Consistency and Contrast in the Deployment of Intonation Resources During Oral Presentations by Students of English Language

V. Michael Cribb, (PhD, MA, FHEA.)
Coventry University, United Kingdom

Abstract

Intonation is an important resource in the English language for structuring information and delineating paratone boundaries. This paper reports on a study which investigates the use of this resource by students of English during the delivery of academic oral presentations (monologues) in class. It compares Chinese students with European students of English to determine whether there are significant differences in a number of measures of vocal pitch range. Since Chinese is a tonal language, a hypothesis is that these students will encounter more difficulty in the deployment of intonation resources than their European counterparts leading to monologues which are flat and undifferentiated. The paper also compares the pitch range of the students with more experienced, charismatic presenters who are native speakers of the language to determine whether they use a wider, more expansive pitch range when delivering monologues. The results of the study are mixed and suggest that simple quantitative measures of pitch range are not sufficient to capture the complexity of intonation as a construct. Instead a holistic view of intonation needs to be taken in order to understand how the successful delivery of a monologue requires intonation to be deployed in a consistent and contrastive way regardless of the range of pitch used.

Keywords: Intonation; pitch; presentation; monologue; non-native.

Introduction

Experienced oral presenters are often characterised as having lively and charismatic voices (Rosenberg and Hirschberg 2005). One feature of these voices is an expansive range of intonation falls and rises which, when used in a consistent and contrastive way, help not only to hold the audience's attention but also to segment the monologue and aid understanding. Novice presenters on the other hand tend to use a narrower intonation range and thus have greater difficulty in signalling the hierarchical relationship between foreground and background information. This often leads to their discourse

being perceived as flat and monotonous (Tyler, Jefferies and Davies 1988). In addition, presenters whose first language is tonal in nature (e.g. Chinese) often find the dynamics of the English pitch challenging due to differences in the functionality of tone between the languages (Hincks and Edlund 2009).

The aim of this paper is to investigate the range and pattern of intonation deployed by novice presenters as they deliver academic oral monologues in class. The presenters were all international students of the English language (i.e. non-native speakers of English) who were recorded while delivering presentations in front of their class in a tertiary educational environment. The paper makes comparisons with a set of experienced presenters, represented by English native-speaking lecturers, to see if the intonation range is more expansive in these speakers. The paper also compares the intonation of Chinese students with European students to see if there are any differences. Since the system of prosody of the Chinese language differs significantly from English, one hypothesis is that Chinese students of English will be less effectively in using intonation to signal the hierarchy of information in their spoken discourse compared with European students.

1 Background

Oral presentations in which speakers are required to present a body of material in the form of an academic monologue are common tasks for university students on language and content courses. These presentations often constitute part of the assessment for the course so carry value and significance for the students. Being monologic in nature, a presentation differs from a dialogue in that the opportunities for collaboration (Clark 1996) and negotiation (Foster 1997) with the interlocutors are often circumscribed. The speaker is required to structure their talk in a 'tighter' fashion so that the hierarchical nature of the discourse is conveyed to the listener and the talk is perceived as comprehensible (Tyler 1992, 1994). Speakers need to control and integrate a number of linguistic and non-linguistic systems in order to signal this structure and hierarchy. These systems include the grammar, semantics, pronunciation and prosody of the monologue as well as body language of the speaker and any visual aids used.

Experienced oral speakers are often characterised as having lively or charismatic voices (Hincks 2004; Hincks and Edlund 2009; Rosenberg and Hirschberg 2005). A lively voice is one that engages the audience through the variation of intonation, rhythm and loudness in a "prosodically engaging manner" (Hincks 2004) while charismatic speakers are able to "command authority by virtue of their personal qualities" (Rosenberg and Hirschberg, 2005: 1). For experienced presenters, a charismatic and lively use of intonation can be deployed to demarcate topic boundaries and to signal the

hierarchy of information within a talk. Rosenberg and Hirschberg (2005) found that speakers rated highly for charisma tended to have higher ranges of intonation, as measured by pitch movement.

