarely noticeable or attended to, especially by non-native speakers. Amayo (1981) in Atoye (2005) has argued that the supra-segmental features, of which intonation is a major component, are generally more elusive than the segmental and are therefore more inherently difficult to learn for foreign learners.

The strange intonation patterns of some English varieties sometimes make them sound almost entirely like a different language; which is why O'Connor and Arnold (1973: 1) would say it "gives rise to difficulty in communication". Tiffen (1974) points out that in Indian English

The division of speech into sentence groups and tone groups is sometimes faulty, and pauses are made at wrong places. The location of the intonation nucleus is not always at the place where it would be in normal English. The rising tone sometimes used at the end of statements must sound unusual to the RP-speaking listeners.

Nigerian English does not seem to have the potential to eventually cross the intonation hurdle identified by Banjo (1976). With this in mind, it is important that special notice is taken of the intonation (and intonation phrase) of the different English varieties.

The RP has its unique intonation pattern which is largely used as a standard in the study of other English intonation variations of which Nigerian English intonation is one. The different patterns of intonation have been identified with certain functional affiliations so that intonation contours can now be regarded with special importance. O'Connor and Arnold (1973: 2) examine the general effect of intonation in the English speaking community and note that every intonation pattern in English (RP) has a meaning attached to it. The examples given in this research of some of the tone groups they identify can be used in statements, WH-questions, yes-no questions, commands and interjections. In their presentation, O'Connor and Arnold make it clear that through the intonation used during a conversation, one can differentiate when a question is commanding and requiring an answer from when a question is rhetoric or friendly. Their presentation shows that the rising tone has different levels of rising according to the impression they are intended to create. A tone group may start to rise from a very low pitch or a pitch somewhere at a mid-range; and the rise may span across two or more words, even across an entire tone phrase.

2. Intonation

Roach (1983:150-152) is of the opinion that intonation cannot be satisfactorily defined, but that "any attempt at a definition must recognise that the pitch of the voice plays the most important part". He says that the word *yes* can be said with the pitch at a constant level or changing from one level to another. He describes pitch in terms of high and low and recognizes the changing nature of certain tones. In looking for linguistically significant aspects of speech, he says we must always be looking for contrasts which inform the need to talk about the use of rising or falling tone in conversations. He identifies three levels of tones; rise, fall, and level tones. Cruttenden (1997) observes that intonation has recurring pitch patterns each of which is to some degree consistently identified with a particular meaning in a word or group of words.

2.1. What is tone?

In talking about tones, it is important to take a brief look at what tone as a part of speech activity is. It refers to the distinctive type of sound produced during a conversation including fluctuation of pitch. In analysing poetry for instance, tone plays a vital role in that it helps the reader to decipher the persona's mood. Words are said with certain tonal property to reveal certain attitudinal reality. That is why it becomes necessary to analyse a person's use of tone during communication. Communication is more effective when tone forms a major part of what determines the meaning of an utterance. Though facial expression undoubtedly contributes to the meaning of an utterance, a hearer may not see the face of the speaker, and the speaker may decide to put on a countenance that does not correspond to the tone used, maybe just to be polite.

The disparity in the use of tones between syllable timed languages and stress timed languages is an important aspect of this discussion. The syllable timed languages are also called tone languages. They are so called because words are differentiated with the use of tones; for instance *obe* (Yoruba) when said with the primary stress on the first syllable refers to soup, whereas when the second syllable carries the primary stress, it refers to knife. A non-tone language like English operates differently in the sense that tones may be used to express attitude but not to give a completely different meaning to a word. For instance *to/day*

and *to\day* are said with different tones but the meaning remains the same. The first one has a rise on the second syllable making it sound like a question, and the second one has a falling tone. Mother-tongue influence is a major problem to a Nigerian learning of English, and therefore a pointer to the fact that problems may occur in PNE use of the English tones.

2.2. The Tone Phrase/Group

The tone phrase is basically divided into pre-head, head, nucleus and tail as presented by O'Connor and Arnold (1973), Gimson (1980) and Wells (2006); where the nucleus stands as the obligatory element. The pre-head and the tail are theoretically expected to consist only of unstressed syllables, and the head and nucleus to begin with stressed syllables. But it appears that Nigerians do not adequately exploit the alternating positioning of strong and weak syllables, resulting in almost complete neglect of eurhythmy. This anomaly extensively distorts a valid realisation of tone group in Nigerian English and consequently blurs the position of the nuclear tone expected to bear the rising tone. Though the nuclear tone is eventually not hiding, it is sometimes difficult to ascertain where the rising is to begin since it is clear that the rising nuclear tone usually occurs on the final stressed syllable in the tone group.

