



Innovations in the stylistic variation of nuclear tunes in Belfast English

Anna Bothe Jespersen ¹

¹ Department of English, Aarhus University
anna.jespersen@cc.au.dk

Abstract

This paper is a replication of Lowry's (2002) study of Belfast English nuclear intonation. The original paper revealed a tendency for speakers to produce a greater-than-expected amount of falling tunes in more careful speech styles, while informal speech styles almost exclusively yielded the canonical Belfast English rise-plateaux. According to Lowry, this finding reflected an attempt by speakers to emulate the prestige variety of SSBE, in which declarative falls are the norm. However, since Lowry's study, a new nuclear tune has entered the scene: increasingly, studies report the use of uptalk rises in the British Isles. This study analyses data from sociolinguistic interviews with 6 adolescent male speakers of Belfast English to investigate whether this speaker group still produces SSBE-like falls in formal contexts. Findings indicate that rise-plateaux are still produced in informal contexts, that use of falls may be idiolectal or used with greater frequency by speakers that are politically oriented towards the UK, and that speakers in the present sample now realise the majority of declarative statements with uptalk rises in formal styles.

Index Terms: Intonation, speech style, uptalk, Belfast English.

1. Introduction

Variationist sociolinguistics has traditionally treated speech style as co-varying with, among other things, levels of formality [1, 2]. In this view, more formal speech situations will lead the speaker to pay attention to her speaking style, and thus be more likely to produce speech forms associated with high-prestige varieties. On the other hand, more informal speaking situations will distract the speaker from paying attention to her speech and lead to the production of less prestigious speech forms. Elicitation of speech with different levels of formality often takes the form of a sociolinguistic interview, which consists of an informal interview, a read-aloud text passage and a list of words or short sentences. These three elements are argued to elicit speech of increasing formality [1].

One of the few studies of the effects of style-shifting on intonational variation is Lowry's [3] study of statement intonation in Belfast English, which relied on data from the IViE corpus [4]. Lowry examined stylistic variation in nuclear contours, which are argued to be a major contributor of intonational meaning [5, 6]. In Belfast, the canonical declarative tune is rising rather than falling [7, 8, 9], a phenomenon which is considered atypical in intonational typology. Lowry set out to investigate whether, with increased levels of formality, Belfast speakers conformed to the SSBE norm of producing falls with statements rather than the traditional Belfast rises. She found that this was indeed the case with the majority of speakers. She also found a stronger tendency for women to use the SSBE-like falling intonation. Her data, however, showed considerable interspeaker variation.

Since Lowry's study, there have been increasing reports from SSBE and other British varieties of the use of non-systemic declarative rises [10, 11, 12]. These rises, known as *High Rising Terminals* or *uptalk rises*, have been extensively studied in the context of Australia [13, 14, 15], New Zealand [16, 17] and the United States [18, 19]. They were first

described in London by Cruttenden [20] but have since been found to be in increasingly widespread use in SSBE more broadly [e.g. 10, 21]. Uptalk rises are claimed to hold a broad series of semantic meanings, which range from floor-holding and managing the conversation to signalling co-operation with the listener [11, 16]. In this way, the meanings and systemic functions of uptalk rises are fundamentally different from the rise-plateaux, which are considered the default pattern for declarative utterances in Belfast English, and are therefore not expected to carry intonational meaning. See [22, pp. 126-30] for a full discussion of the semantic-functional distinction between uptalk rises and rise-plateaux. Furthermore, rise-plateaux are considered a typical dialect feature of Belfast English variety [7, 8, 9, 21].

The phonological form of uptalk rises in SSBE has been found to be variable [10, 12], but can be generalised to simple low rises, which in the ToBI [23] system are transcribed L* L-H%, and, less frequently, high rises, L* H-H%. In contrast, the traditional Belfast rise-plateaux are complex rises, which consist of a rise portion on the nuclear syllable, after which the f0 plateau for any post-nuclear syllables. Variably, the plateau portion may end in a falling offglide. The rise-plateau is transcribed L+H* H-L% (or L* H-0% in the IViE system [4, 21]). In this way, uptalk is both semantically, systemically and phonologically different from the traditional Belfast rises. Note that Lowry specifically mentions that the rate of production of simple rises is very low in Belfast English, and that declarative simple rises are virtually non-existent [3, p. 34]. This reflects reports from other studies that the vast majority of declarative rises in Belfast are rise-plateaux [21, p. 165; 24, p. 449].