For novice presenters, however, particularly those who are non-native speakers of English, utilising a charismatic and lively voice is a more demanding task, especially during a monologue where the collaborative nature of the discourse has been largely removed. Producing native-like intonation patterns can be particularly problematic for student who lack L2 proficiency (Busà and Urbani 2011) especially if a student's own L1 has a tonal system markedly different from English. Cultural and motivational issues can also play a part in how these students deliver their talk. Hincks (2004) has suggested that speech analysis software could potentially be used to train second language speakers to vary their pitch by giving them automatic feedback on their performance as they speak.

2.1 Intonation

Within the prosodic system, the use of intonation is often misunderstood in monologues. Intonation can be defined as the rise and fall in the pitch of the voice over a series of words that constitute a tone unit (or intonational phrase) with each tone unit carrying one intonation contour (Brazil 1994). Intonation can display attitudinal and accentual functions as well as disambiguate grammatical information in certain cases (Roach 2009). The discoursal function of intonation is less well recognised however. In this capacity, intonation can be an important cue in signalling segments of monologues, in particular the paratone which acts like a phonological paragraph (Thompson 2003). The paratone is used to separate and segment topics, thus providing the monologue with structure and hierarchy. Pickering (2004) has suggested that paratones in monologues are delineated by a number of features including a lowering of pitch at the end of the paratone, with possibly some larygealisation, followed by a marked pause and then a rise in pitch (high key) at the start of the new paratone. Within paratones there is also a general declination in the pitch of the tone units.

One hypothesis (Pickering 2004) is that non-native speakers may use a narrower pitch range when speaking compared to native speakers, and this reduced pitch range may restrict their ability to signal paratone and tone unit divisions within the discourse effectively. This can lead to monologues that are perceived by the audience as flat and undifferentiated, thus masking any hierarchical structure that the speaker may have intended to convey. Recent research has suggested that non-native speakers do in fact exhibit reduced pitch ranges when speaking English (Pickering 2004; Busà and Urbani 2011). Hincks (2004) has suggested that oral presentations that exhibit

narrow pitch ranges can be characterised as “monotonous” while those with wider ranges can be considered “lively”.

2 The Present Study

Much of the research on intonation to date has focused on speakers producing discourse in controlled environments typically by reading scripted discourse under laboratory conditions. The present research attempted to overcome this limitation by measuring the pitch range of students as they undertook a live assessed module at university where the pressures to communicate and perform are at their maximum. The students were all non-native speakers of English (NNS) and novice presenters in so far as this was one of their first experiences of undertaking a formal presentation in English in front of an audience.

2.1 Research questions

The two main research questions for this study were:

RQ1: Do NNS novice presenters exhibit a narrow pitch range compared with NS experienced presenters? (Experienced presenters in this context are English native-speaking university lecturers.)

RQ2: Do Chinese NNS presenters exhibit a narrow pitch range compared with European presenters?

Two hypotheses emerged from these research questions:

H1: NNS novice presenters will exhibit a narrow pitch range compared with NS experienced presenters.

H2: Chinese presenters will exhibit a narrow pitch range compared with European presenters.

There is some evidence for these hypotheses. Research in the past has shown that charismatic and lively speech is often associated with wide pitch ranges in the speaker’s voice (Hincks 2004) which leads to sweeping high-low falls in pitch as the speaker emphasises certain parts of the message. This is likely to be the case for the NS lecturers who have spent many years honing their presentation skills compared to the novice presenters (hence H1). Hincks and Edlund (2009:36) concluded that second language speakers of tone languages (Chinese is a tone language) are “particularly challenged when it comes to the dynamics of English pitch”. Observations in the author’s own classroom had also suggested that European students tend to be more lively when making presentations compared with Chinese students who often use scripts or attempt to memorise sentences (hence H2). The European students investigated here all had first languages (L1) that were non-tonal.

2.2 Participants

NNS Novice presenters

Participants for the project were selected from a large cohort of students (n>400) who were undertaking a third-year undergraduate module in advanced English for business and management as part of their degree course at a university in the United Kingdom. All participants had spent at least two years in their home country studying at undergraduate level before undertaking their final year in the UK. The module was composed chiefly of Chinese students and European Erasmus students. The European students were mostly French but there were also a small number of students from other European countries. Twenty two students volunteered to take part in the research from the cohort on the module. Due to time and cost limitations, this was the maximum number of participants that could be accepted on to the study. Table 1 shows the nationalities of the participants and the gender ratio.

