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# The various rising tones in Newcastle English: a phonological distinction?

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## Résumé

*L'anglais de Newcastle est caractérisé par l'utilisation de contours ascendants comme contours par défaut, l'anglais du Tyneside faisant partie en tant que tel des variétés présentant une intonation appelée UNBI (Urban Northern British Intonation), typique des grands centres urbains du Nord de la Grande Bretagne. Une étude précédente sur l'anglais de Newcastle réalisée sur le corpus NECTE a permis de distinguer deux grands types de contours montants : les montées simples ou montées-plateau d'une part, et les montées par paliers, d'autre part. Dans cette étude, nous faisons l'hypothèse que la différence entre ces deux types de contours montants est une distinction phonologique plutôt que phonétique, ce qui signifie que chaque type de montée aurait une fonction spécifique. Nous avons testé cette hypothèse en réalisant une étude pilote basée sur une expérience de perception. Le test ne montre pas de différence phonologique claire entre les deux contours, mais confirme que l'anglais de Newcastle appartient au groupe UNBI. Les résultats du test nous conduisent à une autre hypothèse, à savoir que l'un de nos contours montants serait en fait un contour connu sous le nom de HRT (High Rising Terminal ou Uptalk). HRT a en effet commencé à se diffuser à travers les variétés UNBI, et ce serait le cas à Newcastle, où l'on trouverait une cohabitation entre les deux intonations. Si cela s'avérait exact, on pourrait alors dire qu'il existe bien une distinction phonologique entre les deux types de montées puisqu'il a été démontré que les HRT ont des fonctions interactionnelles.*

**Mots-clés :** anglais de Newcastle, intonation montante, UNBI, HRT, variation.

## Abstract

*It is acknowledged in the literature that Newcastle English is characterised by the use of rising tones as the default tone, Tyneside English being part as such of those varieties displaying a typical Urban Northern British Intonation (UNBI). A previous study on Newcastle English performed on the NECTE corpus allowed to make out two main types of rises: simple rises or rise-plateaus on the one hand, and up-stepped level tones on the other hand. In this study we hypothesise that the difference between these two types of rises is a phonological rather than a phonetic distinction, meaning that each type of rise has a specific function. We tested this hypothesis by carrying out a pilot study based on a perception experiment. The test fails to show a clear phonological difference between the two types of rises but confirms that Newcastle English belongs to the UNBI group. The results of the test lead us towards another hypothesis, namely that one of our rising contours would actually be a contour known as HRT (High Rising Terminal or Uptalk). HRT has indeed begun to spread through UNBI varieties, and this would be the case in Newcastle, where there would be a coexistence between the two intonations. If this were to be the case, then it could be said that there is a phonological distinction between the two types of rises since it has been demonstrated that HRTs have interactional functions.*

**Key words:** Tyneside English, rising intonation, UNBI, HRT, variation.

## **1. Introduction**

It is acknowledged in the literature that Newcastle English is characterised by the use of rising tones as the default tone (Pellowe & Jones 1978, Local 1986, Grabe *et al.* 2000, Grabe *et al.* 2008), Tyneside English being part as such of those varieties displaying a typical Urban Northern British Intonation (UNBI) (Cruttenden 1997, 2001, 2007, Wilhelm 2015b). A close study of the intonation of Newcastle English (Leonarduzzi & Herment 2015) was performed on the NECTE corpus ([www.ncl.ac.uk/necte](http://www.ncl.ac.uk/necte)) and showed that there are two main types of rises in Newcastle English: rises or rise plateaus (depending on the number of post-nuclear syllables) on the one hand and up-stepped level tones on the other hand. In this context two possibilities arise at first sight: either the distinction between the two types of rises is phonetic, based on social class or age groups for example, or it is phonological and has a distinctive function. The aim of this paper is to test the second hypothesis. We extracted sentences displaying the two prosodies from the NECTE corpus (Allen *et al.* 2007) and from the IViE corpus (Grabe 2004) and built a perception experiment.

In the first part of this paper we will briefly present the intonational specificities of reference English, which displays falling intonation as the neutral terminal tone, as well as the UNBI variety and the HRT phenomenon, which both display characteristic rising intonation. The second part will focus on the main features of Tyneside prosody, and especially on the two types of rises that can be distinguished. The third part covers the pilot study (the perception experiment) whose aim is to test whether the distinction between these two types of rises can be considered as phonologically different.