A tone phrase must not have all the four constituents to be complete. In a mono-syllabic phrase, only the nucleus is present. If there are only two stressed syllables in a tone phrase, the first would introduce the head and the second would be the nucleus. Where there are more than two syllables, all the other stressed syllables form part of the head.

Example: The bold letters are the stressed syllables. I. The **dress** is **beautiful**.

II. **Today** is my **mother's birthday**.

In **I** above, *dress* represents the head and *beau-* represents the nucleus of the entire phrase. In **II**, *day* introduces the head (Wells, 2006 calls it onset) with *mo-* forming part, and *birth* represents the nucleus. The unstressed syllables or words at the beginning and end of the phrases (the, to-, -ful and day) form the pre-head and tail respectively.

2.3. Nuclear tone

Within every tone phrase, there is always one word that is particularly important for the meaning of the phrase; that becomes or bears the nuclear tone. Gimson (1980) divides nuclear tones into *falling nuclear tones*, *rising nuclear tones*, *falling-rising nuclear tones*, *rising-falling nuclear tones* and *level nuclear tones*. He describes the rising nuclear tones as involving a rise from low to mid, or from low or mid to high. The tone is termed **low rise** if it ends at midpoint and it is termed **high rise** if it ends at a point above mid-level. This is an indication that not all rising tones end at the same height. O'Connor and Arnold (1973) describes rising tone in terms of take-off, high bounce, low bounce and high dive all indicating the level of **initial and final height** i.e. where the rise begins and where it ends. The rising nuclear tones are more perceptible when they occur on a syllable containing a long vowel or diphthong or a voiced continuant consonant. Gimson gives the following examples:

/No ICan you /see me? He's not /ill.

3. Methodology

The researchers gave out utterances taken from O'Connor and Arnold (1973), and Cruttenden (2008) to fifty educated Nigerians chosen from different language backgrounds. While they read the utterances, the researchers examined how they marked the end of the tone phrases and how the rising tone is realised in the phrases. The responses were recorded and analysed using Praat phonetics software. The researchers also listened to spontaneous discussions of people in a group or on the street, and took note of how they realise the rising nucleus, whether they used the falling tone where in RP the rising tone would be used. The pattern of the rising tone in the tone phrase used by the respondents and the relationship between the nucleus and the other parts of the tone phrase is also observed.

3.1. Methods of Transcription

The researchers employed both tonetic marks and the interlinear method of transcription in this research. However, the use of the interlinear method of transcription is more because of its explicitness; at a glance, one can understand how intonation is used in the intonation phrase used as examples in this paper. The dots indicate the height and accent of the tone. The large dots show that the syllable under or atop which it is placed is accented. The small dots mark unaccented syllables. The closer the dots to the top line, the higher the voice. In other to show how the occurrence of strong and weak syllables may affect the choice of the nuclear tone and the pattern of the rise on it, Phonetic transcription is added.

4. Research Questions

This research answers the following questions:

- i. How does the rising tone in NE show the end of a tone phrase?
- ii. How frequent does the rising tone occur in Popular Nigerian English (English spoken by more-or-less educated Nigerians)?
- iii. To what extent can the rising nucleus in Nigerian English be said to differ from that of RP?
- iv. To what extent can the positioning of the rising nucleus in Popular Nigerian English pose communication problems (mild or serious) in international communication?

5. Determining the Tone Phrase

Diagrams 1 to 4 below are recorded utterances of British English accent extracted from Wells (2006) and analysed by the researchers to show how an utterance can be divided into tone phrases by identifying the nuclear tone according to the speaker's impression. The blue (for coloured print), darker, lower or broken lines indicate the pitch fluctuation, while the green (for coloured print), faint, upper and unbroken lines indicate the intensity of the sound. From these pictures, the nuclear tone is indicated by a gliding tone, either upward or downward. The picture of the wave is to show the relationship between the wave pattern of the word and the voice fluctuation in the utterance.