Table 1
NNS student nationalities

Nationality	*no. of students*	*female: male ratio*
Chinese	10	8:2
French	5	2:3
Polish	2	1:1
Czech	1	female
German	1	male
Hungarian	1	female
Romanian	1	female
Spanish	1	male
Total	*22*	*14:8*

NS Experienced presenters

As a comparison, data for NS experienced presenters was taken from the Engineering Lecture Corpus (Alsop and Nesi 2013). This is a collection of recordings of lectures delivered by experienced British tutors. The lectures in this corpus had been recorded in class and formed part of the normal content delivery of the courses at undergraduate level. Whilst it is recognised that there are differences between lectures and student presentations, there is also a high degree of overlap in these two types of spoken activities (i.e. monologic discourse, speaker to audience, planned but largely unscripted) and the comparison is a valid one. Six samples were randomly chosen from the Engineering Lecture Corpus for analysis. Each sample was approximately five minutes in length; five of the samples were male, one was female.

2.3 Presentation task (NNS)

The task for all NNS participants was to deliver a presentation in front of the class as part of the summative assessment for the module. Students had been assigned the task several weeks before the delivery date and class activities had been implemented in order to help students prepare and practice, although specific instructions were not given on the nature of the research nor on the use of intonation. Students delivered their presentation as part of a team of three or four students with each member of the team speaking for approximately five minutes. PowerPoint slides were used in all cases as visual aids. In most instances, the students who volunteered for the study were members of separate presentation teams. The presentations were delivered without scripts although some students did refer to notes as they progressed.

The participants in the research were recorded while making their presentations using an Olympus digital voice recorder (VN-8500PC) and a clip on microphone attached to the lapel at a distance of approximately six inches from the mouth. Microphone sensitivity was set to low to block out audience and background noise, and the recording mode was set to high quality. This produced Windows Media Audio files (.wma) with a bit rate of 128kbps and sample rate of 44kHz. These files were subsequently inspected and digitally edited to remove unwanted noise such as coughs from the speaker and background noises that were not deemed to be part of the verbal stream. Instances of creaky voice (Clark, Yallop and Fletcher 2007) or hesitation phenomena however were not removed. The sound files were analysed using Speech Analyzer software (version 3.0.1) available from SIL International (SIL 2012). The pitch lower boundary was set for analysis at 50 Hz and the upper boundary at 500 Hz (male) and 600 Hz (female).

2.4 Pitch measures

Three measures of pitch are utilised for the purpose of this study (Table 2). Mean f0 is the absolute level of pitch in the voice and is not a measure of pitch range. SD measures the range of pitch movement but since males and females tend to have different levels of mean f0, PDQ is a better measure of the pitch range. This is a normalised measure of the pitch range obtained by dividing the SD by the mean f0 (Hincks 2004).

Table 2
Pitch Measures

Measure	*Description*
1. Mean f0	Mean value of all f0 (fundamental frequency) values in pitch contour
2. SD	Standard Deviation of all pitch values
3. PDQ	Pitch Dynamism Quotient = SD/mean f0

2.5 Rating exercise

In order to rate the NNS speech samples, a number of judges were commissioned. The judges consisted of English language tutors (NS) who had extensive experience of dealing with non-native speakers of English and of teaching presentation skills. The rating exercise asked the judges to listen to the samples and rate each monologue for intonation and comprehensibility (Derwing, Munro and Thomson 2007). The judges were also asked to give each sample a grade for use of intonation.