Figure 1 illustrates the difference in phonological form between the Belfast rise-plateau (left) and the uptalk rise (right). The shaded part of the figure represents the nuclear syllable. This paper will also look into the frequency of use of simple and complex intonational falls. Figure 2 illustrates two major groups of falls, a simple fall (left) and a rise-fall (right).

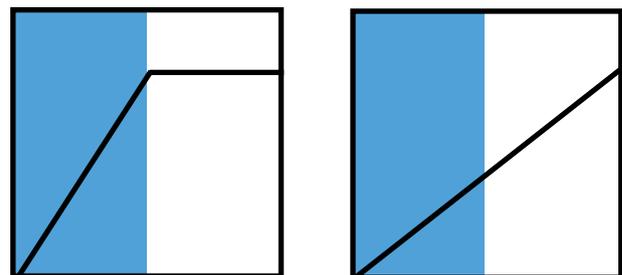


Figure 1: A stylised rise-plateau and rise

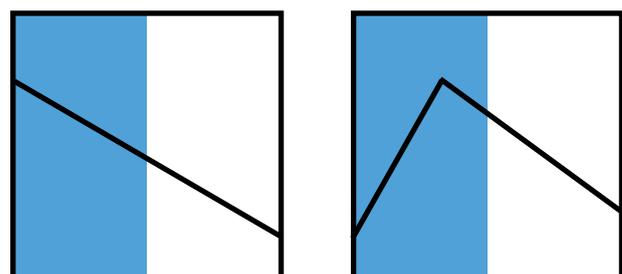


Figure 2: A stylised fall and rise-fall

2. Research questions

With increasing reports of the presence of uptalk rises in nearby varieties of English, including SSBE, which Lowry argued to be the prestige variety for Belfast speakers, this study looks into the following questions:

- Are falling tunes still produced by Belfast speakers, and are they still associated with formal speech?
- Are uptalk rises systematically produced by speakers, and which level(s) of formality are they associated with?

As a replication study, this investigation is aimed at updating and nuancing Lowry's work, which relies on data from 1996, and which can therefore be hypothesised to represent a study conducted previous to the rise of uptalk in Belfast. Owing to its small sample size, the study will pay special attention to the behaviour of individual speakers.

3. Methodology

3.1. Speakers and data

This study is based on data from 6 young male speakers of Belfast English (the speakers were between 18–20 at the time of recording). All grew up in Belfast or its immediate surroundings and were of working class and lower middle class backgrounds. The speakers participated in sociolinguistic interviews, of which speech from three tasks were analysed: an informal interview, a reading passage, and the reading aloud of short sentences (the "wordlist" condition). The reading passage was a modified version of the Cinderella story, and the sentences contained words composed of sonorant segments. All materials were the same as were used in Lowry's study [3]. Speakers were instructed during the wordlist reading to concentrate on each sentence in isolation. Furthermore, they were asked to produce a three-second pause after each reading to avoid list intonation, which in English is often realised as a series of low rises. The spontaneous interview took as its point of departure the speakers' favourite tv series, and generally covered various aspects of their hobbies and consumption of popular culture. Approximately 3 minutes of speech was analysed from each speaker.

All speakers were recorded in quiet rooms, four at the Belfast Metropolitan College and two at Queen's University. The recordings were made using a H4 Zoom Handy recorder with a C520 AKG headset microphone. The data were sampled at a 44.1 kHz rate with a resolution of 32 bits. The resulting .wav files were labelled at the word level in Praat [25], and annotated using the ToBI framework for intonational transcription [22]. Statistical analyses were made in R [26] using the RStudio platform [27].

3.2. Labelling and analysis

Nuclear tunes were included in the labelling process based on 2 criteria: firstly, tunes were included if they spanned more than two syllables. This was done in order for the distinction between rises and plateaux to be made possible – plateaux that span one syllable only are difficult to distinguish from simple rises, since the plateau portion of the tune is associated with post-nuclear syllables. Secondly, tunes were included in the study if they were associated with full IPs rather than intermediate phrases (ips). In cases of doubt, either in the categorisation of phrasal level or tune type, nuclear tunes were discarded from the analysis. Following Lowry (2002), the tunes analysed were divided into two broad groups: falling and rising. However, a further division was made: Lowry's [3] category of *rises* were subdivided into simple rises (L* L-H% and L* H-H%) and rise-plateaux (L*+H H-L%), and Lowry's

category of *falls* was subdivided into simple falls (H* L-L%) and rise-falls (L+H* L-L% and L* H-L%). Following [3], the occurrences of each type of nuclear tune were counted, and the association between speech style and nucleus type was tested using a chi-squared test.