## **2. RP intonation, UNBI and HRT**

### **2.1. Reference accent (RP/SBE/NRP/BRP/GB): an overview**

An accent, or rather a variety, stands out in Great Britain as the reference accent, namely RP, for Received Pronunciation. The term was first used by the phonetician and dialectologist A.J. Ellis in his 1869 book. RP is not a geographical variety, but a social one, spoken by upper class people usually educated in English public schools (Wells 1982), making RP sometimes referred to as the prestige accent. Traditionally, 'received' means that this is a way of pronouncing which is received or accepted in good society. The term RP is problematic, due to the social connotations it has, and has been replaced by other terms such as BBC English or Queen's English, which are no longer considered as valid nowadays. The BBC now employs broadcasters with various varieties and Queen's English covers social values too. SBE, for Southern British English, has also been used to refer to a reference accent, but the geographical association suggested by the term is not satisfactory either. Nowadays, RP is less and less considered to be a pattern to follow, especially because of all the social connotations it has and is therefore much less prestigious. Despite these considerations and although it is spoken by a minority of people in Great Britain (less than 3% of the population according to Moore 2015: 93), this variety of English has been widely studied and is still taken as the reference accent when dealing with varieties of English, or when teaching English as a foreign language (EFL). Cruttenden (2014) in the latest edition of *Gimson's Pronunciation of English* neglects the term RP for GB, General British (the counterpart of GA, General American). Other authors choose NRP (Non Regional Pronunciation, Collins & Mees 2013) or BRP (British Reference Pronunciation, Moore 2015). In this paper, we shall keep the term RP and we shall use this variety as a reference for our analysis of Newcastle English.

#### **2.1.1. Background: the British school of intonation**

Various systems describing English intonation were developed but took different paths in Europe and North America. The British descriptions of intonation are based on a configurational approach using the tone unit as the main constituent and defined as a complete coherent intonation contour. A tone unit comprises at least one syllable, necessarily the nuclear syllable. The melodic movement starts on the nucleus and spreads on the post-nuclear syllables, if any. Pre-nuclear syllables form the head of the tone unit (see Crystal 1969 or Gussenhoven 2004 for details). Fall, rise, rise-fall and fall-rise are the melodic movements commonly used to describe intonation in the British tradition (with a few variants according to authors). While the British intonation system refers to the form of the global contour, the American description system (see Pierrehumbert 1980) defines tonal targets to describe melodic accents. In this paper, we will stick to the British tradition (following amongst others Halliday 1967 or Cruttenden 1997, 2014).

### 2.1.2. RP intonation system

Basic functions of intonation contours have largely been described in RP. Falling contours are usually associated with the idea of finality and completeness whereas rises are associated with continuity. Hence, neutral complete statements are usually pronounced with a fall, whereas non-final clauses are usually pronounced with a rise. For example, in the sentence *what we will be seeing very shortly / on April 1st to be precise / is the advent of all sorts of changes within the NHS* (Herment & Leonarduzzi 2012), the first two clauses are pronounced with a rise and the last one with a fall (the slashes correspond to tone unit boundaries and the underlined syllables are the nuclear syllables). Falls are also typically found in WH-questions (e.g. *What do you want for your birthday?*, Wells 2006) whereas yes-no questions are usually pronounced with a rise (e.g. *Have you decided to buy it?*, Wells 2006).

As for complex contours, fall-rises can have different functions. They can be associated with continuity (along with simple rises) as in initial adverbial phrases for example. Fall-rises can also be associated with some implication (“implicational fall-rise”): “the speaker implies something without necessarily putting it into words” (Wells 2006: 27) (e.g. *Who's that? / Well I know her face FR*, Wells 2006). Fall-rises can also be used to express a contrast (Cruttenden 1997, Tench 1996) or to draw attention on what is being said (Brazil 1997, Gussenhoven 2004) as in the following example: *what happened is uh FR / they caught her without a licence F* (Herment & Leonarduzzi 2012). Rise-falls are less common in RP and they can express some surprise or irony (e.g. *Why do you do it?*, Roach 2009).

## 2.2. Urban Northern British Intonation (UNBI)

### 2.2.1. Rising terminal intonations

In the large Northern cities of Great Britain, a typical intonation known as UNBI for Urban Northern British Intonation is heard by speakers of all ages and all social backgrounds. Cruttenden (1994) describes a rising terminal intonation as the default intonation for complete sentences in Northern urban areas: Belfast (see Jarman & Cruttenden 1976), Derry (McElholm 1986), Glasgow (Mayo *et al.* 1997, Cruttenden 2007), Newcastle (Pellowe & Jones 1978), Liverpool (Nance *et al.* 2015), Manchester (Cruttenden 2001), Leeds (Wilhelm 2011) and Birmingham (Cruttenden 1994). This rising intonation heard at the end of sentences and also in WH-questions for example, is part of the intonation system for Northern speakers. In a study of the variety of English spoken in the North of Ireland, Turcsan & Herment (2015) also show that this rising terminal intonation is part of the system:

*So the other one was like having a guard dog* (Sound file 1)

*Where did you go?* (Sound file 2)

A few phonetic variants can be found, especially concerning the alignment of the rise, but the most important point is that this is a systematic, therefore systemic rise: it is part of the intonational system of the speakers.

### 2.2.2. Origins of the rising intonation

A few authors addressed the question of the origins of this rising intonation. Cruttenden's hypothesis (1997) is that of the geographical diffusion: UNBI would have a Celtic origin and the consecutive waves of Irish immigration would have played a major role in diffusing the rising intonation (probably transferred from the Irish substrate, see Dalton & Ní Chasaide 2007). Figure 1 (Wilhelm 2015b) shows Cruttenden's hypothesis according to which UNBI would have spread from the North of Ireland to Glasgow and Liverpool first, and then to Manchester. However, the case of Newcastle is problematic: there was far less Irish immigration in this region and the use of rising patterns at the end of sentences was reported as early as the 18<sup>th</sup> Century, that is, before the Irish immigration waves (Cruttenden 1994).