Figure 1

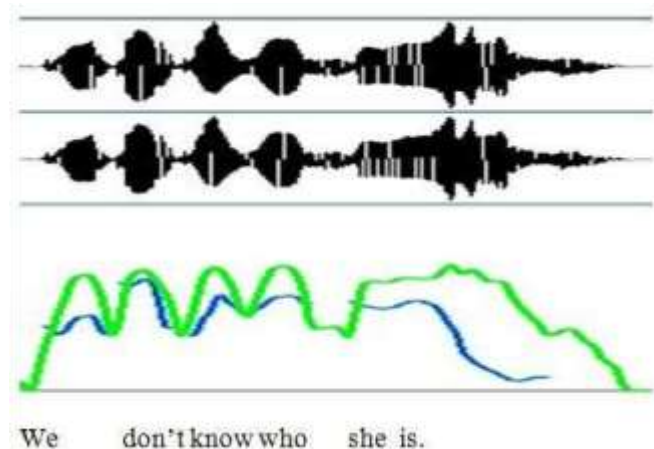


Figure 1 shows only one tone phrase in the given utterance, with the nuclear tone placed on *is*, and ends with a fall. (low fall). It shows a fairly corresponding fluctuation of pitch and intensity.

Figure 2

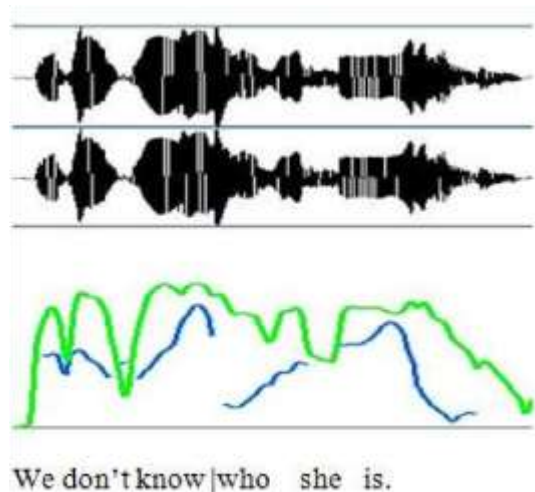


Figure 2 is slightly different from figure 1. The utterance is broken into two tone phrases as indicated by the tone phrase boundary marker placed between *know* and *who*. The nucleus (which is falling) of the first phrase is placed on *know* while the nucleus (also falling) of the second phrase is on *is*. The two highest pitch levels indicate the nuclear positions in the utterance.

Figure 3

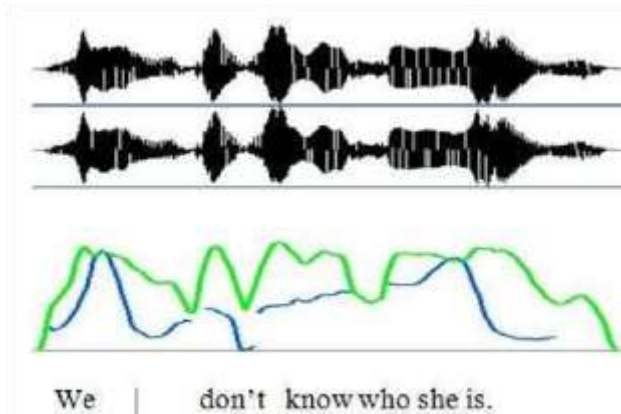


Figure 3 shows two tone phrases. The first nucleus is placed on *we* and the second is placed on *is*.

Figure 4

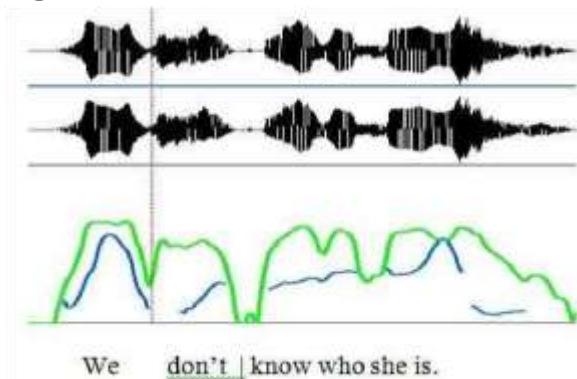
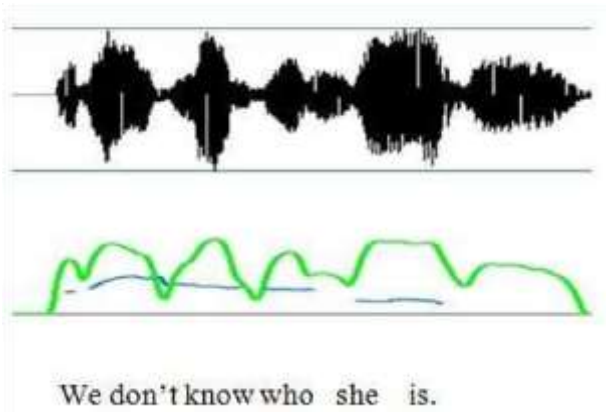


