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Title: How prosody marks shifts in footing in classroom discourse

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Abstract

Prosody refers to features of speech such as intonation, volume and pace. In this paper, we examine teacher-student dialogue in an English lesson at a secondary school in England, using Conversation Analysis notation to mark features of prosody. We also make connections with Goffman's theoretical concept of footing. We show that, within an episode of teacher-led plenary discourse, prosody may be used to signal shifts in footing between different kinds of pedagogic activity. We identify: (i) teacher-led IRF (Initiation-Response-Feedback) discussion; (ii) the teacher's modelling of exploratory talk; (iii) a shift to instruction-giving. If teachers are able to model the enquiring tone of exploratory talk, they may in turn encourage more thoughtful contributions from students.

Keywords

Prosody; footing; dialogue; discourse; conversation analysis

How prosody marks shifts in footing in classroom discourse

1 Introduction

Prosody has been described as the music of speech (Couper-Kuhlen & Selting, 1996a; Wennerstrom, 2001). The term corresponds to our common sense idea of 'tone of voice' and refers to parameters of the speaking voice which vary dynamically during face-to-face interaction. Chief features include: intonation; loudness; and temporal phenomena such as rhythm, tempo, and pauses (Couper-Kuhlen & Selting, 1996b; Szczepek Reed, 2006). Prosody is integral to spoken communication and conveys an extra dimension of meaning beyond what is articulated through the words alone (vocabulary and syntax). Research shows that speakers use prosody for a number of communicative purposes, including: to place emphasis on new or important items of information in an utterance; to lend coherence to shared discourse, indicating how turns by different participants are tied together into a cohesive, jointly-assembled text; and to express their constantly-shifting emotional stance towards the interaction-in-progress, for example the degree of enthusiasm or interest they feel for the current topic of discussion (Szczepek Reed, 2006; Wennerstrom, 2001). Speakers show acute sensitivity to one another's prosody in spontaneous dialogue and use prosody as a resource to convey subtle nuances of expression; for example, when conversation is flowing smoothly, there tends to be a regular rhythm of stressed syllables which is maintained across turns by different speakers, and conversely, a breakdown in this rhythm often signals a difficulty or difference of perspective which needs to be negotiated (Wennerstrom, 2001). Researchers working in the field of Conversation Analysis (CA) were among the first to draw attention to the significance of prosody for the accomplishment of social actions through talk-in-interaction (Sacks, 1992; Sacks, Schegloff, & Jefferson, 1974; Schegloff, 1998; ten Have, 1998), and most recent work draws on the findings and system of transcription developed in this tradition (Couper-Kuhlen & Ford, 2004; Couper-Kuhlen & Selting, 1996a; Ford, Fox, & Thompson, 1996).

There is a well-established tradition of research into classroom discourse, the language used by teachers and school students in lessons (Cazden, 2001; Edwards & Westgate, 1994). This has demonstrated the pervasive presence of certain typical features of interaction in this context, such as the Initiation-Response-Evaluation (IRE) sequence which constitutes the prototypical teaching exchange (Mehan, 1979; Sinclair & Coulthard, 1975). Repeated use of test questions by teachers in this manner produces the 'recitation script', in which students are asked to display their knowledge of the correct answer, but have little opportunity to develop their powers of reasoning (Applebee, Langer, Nystrand, & Gamoran, 2003; Gutierrez, 1994). This line of research has also generated proposals for the reform of styles of classroom interaction, such as: contingent responses by the teacher which seek to scaffold student contributions (Cazden, 2001); the genre of discursive teaching which uses authentic questions to invite students to explain their point of view (Young, 1991); and encouraging exploratory talk, in which students engage critically but constructively with one another's ideas (Mercer, 1995). Recent work has emphasised the potential value of dialogic modes of exchange between teachers and students for enhancing learning (Alexander, 2004; Nystrand, 1997; Skidmore, 2000, 2006; Wells, 1999), although empirical studies have also pointed to the continued persistence in practice of monologic recitation in which the teacher does most of the talking (Mroz, Smith, & Hardman, 2000; Skidmore, Perez-Parent, & Arnfield, 2003).