4. Results

The 6 speakers produced 734 statement contours. When subjected to a chi-squared test, the speakers' production of nuclear tunes was found to co-vary significantly with variation in stylistic conditions ($\chi^2(6)=156.3, p=.001$), with a large effect size ($V=0.425$). No further tests were conducted due to the small sample size.

Figure 3 illustrates the association between speech style and tune choice. In this graph, the proportion of each tune type is shown as a percentage of the total amount of nuclear tunes in each speech style. The interview condition is the most informal speech style, and is therefore expected to provide relatively spontaneous speech [1]. As expected, this speech style yielded the greatest amount of the canonical Belfast rise-plateaux – just below 50% of statements were produced with a plateau tune. Moreover, increasing levels of formality across the read speech and wordlist resulted in decreasing amounts of rise-plateaux.

Furthermore, compared to the veritably non-existent amount of rises reported in [3] and [4], these 6 speakers used a relatively high amount of simple rises, especially in the formal wordlist speech style. In contrast to Lowry's findings [3], the present study only found a weak association between the frequency of use of intonational falls and more formal speech contexts. However, this finding is impacted by idiolectal variation, in particular with respect to the simple falls.

Figure 3: The distributions of tunes across the three stylistic conditions.

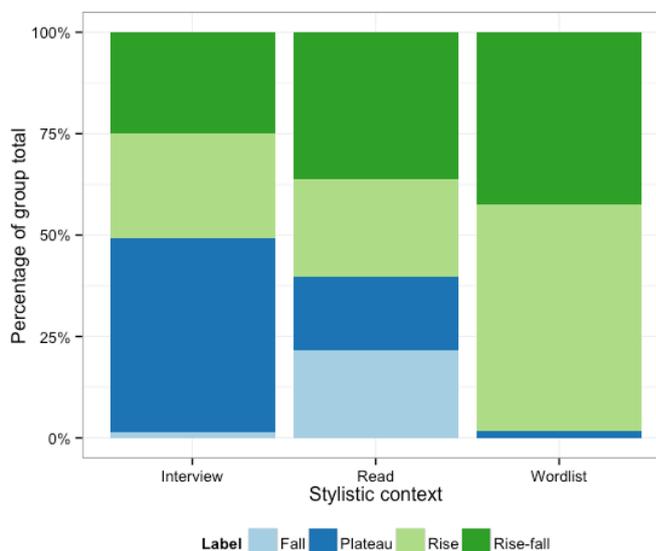
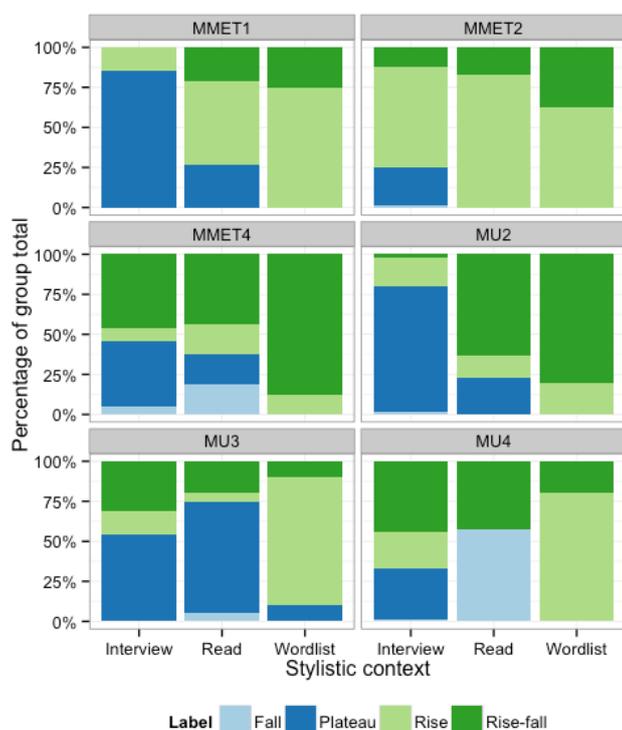


Figure 4 unpacks this variation by providing an illustration of the speech patterns of individual speakers. As is immediately apparent from this graph, the trends discussed above are based on a highly variable production of tunes by individual speakers. Overall, the associations between informal speech and rise-plateaux, and between formal speech and falls and rise-falls, are relatively stable across speakers, and thus consistent with Lowry's findings. The 6 speakers interviewed for this study did not consistently produce simple falls, with the exception of MMET4 and MU4. MU4 is particularly

interesting as his read speech is consistently produced with falling intonational tunes, whereas the majority of his statements in the other two speech styles are produced with rising tunes. This particular speaker, however, volunteers at kindergarten where he regularly reads stories aloud to the children, his pronounced use of falling tunes could therefore be the effect of practice.