Figure 4 shows that the utterance is made up of two nuclear tones. The first is on *don't* and the second on *is*. Although the nuclear tone of the first tone phrase does not have the highest pitch level, it is the last stressed syllable.

Figure 5



In PNE, pitch fluctuation of the BE kind is hardly realisable. Not minding what the speaker intends to achieve, this utterance would always be said as only one tone phrase and the nuclear tone most likely placed on *is* which is the last accented word in the phrase. Jowitt

(2000), after analysing the utterance made by his Nigerian subjects, said that “the OCA utterance has more than one nucleus while the informants produced only one” (OCA represents a statement from O’Connor and Arnold 1973). Very importantly, it is notable that there is no significant pitch variation shown in the PNE utterance. The pitch indicator in figure 5 is almost just flat and hardly rises to mid-level as opposed to the BE pitch fluctuation that rises even above mid-level. From the diagram showing the PNE variety, it would be difficult to examine the occurrence of the nuclear tone in the utterance.

6. Tone Group and the Rising Nucleus in Nigerian English

The tone group in Nigerian English is observed in some respect to be clearly different from that of British English. One of such areas is in determining the head and nucleus of a tone phrase. There is sometimes a shift of stress from one syllable to another not necessarily based on any peculiar emotional or semantic interest. That is to say that in a tone phrase, the position of the nuclear tone in the two varieties of English may be different, but the meaning is supposedly not affected; however, inter-variety communication could be disrupted. Example:

BE: What’s /wrong with it?

PNE: What’s wrong with \it?

The example above shows that in BE, the nucleus is placed on *wrong*; but in PNE, it is placed on *it* and changed to falling tone. As mentioned earlier, the PNE tone variation is not in any way intended to create any special effect, or to modify the meaning of the expression; it is only indicating that the different tonal structures are peculiar features of the different varieties.

BE /jə kəd əv traɪd/ You could have tried.



PNE /ju: kud hav traɪd/

You could have tried.



The above examples show the pre-nuclear part of the tone phrase. In PNE, all the syllables are stressed, making it difficult to differentiate between the pre-nuclear tones and the nuclear tone. The nucleus indicated in the BE utterance is rising but the final accented tone in the PNE utterance, assumed to be the nucleus, is falling.

7. Nuclear Rise in Nigerian English

Generally, nuclear rise appears to be highly disregarded in PNE except if the nucleus comes at the end of the phrase, or it may be more accommodating to say that the nuclear positioning in this case is obscure. In RP, the rise may start on the nucleus and extend to the tail. In Nigerian English, even in one-word statement like *chicken*, though the nucleus is not the final syllable, the rise (with the tone movement) could occur on the final syllable.

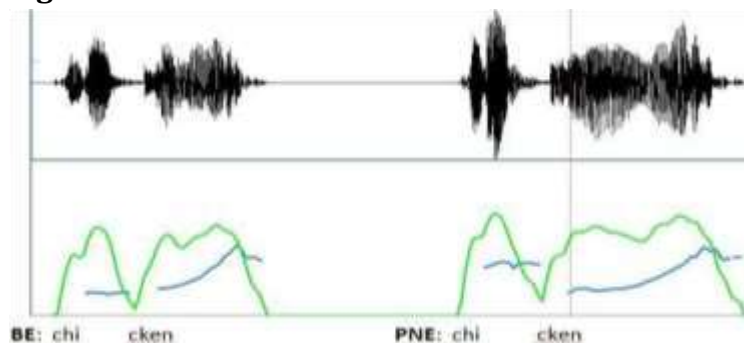
A: Will you eat *chi/cken*?

B: *Chi/cken*?