Figure 1. Irish immigration waves and UNBI diffusion (from Wilhelm 2015b)

Another hypothesis is that formulated by Hirst (2009): UNBI would have a Scandinavian origin and would date back to the end of the 8<sup>th</sup> Century with the Vikings' migration waves. In the second half of the 9<sup>th</sup> Century, the East coast of England was first invaded and then so was the West coast from 900 (Fennell 2001). Figure 2 (Wilhelm 2015b) shows the zones where the Vikings settled in the British Isles. The increasing presence of Scandinavians has had a long-lasting influence on the language spoken in the North of England, not only on the intonation system as Hirst presumes. Some innovations brought by the Scandinavians are present in today's English, such as the pronouns *they*, *their*, *them* to give but one example.

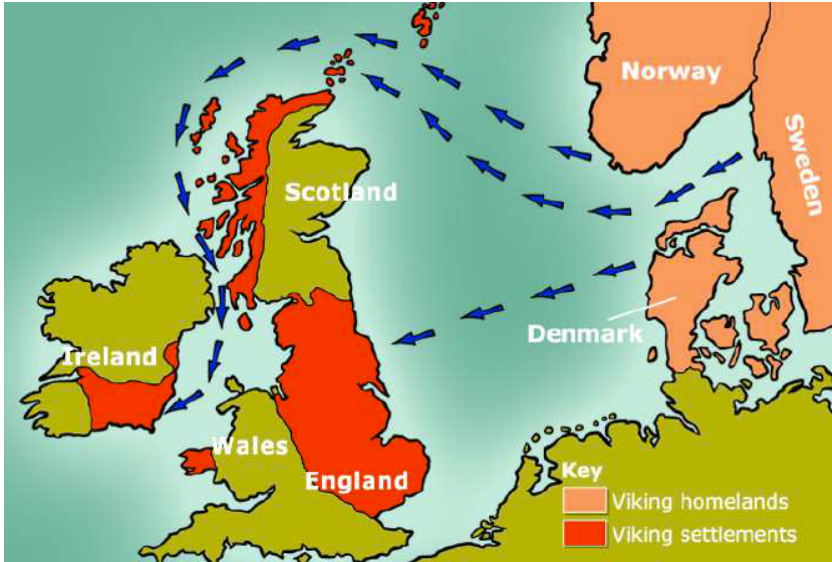


Figure 2. Vikings' invasion in the British Isles (from Wilhelm 2015b).

### 2.2.3. Linguistic South-North division and intonational hybridation

Today the South-North division in England is somewhat relative. A study in perceptual dialectology by Montgomery (2006) about the North-South border shows that the lines drawn by more than 100 informants cover a 200-km zone.

Linguistically, it is admitted that the only features common to all Northern varieties are the absence of contrast between the vowels of FOOT and STRUT, and between those of BATH and TRAP (figure 3).



Figure 3. Isoglosses for the North of England (Chambers & Trudgill 1998)

The use of the terminal rising contour in declarative sentences is not a distinctive feature for the South-North distinction. This might be due to the fact that this feature is still seen as an urban characteristic. Another reason might be cases of hybridation. Indeed the rising terminal contours, although described as systemic in the Northern urban varieties of English, are not systematic for all

speakers. Cases of hybridation between the two systems RP and UNBI are reported in the literature. Cruttenden (1997) mentions bi-intonational speakers who alternate between rises and falls in declarative sentences. Those speakers will pronounce a declarative either with a fall or a rise, the criteria for choosing between a rise and a fall being unknown to the best of our knowledge. It could be random, or depend on the context, on the situation of interaction, on the co-speaker, or maybe on yet other factors.

#### **2.2.4. Phonetic form**

UNBI is characterised by rises at the end of declarative utterances, in which we would expect a fall in RP. This rising tone has actually become the default tone in such a context (Cruttenden 2007).

Wilhelm (2015b) describes five types of rise commonly found at the end of declaratives in UNBI: 1) the low rise, 2) the rise-slump, 3) the rise plateau, 4) the rise-plateau slump and 5) the high plateau. There can be geographical variations of these tones but they form one global system. Another three tones can be added, the rise-fall, the drop and the high rise, in non-final statements and questions.

### **2.3. High Rising Terminals (HRT)**

HRT (also known as ‘uptalk’, see Warren 2016) is the use of a rising intonation where a fall would be expected, that is at the end of declarative sentences, exactly as in UNBI. The main difference between the two is that unlike UNBI, HRT is not systematic, it is not the default tone, it results in a choice from the speaker (see Guy *et al.* 1986, Cruttenden 1994, Bradford 1997, Ladd 2008). It is therefore often referred to as a stylistic use, and not a systemic use. Wilhelm (2015a) explains that even though there may be possible confusion between UNBI and HRT, the two contours can be distinguished as far as two aspects are concerned:

- they display phonetic dissimilarities (see 2.3.3);
- HRTs are functional and are used for pragmatic purposes (see 2.3.2 below).