Figure 4: Individual patterns in the distribution of tunes across the three stylistic contexts.



The most interesting aspect of Figure 4 is the speakers' use of simple rises. Contrary to Lowry's study [3], four of the six speakers produce increasing amounts of simple rises with increasingly formal speech styles, and for these four speakers the majority of statements in the wordlist condition are produced with simple rises. The remaining two speakers, however, subvert this pattern and produces the majority of their formal statements with rise-falls.

5. Discussion

5.1. The role of political stance in Belfast English

As a replication study, this investigation has primarily focused on providing a comparison with Lowry's original study. Lowry reported that her speakers, who were all of a comparable age group to the present speakers, produced an increasing amount of falling tunes as the stylistic context became more formal. For the majority of speakers, falling tunes (including both simple falls and rise-falls) were never produced in interview speech. At the same time, females were much more likely to produce falling tunes in any stylistic context than males, 5 of 7 of whom produced less than 5% falling tunes overall. This pattern seems attributable to speakers whose overt prestige variety is traditional SSBE, and where females are more strongly oriented towards overt than covert prestige [2]. However, Lowry's study has left a significant potential bias unaccounted for: the strong sectarian political divisions in Belfast, and their influence on linguistic variation [28, 29, 30].

It seems likely that *unionist* speakers, who endorse the inclusion of Northern Ireland in the UK and are strongly oriented towards London as a power centre, emulate SSBE in formal speaking situations. However, *republicans*, who favour the disintegration of the union with the UK and a united Ireland, seem less likely candidates to use intonational tunes associated with British prestige varieties.

The present dataset contains speech from 2 republican speakers (MMET1 and MMET2) 4 unionist speakers (MMET4, MU2, MU3 and MU4). While these are clearly small sample sizes, it is nonetheless useful in light of the political sectarianism in Belfast to consider potential politically motivated between-group differences. The two republican speakers (in the top row of Figure 4) tend to avoid falling tunes of either kind across speech styles, and produce greater amounts of simple rises across speech styles than any of the 4 unionist speakers. In particular, both republicans produce noticeably greater amounts of rises during the reading and wordlist tasks.

There is more variability among the 4 unionists. Two main patterns emerge: the second row of speakers in Figure 4 (MMET4 and MU2) tend to avoid simple rises and produce most of their read speech and wordlist speech with simple falls or rise-falls. On the other hand, the two speakers in the third row, MU3 and MU4, also generally avoid rises in the two most informal speech styles, but produce most of their wordlist speech with simple rises. In this connection it is interesting to consider that MMET4 and MU2, the only two speakers to consistently use falling tunes in formal speech describe themselves during or after the interviews as being political hardliners. Neither MU3 and MU4 describe themselves in this way. Furthermore, MU3 indicates at the beginning of the interview that he sees himself as a moderate unionist. In this way, his particular political identity may call for a less marked performance of unionist speech variables.

Furthermore, MU4's use of simple falls in his read speech provides further evidence for the value of considering political orientation in a study of linguistic formality in the Belfast context. During data collection, the interviewer commented on MU4's fluent reading of the Cinderella passage. MU4 responded by mentioning that he regularly reads stories aloud to children in kindergarten as part of a series of politically-motivated volunteer work. In this way, he seems to have practiced the production of traditional SSBE falls during these reading sessions with his political party. This again highlights the need for political stance to be controlled for in studies of Belfast English prestige variants, as different models of prestige may be at play for unionists (ostensibly, UK varieties) and republicans (Republic of Ireland varieties). The three other unionist speakers have not participated in the same volunteer work.

5.2. Falls and rises: a comparison with Lowry (2002)

Nonetheless, Lowry's main finding is supported by this study: Belfast English speakers tend to use increasing amounts of falling tunes (a term which covers both falls and rise-falls) with increasingly formal speech contexts. Yet the relative proportions of falls differ from Lowry's study. Five of the six male speakers analysed here produce significantly more than 5% falling tunes in at least 2 of the three stylistic conditions, with two producing more falling than rising tunes in the two most formal conditions. This indication of an increased use of falling tunes among young male speakers, especially among the four unionists, may reflect a change in progress away from the dialectal rise-plateaux, or it be an effect of a difference in political views between the speakers included in the two studies. Future work which relies on politically balanced speaker groups are needed to fully engage with this question – and direct comparison with Lowry's work is difficult. In this study, which primarily aims to investigate the use of uptalk in

Belfast English, the inclusion of unionist speakers was chosen exactly on the basis of their political conservatism. It was thought that if uptalk was found in the speech of young male, unionist Belfasters, which can be supposed to attune themselves to British norms as well as toward more traditional notions of SSBE formality, there is a good chance they will be present with the younger population in general.