Nine tutors took part in the exercise as judges and each was supplied with a CD of the samples and a rating sheet on which a number of statements were given with regard to intonation and comprehensibility (appendix 1). The judges were asked to mark each statement on a scale from 'strongly disagree' to 'strongly agree' for each sample. At the end, they were asked to grade the sample on a scale of 0% to 100% using the marking system employed in the majority of British universities (i.e. 40% = pass; 70% = excellent). In order to limit the time required to complete the rating exercise, a segment of approximately two minutes of each monologue was used. The first and last 20 seconds of each monologue were excluded and segments were chosen to ensure that a full topic was covered. The relevant PowerPoint slides were also provided on the rating sheets so that the judge had some context and background to the samples. Judges were asked to carry out the rating exercise in their own time in a quiet room and at one sitting. After completing the exercises, the judges returned the rating sheets to the researcher, and scores were averaged and correlated.

3 Results

3.1 RQ1: Novice vs experienced

The average values of the pitch measures for novice (student) and experienced (lecturer) presenters are given in Table 3. The two range measures (SD and PDQ) all show higher values for the experienced presenters compared with the novice presenters. For example, the average PDQ of the experienced presenters is 0.230 against an average for the novice students of 0.146. Mean f0 is not a measure of pitch range; this value is different between the groups (160.8 vs 193.0) due to the fact that the lecturer corpus included a higher proportion of male speakers.

Table 3
Pitch values for novice and experienced presenters

	N	*Mean f0*	*SD*	*PDQ*
Novice presenters	22	193.0	33.7	0.146
Experienced presenters	6	160.8	47.1	0.230

Mann-Whitney U-tests (Table 4) show that the differences in the pitch range measures are significant at the 5% level. The significant differences in the measures of pitch range lend weight to hypothesis H1.

Table 4
Mann-Whitney U-tests (Novice vs Experienced)

Measure	*U*	*Z*	*sig. (2-tailed)*	*Effect size (r)*
1. Mean f0	46.0	-1.120	0.263	0.212
2. SD	18.5	-2.661	0.008*	0.503
3. PDQ	10.5	-3.108	0.002*	0.587

3.2 RQ2: Chinese vs European

The average values of the pitch measures are given in Table 5 for the Chinese and European presenters (NNS). The values show the European presenters have higher averages for SD and PDQ.

Table 5
Pitch values for Chinese and European presenters

	N	*Mean f0*	*SD*	*PDQ*
Chinese presenters	10	206.6	31.3	0.132
European presenters	12	181.4	35.7	0.158

Mann-Whitney U-tests (Table 6) show that all measures are not significant ($p>0.05$). These results suggest that we can reject hypothesis H2.

Table 6
Mann-Whitney U-tests (Chinese vs European)

Measure	*U*	*Z*	*sig. (2-tailed)*	*Effect size (r)*
1. Mean f0	52.0	-0.528	0.598	0.112
2. SD	49.5	-0.693	0.488	0.148
5. PDQ	41.0	-1.253	0.210	0.267

3.3 Rating exercise

Seven samples were selected for the rating exercise out of the twenty two in total. This number was deemed to be the maximum that could be rated if the exercise was to be kept to reasonable time and cost limits. The seven samples included a mixture of Chinese and European students, and low and high pitch range values as measured by PDQ (see Table 7).

Table 7 shows the average ratings from the panel of judges for each of the seven samples. The PDQ for each presenter is also shown for correlation purposes. Internal reliability for the intonation construct and the comprehensibility construct as measured by Cronbach's alpha was 0.870 and 0.987 respectively.

Table 7
Average ratings for presenters in rating exercise

Presenter no.	*Gender*	*L1*	*Intonation*	*Comprehensibility*	*Grade*	*PDQ*
Presenter 1	F	Chinese	3.00	3.33	56.4%	0.140
Presenter 2	M	Spanish	4.11	4.75	68.9%	0.183
Presenter 3	F	Czech	2.79	4.00	59.4%	0.073
Presenter 4	M	German	3.58	4.61	67.1%	0.286
Presenter 5	M	Chinese	2.29	1.86	47.1%	0.103
Presenter 6	F	Chinese	2.57	1.39	41.6%	0.187
Presenter 7	M	Chinese	3.23	3.26	54.6%	0.161
Average	*3:4*		*3.08*	*3.31*	*56.4%*	*0.162*

Pearson's correlation calculations (Table 8) show that there is no significant correlation between PDQ and any of the three measures obtained from the rating exercise.