#### **2.3.1. Origins**

HRT was first reported in Australia and New Zealand in the second half of the 19<sup>th</sup> Century (see Mitchell & Delbridge 1965, Benton 1966, Mac Gregor 1980, Guy & Vonwiller 1984, Guy *et al.* 1986, Allan 1990, Britain & Newman 1992, Britain 1998) then in North America (the Pacific rim) at the end of the 19<sup>th</sup> Century (see amongst others Ching 1982, Arvaniti & Garding 2007, Ritchart & Arvaniti 2014 for the USA and Shokeir 2008 or James *et al.* 1988 for Canada), and is now spreading in Great Britain as well (Cruttenden 1986, Ladd 2008).

#### **2.3.2. Interactional functions**

Most authors agree that HRTs have interactional functions but disagree about those functions. For instance while Lakoff (1975) or Eckert (1989) see HRTs as markers of deference or doubt, Warren & Britain (2000) see the rising tones as signalling a form of domination in the interaction.

In a study of Canadian English, Rodrigues Da Mota & Herment (2016) distinguish three main interactional functions for HRT:

- Making sure the other speaker understands properly. In these cases, HRTs can be paraphrased by ‘are you following me?’, ‘you know?’, ‘you know what I mean?’, ‘okay?’. Guy & Vonwiller (1984) and Hirschberg & Ward (1995) also acknowledge this function for HRT.
- Showing speaker’s uncertainty: when using HRT, the speakers seem to integrate a question in a declarative clause, enabling them to add uncertainty to what they are saying. This can also be linked to linguistic insecurity (Labov 1972).

- Taking distance towards another person's words in reported speech: when a speaker reports the words of someone else, the rising intonation seems to be justified by the will to take some distance towards what is being reported, as if the speaker wanted to show that they do not adhere to the words they are reporting.

In his book dedicated to uptalk, Warren (2016) admits that the interpretation of uptalk is subject to tensions. There are probably differences in function between for instance Antipodean uptalk and American uptalk. Warren summarises the interactional functions of uptalk as such: “it is used for checking and for seeking feedback [...]. It is used to mark new information and to invite the listener to make links between information being conveyed and their existing beliefs. It asks ‘Are you following me?’. It shares rather than tells.” (Warren 2016: 68).

Finally, what is clear is that the interactional functions of HRTs are central.

### 2.3.3. Phonetic form

In his *Language Log*, Liberman (2008) suggests that like the functions, the forms of HRT vary according to the variety of English as is confirmed by the fact that “there is little agreement concerning the shape of uptalk” (Warren 2016: 31). Warren (2016) compared the form of uptalk to that of rising patterns in questions and concluded that even if a lot of variation is found, a general observation is that the average pitch levels of uptalk are lower, the rise starts later and from a lower level, this resulting in a more dramatic rising pattern for uptalk than for questions. Figure 4 below (which shows a PRAAT window, Boersma & Weenink 2001) is an illustration of these observations: the sentence (spoken by a Canadian speaker) has a rather flat prenuclear contour and a sharp rise beginning after the nuclear syllable (To-), which is itself uttered on a low flat tone.

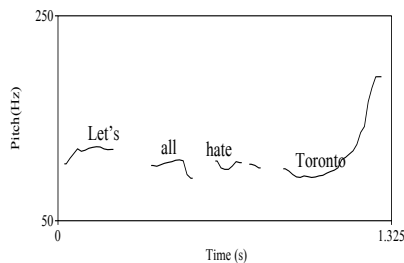


Figure 4. HRT on the sentence *Let's all hate Toronto* (from Rodrigues Da Mota & Herment 2016): sound file 3

## 3. The case of Tyneside English

### 3.1. Tyneside English: presentation

#### 3.1.1. Newcastle-upon-Tyne and Tyneside

Newcastle-upon-Tyne (known as Newcastle) is situated in Tyne and Wear in the North East of England, not very far from the Scottish border. It is the most populous city in the North East, with 374000 inhabitants at the 2011 census<sup>1</sup>. It is a very old city, which existed in the Roman era. The « *new castle* » after which the city is named was founded by the Normans in 1080.

Newcastle forms the core of Tyneside conurbation, the eighth most populous urban area in the United Kingdom (with a population of 775000 at the 2011 census, see Figure 5), which gathers 80% of

<sup>1</sup> Office for National Statistics



the population of Tyne and Wear. It comprises Newcastle-upon-Tyne as well as a number of other towns including Gateshead, Tynemouth, Wallsend, South Shields, and Jarrow. The cities of Sunderland and Washington form the separate Wearside conurbation.