In RP, *chicken* would have the rising nucleus placed on *chi*- whereby *-cken* becomes the tail. The pitch of the final syllable is usually higher than that of the penultimate syllable no matter where the rise begins. In PNE, there is a drop down after the nucleus, then the rise. There is effort to retain the original stress pattern of the word as if it is said in isolation; but because it is a yes/no question, the rising end becomes essential. Therefore, the pitch is brought low and then it lengthens and glides upward. That requires more energy than the simple continuation of pitch in one direction, meaning that there is no economy of time or energy in the Nigerian use of the rising tone. And if it were a hard and fast rule that the nuclear tone should always have a movement or glide, then the nuclear tone would be placed on the second syllable rather than the first (especially also because it is more lengthened than in BE), implying that there is no tail, and that the BE nucleus becomes pre-nucleic in PNE.

The diagram bellow shows the difference between the BE and PNE pronunciation of *chicken*. The unbroken lines show the intensity of the sound produced.

Figure 6:



7. 1. The Take-off Table I

Question	Respondents' response	Rising tone	Falling tone
Mary said \Maisie was going to play.	Did she play, in fact? (But did she play?)	50	0
I \said I'd \call for him.	Are you going to call for him?	50	0
You can \leave at \once.	Can I?	50	0
I'll \sing you my \song.	Must you?	50	0

The above table shows that in yes/no questions, PNE recognises only the rising tone; that is the falling nucleus rarely occurs. 100 per cent of the people observed used the rising tone to ask yes/no questions. The response *Did she play, in fact?* sounds quite un-Nigerian; it would rather be *But did she play?*. However, the rising tone is still maintained.

PNE **RP**
 /a ju: goin tu kɔ:l fɔ: him/ /a: jə goɪŋ tə kɔ:l fə hɪm/ Are you going to call for him? Are you going to call for him?


 /mɒst ju:/ /mæst ju:/ Must you? Must you?


 In PNE, *Really* and *seriously* would be said using the rising tone if they express surprise.
 /ri:li:/ /riəlɪ/ Really! Really!


 /si:riɪsli:/ /siəriəsɪ/ Seriously! Seriously!

It is noticeable that the patterns of nuclear rising are not the same in the two varieties. In RP, the nuclear rise is placed on *real-*. In PNE the nucleus moves to the second syllable, *-ly*, which has a moving tone and is more lengthened than in RP. The first syllable has a higher pitch than the second (but the intensity is not significantly different), which is not the case in RP. *Seriously* has the highest pitch level on the initial syllable. Though the rise is on the final syllable, it is not more highly pitched or accented than the penultimate syllable. In PNE, the final syllable should then be regarded as the nuclear tone, and not the initial syllable as in BE.

7.2 HIGH-RISE

The high-rise is a commonly used tone in RP. The following examples by Gimson, and Arnold and O'Connor explain it.

- (He's completely irresponsible.)

/wɒt dɪd jə sei/

/What did you say?



ii. (Her name was Janet before she got married.)

/wɒt dɪd jə sei ʃi: wəs kɒld/

/What did you say she was called?



iii. (I couldn't \do it.)

/je kudnt du it/

You couldn't /do it?



PNE may be said to completely avoid using the high-rise. The expressions above would always take the falling tone not minding whatever meaning it carries. If expressing surprise rather than asking for a repeat, (i) above will be said with a low-rise tone on the nuclear syllable, *say*. However *what* will be as high as or higher than the end of the rise at the end of the statement. And the rise does not get as high as that of the RP. While in RP, the beginning of the rise is at mid-level and the end at high; in PNE the rise is low, and it ends at mid-level, and applied on the final syllable only.

PNE

/wɒt dɪd ju: se/

What did you say?



/wɒt dɪd ju: se ʃi: wəs kɒld/

What did you say she was called?



In a shorter phrase of about one or two syllables, the high rise may be used to show the intensity of surprise; or it may only be an idiosyncratic variation. For example:

A: Did you hear of John's death?

B: What?

●

A: Just today.
B: Today?

● ●

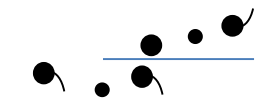
7.3. LOW RISE

In RP, the low-rise explains a rise of tone from a very low level to somewhere around midlevel. Though the low rise is the most common, its realization is to a large extent not the same in PNE where it may be changed to a falling tone.

Example:

John: How many cigarettes have you got?

RP	PNE
Paul: <u>Two, I think.</u>	Two, I think.