Table 8
Pearson's correlation calculations

		Intonation	Comprehe nsibility	Grade
PDQ	Pearson Correlation	0.368	0.567	0.313
	Sig. (2-tailed)	0.417	0.185	0.494
	N	7	7	7

4 Discussion

The results overall suggest that the pitch range of the NS experienced presenters is significantly higher than the NNS novice presenters, but that there is no significant difference between the Chinese presenters and the European presenters. Thus hypothesis H1 is upheld but not H2. The subsequent discussion will consider each research questions in turn.

4.1 RQ1: Novice vs experienced

The results suggest that experienced presenters (in the form of NS lecturers) do exhibit a greater pitch range in their spoken output when delivering monologues to an audience. This is as predicted by hypothesis H1 and is perhaps not surprising since the experienced presenters are not only native speakers of English but have had many years of experience honing their voices while delivering lectures. Their lively and charismatic voices use the full range of intonation, along with rhythm and loudness, in a "prosodically engaging manner" (Hincks 2004) to command authority and retain the audience's attention. The NNS presenters, who are novices by comparison, produce monologic discourse that is flatter and more undifferentiated (Tyler, Jefferies and Davies 1988).

While visual representations of pitch do not always faithfully represent aural perception, a short comparison is given between a novice and

an experienced presenter to highlight the difference in the form of pitch traces taken from the Speech Analyzer software (Figures 1 and 2). The experienced presenter (Figure 2) exhibits a much wider pitch range overall and has higher pitch falls at the end of tone units and paratones. This greater use of pitch range is clearly evident when listening to the experienced presenter's voice and the assumption is that not only does this convey a more lively and charismatic presenter (which impacts on audience engagement and understanding) but also enables the speaker to signal major and minor paratones more effectively (Pickering 2004). The novice presenter (Figure 1) by contrast has a much narrower pitch range.

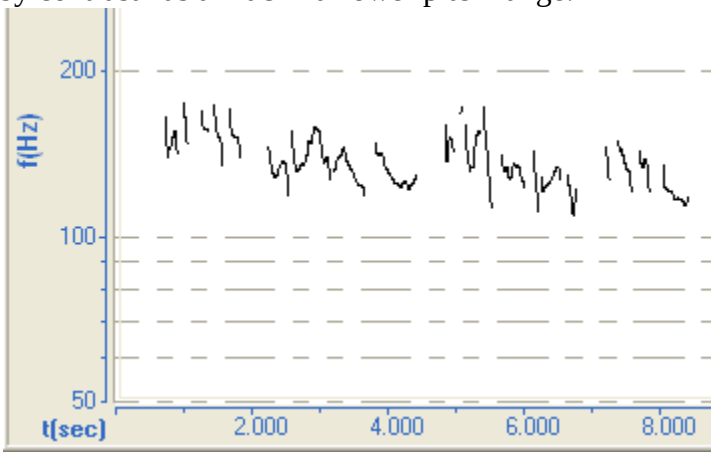

Figure 1
Novice presenter pitch trace
[hyperlink to audio1.mp3 here]

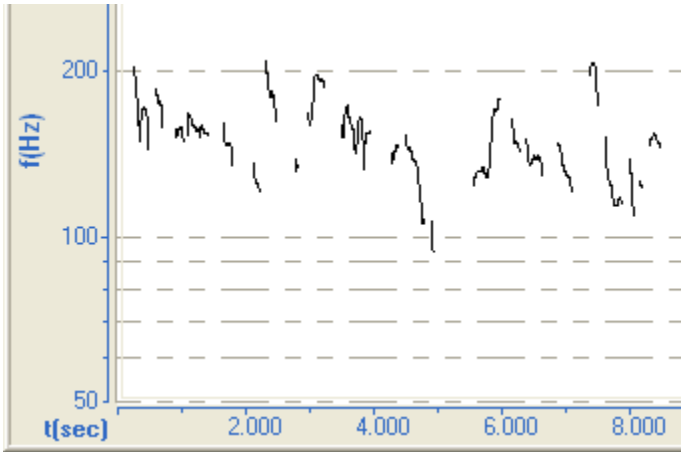

Figure 2
Experienced presenter pitch trace
[hyperlink to audio2.mp3 here]