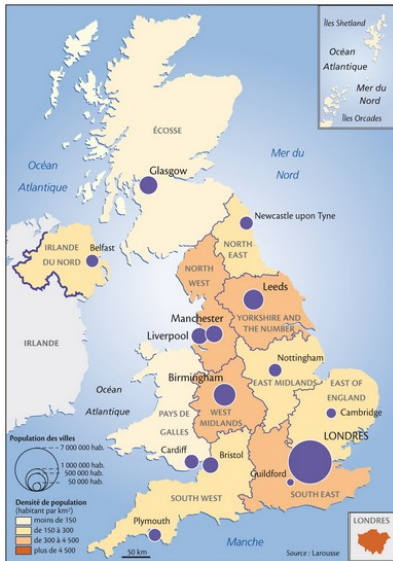


Figure 5. Main British conurbations, <http://www.larousse.fr/encyclopedie>

### 3.1.2. Tyneside intonation in the literature

To our knowledge, few studies deal with the intonation of Geordie English. Cruttenden (1997) talks about the “Tyneside tone”, involving a rising pitch and mentions a case of urban spread of those typical rising intonations. However, falls, fall-rises and high falls are heard as well, and as Cruttenden (1997) explains “many speakers use received intonation or some hybrid form”. Bi-intonational speakers are mentioned (see 2.2.3), and this is really the impression we get when we listen to some speakers. This might be correlated with social class, and also with age, but this is not the main point of this study. Pellowe & Jones (1978) also mention rise-falls, which are typical of this variety of English, and Wells (1982) is struck by the use of level tones. We took up a previous study (Leonarduzzi & Herment 2015) in which extracts from the NECTE corpus were analysed, extending it this time to the IViE corpus. We give hereafter details about the corpora and the main characteristics of Tyneside prosody.

## 3.2. Data and main characteristics of Tyneside intonation

### 3.2.1. The corpora

The NECTE corpus (Allen *et al.* 2007) is an oral corpus of dialect speech from Tyneside (North-East England) containing only natural conversations. We analysed the pvc files, collected in the 1990s. The great advantage of this data base is that it is transcribed orthographically and aligned on the sound.

The Newcastle recordings of the IViE corpus (Grabe 2004) were also used, but to a lesser extent because we do not possess the transcriptions for this corpus. The speakers are pupils aged around 16 and recorded in their schools. Different tasks exist in the IViE corpus but we only focused on the spontaneous conversation, the subject of which is smoking.

### 3.2.2. Tyneside intonation in our data

As mentioned earlier, the rising tone is the default tone in Tyneside English. This is typical of UNBI varieties of English (see 2.2.1). UNBI speakers utter declarative sentences and also WH-questions with a rising intonation, sentences which are uttered with a falling intonation in RP. However, some bi-intonational speakers (see 2.2.3) also use simple falls, along with high falls and falling-rising tones. In this paper, we will focus our attention on speakers who seemed not to be bi-intonational and who therefore used a UNBI intonation.

Although it is commonly acknowledged that there exist 4 types of rises in Newcastle English, the rise ( / ), rise-slump ( ^ ), rise-plateau ( - ), and rise-plateau-slump ( ^ ) (cf. Wilhelm 2015b), we depart from this classification. We consider that the rise-slump and rise-plateau-slump are rise-falls (see 3.2.2.2) and that the rise and the rise-plateau are the same tones (see 3.2.2.3). Furthermore, we distinguish another type of globally rising intonation, the up-stepped level tones (see 3.2.2.4). Our data also contain a lot of utterances uttered with flat prenuclear contours (mentioned by Wells 1982). We shall therefore develop these aspects of Tyneside intonation hereafter.

### Flat prenuclear contours

One of the most striking characteristics of Tyneside English in our data is the use of flat prenuclear contours, whatever tone comes next. In RP, the prenuclear contours are rarely flat. The first accented syllable is usually pronounced on a high static tone and the following syllables display a light declination until the nucleus. In Tyneside English, very often, all the prenuclear syllables are pronounced on low static tones, whether the nuclear contour be a fall, as illustrated in Figure 6, a rise (or rise-plateau, see 3.2.2.3) as shown in Figure 7 or level tones (see 3.2.2.4) as in Figure 8.

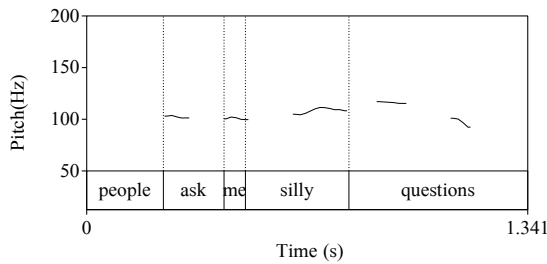


Figure 6. Falling tone on *questions* in *people ask me silly questions*, preceded by level tones (sound file 4)

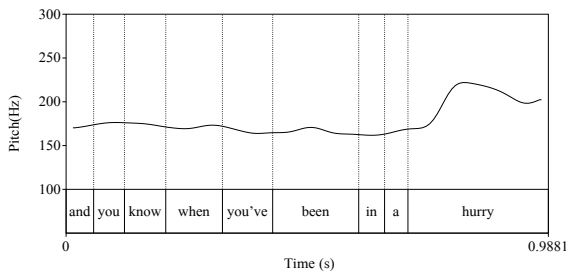


Figure 7. Level prenuclear tones and rise plateau on *you know when you've been in a hurry* (sound file 5)

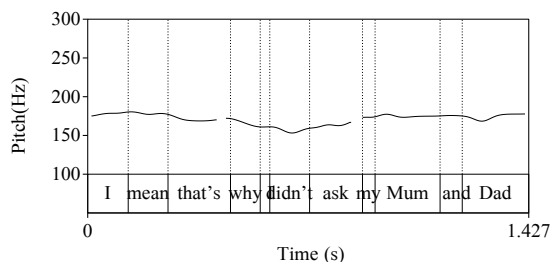


Figure 8. Level tones on *I mean that's why I didn't ask my Mum and Dad* (sound file 6)

### Rise(-plateau)-fall

Rise-falls are another characteristic of Newcastle intonation. Rise-plateau-falls, or rise-plateau-slumps according to Cruttenden's terminology (1997), are also heard in Tyneside English. We consider them to be variants of rise-falls. The rise-fall pattern is illustrated in Figure 9: pre-nuclear level tones, a rise on the nuclear syllable (*sir-*) and a fall on the first post-nuclear syllable (*-en*). The remaining post nuclear syllables are on a low static level.