2 Theoretical background

Whilst existing research on classroom discourse has produced well-attested findings about common sequential properties of this register of language use, to date there are few studies which specifically investigate the prosodic features of speech in this context. Brazil developed a system for analysing the intonation of teacher talk (Sinclair & Brazil, 1982). Hellermann (2005b) demonstrated how teacher-led recitation talk is organised in paratones (a cohesive stretch of discourse analogous to the written paragraph), marked prosodically by the teacher's use of pitch resets, a high pitch peak being used

to mark the start of a new 'activity segment', typically following on immediately after an evaluation pitched low in the teacher's voice range to close the preceding topic of questioning. A study of a secondary English lesson has identified 'prosodic orientation' (Szczepek Reed, 2006) – in which the teacher echoes a student utterance and matches its intonation – as a means of affirming the value of student-initiated contributions to whole-class discussion (Skidmore, 2008). An analysis of teacher monologue in higher education has shown how the lecturer uses high pitch accents to emphasise new items of information as they are introduced (Wennerstrom, 2001). A discussion of the rhythm and tempo set by the teacher's use of known-answer questions in a US elementary school has shown how children who fail to answer 'on cue' may have their turn-at-talk stolen by other class members who are quicker off the mark (Erickson, 2004). A study of co-teaching in high school science lessons in the US has shown how a novice teacher comes to adopt the intonation contour used by a more experienced colleague in interjections used to check that the students are following his exposition of a concept (Roth, 2005). A study of repetitive feedback moves by teachers in the IRF exchange uncovered a systematic use of prosody that coincides with a teacher's positive assessment of the student response (Hellermann, 2003).

The present paper reports the findings of a study of teacher-student dialogue in an English lesson in a secondary school in the UK. The study focussed particularly on how participants use prosody in this context to accomplish changes in 'footing' (Goffman, 1981). Goffman defines the concept of footing as follows: 'A change in footing implies a change in the alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance' (Goffman, 1981, p. 128). He goes on to suggest that it implies a prosodic unit (rather than a syntactic one), marked by contrasts in pitch, volume, rhythm and stress. Goffman further points out that the participation status of the recipients of speech in a social encounter may differ and encompasses the potential roles of eavesdropper, overhearer and bystander, as well as the addressed and unaddressed official recipients of talk. Thus, for example, the listener to a speech from the podium is cast in a different role from that of the temporarily silent co-conversationalist, since a

member of the audience for a speech does not usually have the right to take the floor, unlike someone taking part in a conversation. There is a difference in the participation framework of the two situations, which places the activities on a different footing. Goffman goes on to decompose the conventional notion of 'speaker', the producer of talk, along three dimensions: the animator (the individual producing the utterance); the author (the person who has selected the choice of words); and the principal (the person who is committed to the position expressed, the evaluative stance conveyed by the utterance). He calls these three dimensions the 'production format' of a given utterance, and shows that they need not always coincide. For example, when we quote the words of someone else in our speech, the animator (the person producing the utterance) differs from the author (the person who originally chose the words quoted); and of course, quotations can be multiply embedded, as in 'You claimed she said', in which case a different animator, author and principal may be implied within a single utterance. For Goffman, the permutations of participation framework (the role of the 'hearer') and production status (the role of the 'speaker') define structural changes in footing. But, he adds, much more nuanced shifts in footing are possible which need to be identified prosodically rather than in purely structural terms, for example a speaker's temporary shift to a 'playful' modality in the midst of 'serious business' talk.

For the purposes of the present paper, the key point about the concept of footing is that different kinds of shared social activity can be distinguished within the boundaries of a single social encounter. So, for example, in a classroom lesson, the teacher's discourse may shift between formal exposition akin to lecturing, the give-and-take of class discussion, and informal small talk where they step out of the role of teacher for a moment to become a fellow conversationalist with an individual student. These represent shifts in footing, in Goffman's terms, i.e. 'changes of alignment' between the participants in the encounter, which are to a large extent signalled by variations in the prosody of speech. We are indebted to Hellermann's study of the co-construction of a 'quiz game' activity for pointing out the applicability of the concept of footing in the context of classroom discourse (Hellermann, 2005a). Hellermann found that systematic prosodic cues distinguish the quiz