4.2 RQ2: Chinese vs European

The results show that there was no significant difference in the pitch ranges of the Chinese and European novice presenters on all measures which suggests we can reject hypothesis H2. If we look at the results of the rating exercise we can gain some insight into why this is so. The rating exercise showed no correlation between any of the measures (intonation, comprehensibility, grade) and PDQ. This is somewhat surprising because we might have expected at least intonation and PDQ to correlate since both measures are related to pitch: presenters judged to have been rated highly for intonation, we might hypothesise, will have a higher PDQ. However, this was not the case.

One possible explanation is that pitch range as an absolute measure of intonation is perhaps too crude a measure to highlight perceived differences in the two groups of presenters. A better way to conceive of the difference is from a qualitative perspective rather than a purely quantitative one. Thus notions of consistency and contrast might better explain differences rather than simply measuring the pitch range. Consistency would suggest that speakers need to signal tone and paratone boundaries in their output in a consistent way from the start until the end. Contrast would suggest that speakers need to use clear and explicit intonation patterns in order to delineate tone unit and paratone boundaries. Provided that a presenter has consistency and contrast in their intonation, then they are able to work within a narrow pitch range and still be effective. This does not of course exclude the possibility of them extending their pitch range and benefiting from this since, as we have seen, experienced presenters tend to use an expanded pitch range compared with novices. However, it does mean that research should probably look more towards defining and measuring consistency and contrast in intonation rather than simply calculating pitch range measures.

To illustrate the problem of using PDQ as a measure of the effectiveness of pitch range and speaking success, a comparison of two novice presenters is made in more detail here. Presenter 3 (Table 9) is a female Czech speaker with the lowest PDQ value (0.073) but with above average comprehensibility (4.00) and grade (59.4%) scores. Clearly this is a speaker who despite using a narrow pitch range has been relatively successful in making herself understood. Presenter 6 (a female Chinese speaker) in contrast has an above-average PDQ (0.187) but has been rated well below average on scores of comprehensibility (1.39) and grade (41.6%) which are the lowest of the seven samples. The PDQ values here do not represent well the contrasting fortunes of these presenters, and a more detailed consideration of the discourse is required in order to understand how

the pitch is deployed as a resource within the discourse rather than the simple pitch range measures themselves.

Table 9
Comparison of Czech and Chinese presenter

Presenter no.	*Gender*	*L1*	*Intonation*	*Comprehensibility*	*Grade*	*PDQ*
Presenter 3	F	Czech	2.79	4.00	59.4%	0.073
Presenter 6	F	Chinese	2.57	1.39	41.6%	0.187

Presenter 3 (see Example 1) had a consistent and contrastive deployment of intonation in order to effectively mark paratone boundaries through an interesting style commonly known as "upspeak" in which there is a high rise terminal on the majority of tone units (Warren 2005). At the end of paratones, however, the speaker clearly produced falling tones to signal the division of topics. This is illustrated in example 1 where a major paratone ends in line 3 to complete the topic of 'Nike' before switching to discuss 'Adidas'. The end of the paratone is clearly marked by a falling tone on line 3 which contrasts with the rising tones of lines 1 and 2. The high rise terminal marking then continues from line 4. In this case, paratone division is also helped by consistent pausing and discourse marking ('in contrary'). Despite the non-standard use of upspeak, the judicious use of rising tones and a contrasting falling tone at the end of the paratone, gave this student a simple yet effective way to delineate segments of the discourse despite the narrow pitch range, as measured by PDQ, that she was working within.