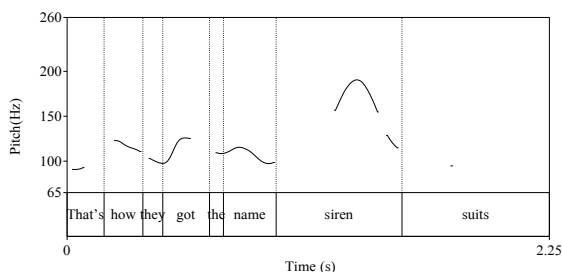


Figure 9. Simple Rise-fall on *siren* in *Well that's how they got the name siren suits* (sound file 7)

It is interesting to note that in Tyneside English, the rise-fall pattern occurs at the level of the word (*siren* here). This is why we consider that the rise-plateau-fall pattern is a variant of the rise-fall when the word bearing the tone is longer. Figure 10 shows this pattern: the word bearing the tone is *Westerhope*, a three-syllable word stressed on the first syllable, which allows a plateau on the median syllable before the fall on the final one.

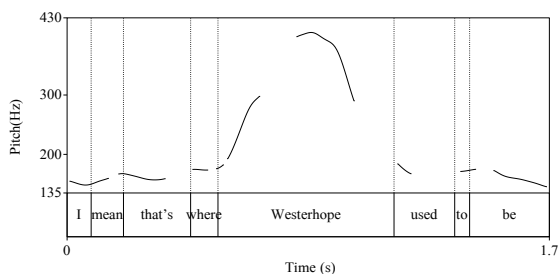


Figure 10. Rise-plateau-fall on *Westerhope* in *I mean that's where Westerhope used to be* (sound file 8)

This example illustrates the fact that the rise(-plateau)-fall tone occurs on the word, and not on all the post-nuclear syllables. It is clear on Figure 10 that the syllables following *Westerhope* are pronounced on a low level, contrary to the rise-plateau-fall heard in the North of Ireland for example, in which the high plateau is longer and maintained after the word bearing the nuclear syllable, with the fall on the last post-tonic syllable (see Turcsan & Herment 2015).

This is not surprising because whereas the rise-fall tone is used rather for surprise or irony in RP (see Roach 2009 among others), it is used for emphasis or implication in Tyneside English, where a standard (RP) intonation would have a fall-rise (see Leonarduzzi & Herment 2015). The idea of emphasis might explain why the tone is restricted to the focalised word in Tyneside English.

### Rise(-plateau)

Two distinct rises are given in the literature for Geordie English: low rise ( / ) and rise plateau ( / ). Again, we consider that they are variants of the same tone, depending on the number of post-nuclear syllables. The rise(-plateau) is characterised by a sharp rise on the tonic syllable. If post-nuclear syllables follow (or if the nuclear syllable is lengthened as in the example shown in figure 11 below) they are uttered on a relatively high plateau (and we therefore have the rise-plateau contour). Consequently, the rise and the rise-plateau are the same intonation pattern which varies according to the number of post-nuclear syllables or on the length(ening) of the nuclear syllable.

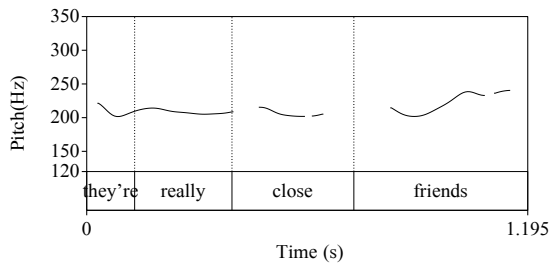


Figure 11. Rise plateau on *they're really close friends* (sound file 9)

### Up-stepped level tones

In our data, another rising contour can be heard, which is different from the rise(-plateau): it consists in a sequence of up-stepped level tones, as exemplified in Figures 13 and 14. In these sequences, there is no sharp rise on the nuclear syllable, but the global intonation is rising from the nuclear syllable on (respectively *fuss* and *better*). It is to be noted that the prenuclear contour is very flat in these occurrences (see 3.2.2.1).