And where the rise is used, it is not stretched over all the syllables. The first part takes the falling tone but the second part may take the low rise. Notably, the tone phrase is eventually broken into two because of the use of two moving tones whether rising or falling or both. The first phrase is *two* and the second phrase is *I think*.

John: I've only got two pounds.

BE	PNE
Paul: <u>Two, did you say?</u>	Two, did you say.



This structure is not a common one in PNE. It looks okay that in BE, the above is said as one phrase; but in PNE, the utterance is made of two phrases. The first is a falling tone, while the second is a rising tone. A more convenient way a Nigerian would ask a question is shown below. The head could begin with *you*, so that *did* becomes the pre-head and *two* becomes the nucleus.

/did ju: se tu: /

Did you say two?



8. Nucleus and Tail

No matter how long or how short a word group is, the ending is expected to conform to one of the seven tunes given by Arnold. We have noticed earlier that it is not easy to separate accented words from non-

accented ones in PNE, but then, there is a level of differences in prominence between syllables – not necessarily as found in RP.

Low Rise Ending

/wəd jə laɪk tə kʌm tə ðə θiətə wɪə s/

RP Would you like to come to the theatre with us?



/wʊd ju: laɪk tu kɒm tu ði θiætə wiə ds/ **PNE** Would you like to come to the theatre with us?



In RP, the rise begins on the first syllable of *theatre*, starting very low. In PNE, the nuclear syllable is not brought so low. Instead, it gives a U shape from *theatre*. *Us* is said long with an upward glide that ends at a level close to that which begins *theatre*. Right from the beginning of the phrase, there is the problem of alternation of weak and strong sounds. We can see that two or more strong syllables can occur together in an unbroken sequence. So the nucleus and tail are both accented and the rise occurs on the last two syllables only, leaving out the nucleus after which there is a dropdown.

9. The Rising Head and the Nucleus

RP allows a steady rise from the head right through to the tail. The first syllable has a low pitch which gradually goes higher. PNE does not recognise a constant rise from the head to the nucleus and to the tail. It sounds very abnormal to Nigerians when that happens. Therefore there is no such rise, and the end is a low fall and not the high fall that is a result of the constant rise. When there is a nucleus and tail, the tail may have a rise that is not linked to the nucleus. However in PNE, *theatre* is sometimes stressed on the first syllable.

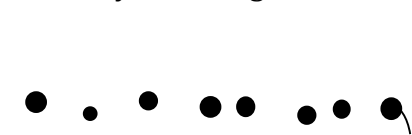
/hau dɪd jə mænɪdʒ tə du: ðæt/

RP: How did you manage to do that?



/hau dɪd ju: mænɪdʒ tu du: ðæt/

PNE: How did you manage to do that?



/dəʊnt peɪ hɪm/

Don't pay him



/dɒnt peɪ hɪm/

Don't pay him



In *don't pay him*, the supposed nuclear syllable is not as highly pitched as the head, and it does not seem to be more stressed. Therefore, it is a difficult task to attempt to apply the general concept of nuclear tone on PNE utterances.

The first sentence is said with constant rising from the head and then there is a fall at the last syllable which is accented. PNE does not recognise such regular rise. The tone fluctuates around the mid-level, not going very low or very high.

In RP the rise stops at the nuclear syllable where it falls to the tail. In the second sentence, PNE shows a fall right from the head to the tail without recognising the tonal importance of the nucleus.

A sentence like the one below could be said in RP with a low pre-head, and the head rises from the same level as the pre-head. PNE would say the same sentences almost never using a rising tone. The head is said higher than the pre-head, which is not as low as in RP before it falls. In contrast to the low rising head, PNE uses a low falling head.

RP /jə kəd əv traɪd/ You could have tried.



PNE /ju: kud hav traɪd/
You could have tried.



Conclusion

It is clear that in PNE the placement of nuclear rise does not seem to conform to any specific rule for determining a nuclear tone. The prominent guide to nuclear tone placement revealed through this research could basically be *stress* and *tone movement*. It is not safe to depend more on stress as both function and content words could be stressed in PNE. Notably, one very worrisome matter about the PNE intonation is the criteria for establishing the Nuclear tone in any tone phrase owing to the fact that unstressed syllables in BE are usually stressed in PNE. It is important, then, that in the study of PNE intonation, all aspects of intonation should be considered: accent, vowel quality and pitch, most especially. Where only one aspect is focused on, it is unlikely that the research process would lead to a reliable result.

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