Example 1 [hyperlink to audio3.mp3 here]

1. | its tradeMARKS er are er ↗LOgo (0.3) |
2. | that you can see er ↗THERE (0.5) |
3. | and ↘SLOgan just er do it (1.4) | [END OF PARATONE]
4. | in ↗CONtrary (.) |
5. | er ↗adiDAS |
6. | addidas is a GERman ↗COMPany (0.5) |
7. | FOUnded in NINEteen forty ↗EIGHT (0.6) |

Presenter 6 (see Example 2) had less consistency and contrast in the prosody of her speech. The first change in paratone is signalled with falling intonation (line 4) but the anomalous intonation patterns on the surrounding units act to mask this change. There is no clear contrast between the tone unit at the end of the paratone and the surrounding tone units. Anomalous pausing (pauses not at clause boundaries or before/after discourse markers) also contributes to the confusion. Thus the discourse marking that is intended to signal a topic change in line 5 ('and the last point') has to compete with the anomalous prosody that surrounds it. Later on in the monologue (some tone units have been omitted for clarity) at line 9 the prosody of the speaker

signals a new paratone using high key even though the content is clearly linked to the preceding units (7 and 8) through a causal link and no new paratone was intended.

Example 2 [hyperlink to audio4.mp3 here]

1. | and er (1.4) also can HELP the people use er (1.2) →BIcycle (0.7) erm (1.4) |
2. | ↗well (0.7) |
3. | and (1.3) the ↗ne- (0.4) |
4. | er give SOME green ↘imPACT in the environment (0.4) | [END OF PARATONE]
5. | and the LAST point is the use some substain →ENergy (0.4) |
6. | er (0.5) the SOlar energy and the ↘WIND energy |

…

7. | and the third point is the pro- provide the battery rail ↘CAR |
8. | in the tourist er ↘PLACE |
9. | ↗because er it can protect ↘ANimal | [HIGH KEY]

These two contrasting styles were typical of the presenters throughout their monologues and illustrates how despite the relatively narrow pitch range of the first speaker, as measured by PDQ, a successful demarcation of the paratones was achieved and comprehensibility was relatively high. In contrast, the Chinese speaker with a wider pitch range produced less consistent and contrastive intonation which tended to mask topic changes and information hierarchies.

Conclusion

The research presented here has found that intonation pitch range is significantly higher in NS experienced presenters than NNS novice presenters. This expected outcome illustrates how experienced presenters are able to make use of their pitch range to exhibit lively and charismatic voices that are not only able to hold their audiences' attention but which are also able to demarcate effectively segmental boundaries such as paratones, thus rendering the monologue more comprehensible. A significant difference is not observed, however, in the pitch ranges of Chinese and European students, contrary to expectations. This has led to the suggestion that rather than simply considering quantitative measures of pitch range in NNS speech, a more holistic approach is needed in which the consistency and contrast of a range of prosodic features are taken as a whole. Students in effect have an array of prosodic features at their disposal which they deploy with measuring degrees of success in a consistent and contrastive manner. Those students that are more successful in this will inevitably be judged as more lively and less monotonous in their speech, and will enjoy greater levels of comprehensibility. The example presented here was of an unusual case of

'upspeak' which used a relatively narrow pitch range but which deployed the pitch change strategically to effectively segment the monologue into manageable chunks for the listener.

Pickering (2004) has also noted how non-native speakers of English, in her case International Teaching Assistants (ITAs), can struggle to deploy intonation:

> Analysis of the ITA data [i.e. NNS monologues] showed that these speakers were unable to consistently manipulate key and tone choices to create intonational paragraphs [i.e. paratones].
> (Pickering, 2004:38)

She concludes that there is "no simple comparison" between successful and problematic intonation deployment. In other words, there is no simple measure which can arbitrate between successful and unsuccessful use of intonation, suggesting that a holistic approach is more appropriate.

If consistency and contrast in prosody are key features of comprehensibility and liveliness in oral presentations, then future research really needs to consider how these criteria can be defined and evaluated. Simply measuring pitch values, as we have seen, provides little more than a one-dimension view of prosody and perhaps does not capture the holistic nature of success in speech in any meaningful way. For students and teachers of English, an understanding of how these values interact with each other and how they can be deployed strategically is necessary together with an awareness of how they can be acquired. Other considerations include an understanding of how prosody interacts with other linguistics systems such as grammar. Is it the case, for example, that grammatically consistent stretches of speech could carry most of the burden of communication while more erroneous chunks would require a more consistent and contrastive prosodic delivery in order for the same level of communication to be achieved? Knowing this would enable students of English, who often struggle to produce grammatically correct utterances, to fall back on the prosodic system at these times in their monologue. These questions and others raised here in this paper for future research may not have clarified matters so much but then could it really be expected that language learning would be so simple?