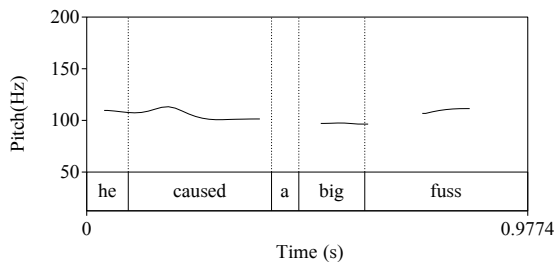


Figure 13. Up-stepped level tone on *fuss* in *he caused a big fuss* (sound file 10)

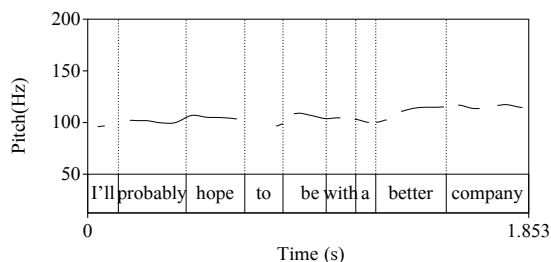


Figure 14. Up-stepped level tones on *better company* in *I'll probably hope to be in a better company* (sound file 11)

## 4. Pilot study

As we saw, we can distinguish two types of rises in Newcastle English, the rise or rise-plateau, and the up-stepped level tones, with flatter contours. The question which arises is the following: is the difference between these two rises a phonetic difference (a difference in the shape of the contour) or is it a phonological difference, *i.e.* do the two rises have different functions in discourse? In other words, do they have a distinctive function or are they just variants with one and the same function? In order to try and answer this question, we built a perception experiment.

### 4.1. Hypotheses

If the difference between the two types of rises is phonological, this means that each type of rise has a specific function in discourse. In order to test this, we had to elaborate other hypotheses concerning the possible functions of the rising intonations.

By listening to the occurrences, we first had the intuition that certain rising intonations were used to mark emphasis or to indicate a special stance on the part of the speaker. This was our first hypothesis.

Secondly, it also seemed to us that the rising intonations might have a role to play in turn-taking.

Finally, we did not forget that rising intonations in UNBI English could be used to indicate the end of a sentence, just as falls do in RP. Our third hypothesis was therefore that one of the two rising tones might be used for continuation, and the other one for finality.

### 4.2. Methodology

We built a survey so as to test our hypotheses. Segments of speech displaying the two types of rises, plus utterances with a falling intonation were extracted from our two corpora (see 3.3):

- 10 utterances with rises (or rise-plateaus);
- 10 utterances with up-stepped level tones;
- 10 utterances with falling contours (including a few rise-plateau-falls) were also extracted in order to compare the rises with falls (which would appear in RP intonation).

The speakers are both males and females, and both young and older speakers. The 30 selected passages correspond to different parts of sentences: they can be sentence final or sentence mid, correspond to the end of a speaking turn or not. The chunking into tone units was respected. In order to test what intonation alone conveys, we chose rather short passages, and did not give the context. The 30 extracts correspond to 1 or 2 tone units, the last one uttered with the chosen pattern. When possible, the vocabulary was neutral. The extracts were randomised for the survey.

Using Google Form, we created a survey so as to test the perception of native speakers of English. The survey was submitted via the internet to both Geordies and non Geordies<sup>2</sup>, who had to listen to each extract (the transcription was given) and fill in the survey as spontaneously as possible by ticking the appropriate box(es) as shown in Figure 15.

Question 2. Listen to the sentence (in the video Newcastle 2 below) and tick the appropriate box or boxes (or no box at all).

- The end of the sentence is emphatic
- The sentence is completed
- The speaker is going to let the other person speak
- The sentence denotes a particular attitude from the speaker

If so, please specify:

Figure 15. Extract of the survey

The same four possibilities were proposed for each extract. The idea was to test whether a rising pattern could be a sign of completeness in Tyneside English (second box), whether the difference between the various intonation contours was linked to turn-taking (box 3), and whether a particular pattern conveyed a particular attitude (boxes 1 and 4). The informants had the possibility to tick several boxes and to listen to the passages several times.

### 4.3. Results and discussion

#### 4.3.1. Answers to the survey

17 informants answered the survey, 6 of whom were familiar with the Geordie accent. The non-Geordies found it difficult to understand the sentences and to answer the questions. Some were baffled by the lack of context (which was made on purpose). The answers to the survey are very varied, and some sentences are far from reaching a consensus, but a few tendencies can still be drawn.

The least representative criterion seems to be the turn-taking function. Only one sentence is considered by 42% of the informants to indicate that the speaker is going to let the other person speak. All the other sentences do not reach more than 35% of answers.

The function most frequently mentioned is the completeness of the sentence (11 sentences out of 30 reach over 60%).

Finally, the emphatic function and special attitude from the speaker are medially evoked.

#### 4.3.2. Rises

If we take a closer look at the answers given by the informants familiar with Geordie, it is difficult to draw a distinction between the two types of rises. One type of rise does not clearly stand out as used for a specific purpose and the other for another purpose. Rises on the whole do appear to have the particular function of indicating that the sentence is completed (even more so with the up-stepped level tones): 6 sentences out of 10 with up-stepped level tones are considered by a majority to indicate the end of the sentence, and the same is true of 4 sentences out of 10 with rises or rise-plateaus.

#### 4.3.3. Falls

Strangely enough, the non-Geordie English speakers did not recognise falls as indicating the end of sentences. This is probably due to the fact that they do not recognise the global patterns they are familiar with (the beginning of the sentences being flatter, as was mentioned in 3.2.2.1, than what is found in more standard varieties of English). Interestingly, for Geordies, falls seem likely to indicate a

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<sup>2</sup> The Google Form sheet contained personal questions on the informants. Were considered Geordies informants who were born in Newcastle and had spent most of their lives in Newcastle.

particular attitude on the part of the speaker (4 sentences out of 10). This goes hand in hand with the fact that rises and not falls are considered to mark the end of sentences in Tyneside English.