5.3. A new prestige tune in Belfast?

This study took a more nuanced view than [3] by dividing the *rising* and *falling* categories employed by Lowry into simple rises and plateaux, and simple falls and rise-falls. This provided for a more detailed examination of speakers' use of nuclear tunes, and made possible an investigation of the potential uptake of uptalk rises by young Belfast English speakers. The present findings indicate that despite the phonetic similarity of simple rises and rise-plateaux, the two tune types were used at different levels of formality. Rise-plateaux, the traditional dialectal Belfast tunes, were predominantly used in more informal speech styles, but their use decreased as formality increased. In the wordlist context, only one speaker, MU3, produced any rise-plateaux. This finding makes sense in the context of Lowry (2002), as well as the rise-plateaux's associations with the traditional dialect [7, 8]. On the other hand, while there was also no clear pattern in the use of simple rises in the two most informal speech styles they were, contrary to my initial hypotheses, produced with the majority of IPs in the formal wordlist condition.

As mentioned in the introduction, simple falls are reported to be the default tune used with declarative statements in traditional SSBE [6, 20, 24]. However, these falls were not produced in any significant measure by the present speakers, with the obvious exception of MU4. There was also no strong association between rise-falls and levels of formality in the present study. On the other hand, uptalk rises, which by many (especially older) speakers of English are considered non-standard, were the tune type produced most frequently in the wordlist context. 4 of the 6 speakers produced more than 75% of their wordlist statements with a simple rise, rather than with a tune associated either with SSBE (traditional overt prestige) or rise-plateaux (Belfast covert prestige). In [31] from 2004, a study of Belfast intonation in the IViE corpus, it was found that across 5 speech styles (including wordlist and read speech), 83% of declarative utterances were realised with a rise-plateau, 12.5% with a rise-fall and 4.2% with a fall. In other words, in all of the IViE data, *no simple rises* were attested [31, p. 14]. It seems, therefore, that something new is happening in the speech of young Belfasters: several of the present speakers seem to have uptalk-like rises as their prestige forms, rather than simple falls.

Given the recent reports of uptalk in SSBE [10, 11], one interpretation is that the four speakers who produce rises in formal speech orient themselves towards the SSBE of their peers, in which uptalk rises are increasingly numerous, rather than towards traditional SSBE. This interpretation is based on a hypothesis that uptalk is ubiquitous enough (or salient enough) in young SSBE for it to be considered standard and overtly prestigious by adolescent Belfast English speakers. Another interpretation could be that these four Belfasters are not orienting themselves towards SSBE for overt prestige. Uptalk rises are almost omnipresent in anglophone pop-culture, and studies have already started reporting its representation on social media such as Twitter [32]. Young Belfasters may be looking toward the global social marketplace for overt prestige variants. This may be particularly relevant in the case of young Northern Irish republicans, who are generally left-leaning politically and who do not have political reasons to be view SSBE variants as prestigious.

A tentative interpretation of the patterns found in this study is that young speakers of Belfast English are generally attuned to the global tendency of uptalking, but that this attunement can be impacted by a political identity associated with traditional UK speech norms. Under this interpretation, a unionist hardliner persona impacts the use of uptalk rises, whereas more moderate unionists identify with both their political party and with global youth culture. A republican political identity, on the other hand, impacts the use of simple falls. While the scope of this discussion is limited by the small amount of data present here, it provides testing ground for future studies. They suggest that Belfast English intonation is developing, and that it is developing in different ways than has hitherto been assumed.

6. Conclusion

This study replicates earlier work on variation in nuclear tunes across three speech styles in Belfast English. The aim is to provide evidence of the existence of uptalk rises in Belfast English and investigate how these rises correlate with different levels of formality. Despite the broad phonological similarity of uptalk and plateau rises, it is shown that these two rise types are not used by the present speakers to index similar levels of formality: plateaux are used in more informal speech styles. Uptalk rises, on the other hand, are the most commonly used nuclear tune in the most formal speech style. This is an indication that the falls traditionally associated with SSBE are falling out of favour with younger Belfast English speakers, and that uptalk is potentially on the rise as a prestige tune. However, the paper also argues that political orientation may be a strong influence on speakers' choice of formal intonational tunes in the Belfast context, that it constitutes a potential bias in earlier studies, and that direct comparisons with these studies are therefore difficult.

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