Acknowledgements

Funding: This work was made possible by a Teaching Development Grant (individual round) from the Higher Education Academy in the UK (grant no: FCS 685).

References:

Alsop, S. & Nesi, H. (2013) Annotating a corpus of spoken English: The engineering lecture corpus (ELC). In H. Mello, M. Pettorino & T. Raso (eds.), GSCP 2012 proceedings. Belo Horizonte, Brazil, 58-62.

Brazil, D. (1994) Pronunciation for advanced learners of English: Teacher's book. Cambridge: Cambridge University Press.

Busà, M.G. & Urbani, M. (2011) A cross linguistic analysis of pitch range in English L1 and L2. Proceedings of ICPhS 2011 (17th International Conference of Phonetic Sciences), Hong Kong, 380-383.

Clark, H.H. (1996) Using language. Cambridge: Cambridge University Press.

Clark, J., Yallop, C. & Fletcher, J. (2007) An introduction to phonetics and phonology. Malden, MA: Blackwell.

Derwing, T.M., Munro, M.J. & Thomson, R.I. (2007) A longitudinal study of ESL learners' fluency and comprehensibility development. Applied Linguistics 29.3: 359-380.

Foster, P. (1997) A classroom perspective on the negotiation of meaning. Applied Linguistics 19.1: 1-23.

Hincks, R. (2004) Processing the prosody of oral presentations. Proceedings of InSTIL/ICALL 2004 – NLP and Speech Technologies in Advanced Language Learning Systems, Venice, 63-69.

Hincks, R. & Edlund, J. (2009) Using speech technology to promote increased pitch variation in oral presentations. Proceedings of SLaTE Workshop on Speech and Language Technology in Education. Wroxall, UK.

Pickering, L. (2004) The structure and function of intonational paragraphs in native and nonnative instructional discourse. English for Specific Purposes 23: 19-43.

Roach, P. (2009) English phonetics and phonology: A practical course. Cambridge: Cambridge University Press.

Rosenberg, A. & Hirschberg, J. (2005) Acoustic/prosodic and lexical correlates of charismatic speech. Proceedings of Interspeech, - Eurospeech, 9th European Conference on Speech Communication and Technology, Lisbon.

SIL. (2012) Speech Analyzer version 3.1. SIL International. Available from: http://www-01.sil.org/computing/sa/ (accessed on 2 June 2015).

Thompson, S.E. (2003) Text-structuring metadiscourse, intonation and the signalling of organisation in academic lectures. Journal of English for Academic Purposes 2.1: 5-20.

Tyler, A. (1992) Discourse structure and the perception of incoherence in international teaching assistant's spoken discourse. TESOL Quarterly 26.4: 713-729.

Tyler, A. (1994) The role of syntactic structure in discourse structure: Signalling logical and prominence relations. Applied Linguistics 15.3: 243-262.
Tyler, A, Jefferies, A. & Davies, C. (1988) The effect of discourse structuring devices on listener perceptions of discourse. World Englishes 7.2: 101-110.
Warren, P. (2005) Patterns of late rising in New Zealand English: Intonational variation or intonational change? Language Variation and Change 17.2: 209-230.

Appendix 1. Sample rating sheet

	Please listen to the whole of the sample first before marking crosses (X) in the boxes which most closely match your opinion.		Strongly disagree	Disagree	Neither agree disagree nor agree	Agree	Strongly agree
1	The sample is easy to understand						
2	The student's voice sounds lively						
3	The message is difficult to follow						
4	The student uses intonation in a native-like way						
5	The student's voice sounds monotonous						
6	The discourse is comprehensible						
7	The sample lacks coherence						
8	The rise and fall in the pitch of the voice helps to segment the discourse						

If you were grading this student, what score on a scale of 0% to 100% would you give for the student's use of intonation? ☐

(NB: Question 2, 4, 5 and 8 relate to the intonation construct while questions 1, 3, 6 and 7 relate to the comprehensibility construct.)