#### 4.3.4. Emphatic statements

One sentence in particular was considered emphatic by most informants, both Geordies and non-Geordies alike. The neutral vocabulary cannot make it emphatic, so it has to be a question of intonation. Two female speakers are talking about the application forms they have sent to universities, and one exclaims *I haven't heard anything from Salford*. The sentence displays the characteristic rise-plateau-fall pattern (with a slight fall on the last syllable, see Figure 16), which we mentioned as being emphatic (see 3.2.2.2). This confirms our previous analysis on emphatic statements. The other sentences classified as emphatic are less neutral semantically: for example in the sentence *some people are smoking as young as the age of ten* (containing level rises), it is the association of *smoking* and *as young as* combined with the high tone on *ten* which can be said to make the statement emphatic. The intonation displays up-stepped level tones with a climax on *ten*.

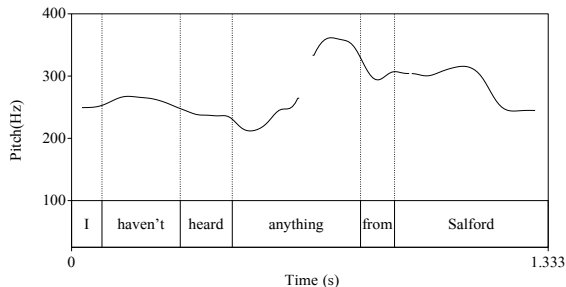


Figure 16. *Rise-plateau-fall starting on anything* (sound file 12)

## 5. Discussion and conclusions

### 5.1. The pilot study

The survey confirms that Newcastle English belongs to the UNBI group, since the rising intonations seem to indicate that sentences are completed (especially the up-stepped level tones), while the falling intonations can conversely indicate a special stance on the part of the speaker (in this case falls would not be the default tone). It also allows us to conclude that the rise(-plateau)-fall pattern is used for emphatic purposes. The fact that we did not get homogeneous answers from the informants, whether Geordies or non-Geordies, can be explained by the fact that many speakers of Newcastle English are bi-intonational, so that they may be using rises or falls in two different ways, once using the typical UNBI patterns, and another time using more standard English patterns. In this perspective, it might be interesting to take a closer look at prenuclear contours, since they might indicate a clear difference between UNBI varieties of English and more standard varieties.

The survey also answers our general research question, which was ‘is there a phonological (functional) distinction between the two types of rises?’. There does not seem to be a functional distinction. The distinction might then be due to sociological factors such as age group and social class, which would mean that it is a phonetic distinction rather than a phonological one. Following Podesva (2011) we could hint that in Tyneside English, the selection of a particular phonetic contour carries social meaning. The speech of older speakers seems indeed to be characterised in neutral contexts by falling tones, just as in standard English.

On the contrary, younger speakers tend to favour level tones on the nuclear syllable (see Figure 8). The contour might then be rising or not. If there is no pitch movement at all on the nucleus, the speaker uses segmental lengthening to mark the nuclear syllables (on *Mum* and *Dad* for example in Figure 8).

These facts would tend to show that there might be a phonetic rather than a phonological difference between the two types of rises. But there might be yet another hypothesis concerning this difference.

## 5.2. New hypothesis

It is acknowledged that the rising intonations known as HRTs are spreading in the South of Great Britain (Cruttenden 1997, Ladd 2008). Would it be possible then that they are spreading as well in UNBI varieties of English? Recently HRT was indeed attested in the North of the British Isles, by Cruttenden (2007) in Glasgow, Nance (2013) in the Hebrides and Sullivan (2010, 2012) in Northern Ireland.

Could the two types of rises in Tyneside English reflect this ongoing change? If HRT has reached Newcastle as well, then we could infer that the difference between the two types of rises actually reflects the difference between the UNBI and the HRT intonation, one type of rise being closer to HRT while the other type remains characteristic of UNBI. Indeed, the second type of rise (up-stepped level tones) seems to us to be very close to the contour of HRTs (a flat prenuclear contour followed by a sharp rise on the nuclear syllable in most cases), but this is yet to be investigated. And this proved right, then we could say that there is a phonological difference between the two types of rises, since HRTs have been shown to share the same functions as discourse markers, maintaining the co-speaker's attention, or to have pragmatic functions such as the expression of uncertainty (see 2.4.2). It might prove relevant to see if these functions are found in one or the other of the rising intonations of the urban cities of Northern Britain.

The two types of rises in Newcastle English might be an indication that HRT has started to spread through the UNBI varieties, leading to the cohabitation of the two.

## 5.3. General conclusion

The borderline between UNBI and HRT is rather blurred at present. Some studies have been carried out about the difference between UNBI and HRT, but no consensus has been reached as to the phonetic form of these two types of rising intonations, which are sometimes considered to be the same. As Wilhelm (2015a) explains, the phonetic differences that were first made out by Ladd (1996/2008) are not always relevant criteria. Wilhelm (2011) suggests that several criteria are to be taken into account (geographical, functional, phonetic and auditory criteria) to distinguish between UNBI and HRT. The next step concerning Newcastle English would be to take up these criteria and try to apply them to this particular variety of English.

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