game format from normal question-and-answer review talk led by the teacher. In the quiz game activity, students are organised into competing peer teams, and the teacher acts as the compère of the activity. Teacher evaluations of student answers are attended to for the binary right or wrong determination given by the teacher. The activity is analogous to game shows on television (Hellermann, 2005a). In the quiz game activity, teacher elicitation are characterised prosodically by slow pace and a high density of prominent syllables. This gives them the quality of 'relevant talk', which is particularly emphatic and requires close attention from listeners. In the quiz game, student answer bids are characterised by a higher pitch level (iconic of the intensity of emotional involvement which derives from the organisation of the activity into competing teams) (Hellermann, 2005a). Their greater level of excitement and involvement in the activity is also denoted by a corresponding increase in loudness of speech. Teacher evaluations are characterised by their faster pace and a falling intonation contour. This constructs the activity as a competitive game, as opposed to the normal instructional goal of trying to develop the students' understanding of subject matter. There is no expansion of student responses by the teacher, and no explanation of why an answer is incorrect. Hellermann's analysis shows how a distinctive type of classroom activity is constructed through the prosodic packaging of discourse: 'In the quiz game, prosody can be seen as a linguistic cue which works to establish a different "footing" by the teacher and thus, an activity different from other, more commonly occurring review-evaluation talk' (Hellermann, 2005a, p. 938).

3 *Methods*

3.1 *Methods of data collection*

Prosody is a common resource for collaborative interaction; for this reason, it is desirable to study how speakers use prosody during episodes of spontaneous talk as it occurs in the course of normal social activity, rather than under experimentally-controlled conditions (Couper-Kuhlen & Selting,

1996a; Szczepek Reed, 2006). In our study, we therefore used a naturalistic approach, gathering evidence of the prosody of teacher-student dialogue during whole-class discussion which took place during a regular lesson under typical classroom conditions. In order to examine the fleeting prosody of living speech, it is also essential to record the talk as it occurs, so that a detailed transcript can be built up for later analysis (ten Have, 1998). To this end, we used audio- and video-recordings to capture a corpus of speech data exemplifying the prosody of teacher-student dialogue. The viability of this approach was demonstrated in an earlier pilot study (Skidmore, 2008).

The instruments of data capture were two video cameras with built-in microphones. They were mounted on tripods, one positioned at the front of the room to one side and focused on the students, the other positioned at the rear of the room and focused on the teacher. The cameras were operated by the authors. We took a non-participant observation role during the lesson, aiming to record interaction between the teacher and the students without intervention on our part. In field recordings of spontaneous talk, a certain amount of speech data is always lost because of background noise or inaudible utterances, but the pilot study showed that most of the talk during plenary discussions could be heard sufficiently clearly for transcription. The audio-video recording was converted into MPEG format and imported into Transana for transcription. Transana is a purpose-built software program designed to assist in the qualitative analysis of audio-video data (Fassnacht & Woods, 2007).

Transcribing naturally-occurring speech necessarily involves an act of interpretation. We produced a first-stage transcript which aimed to represent the verbal content of the speech and to mark turn-taking; this is the kind of transcript which has been presented in much previous research on classroom discourse (Edwards & Westgate, 1994). On the basis of repeated joint listenings to the recording, we progressively built up a more detailed transcript which uses the conventions of Conversation Analysis to mark up prosodic features for analysis (Maxwell Atkinson & Heritage, 1984; Psathas, 1995; ten Have, 1998). A list of transcription conventions is included in the Appendix.

3.2 School context

The school chosen for the study is located in south-west England. It is a co-educational, non-selective 11-18 school with a total student population of c. 1500 students. All our visits to the school were facilitated by the Head of the English Department and he introduced us to the classroom teacher, a teacher in the first ten years of her career. To ensure ethical research, we followed national guidelines (ESRC, 2005). All participation was voluntary and we sought informed written consent. Through the Head of Department, we obtained permission from parents to audio- and video-record a lesson through letters sent out prior to the research visit. All the participants' names are anonymised with pseudonyms, and we ensured that the data collected were kept in a secure space, accessible only to the researchers.

We recorded a Year 10 English lesson focusing on the play 'An Inspector Calls', by J. B. Priestley, a set text for the General Certificate of Secondary Education syllabus which the class was following. The class has about 30 students with 50/50 gender ratio. The lesson took place in the morning in December 2008 and lasted 50 minutes. The timing of the observation, in the second half of the autumn term, means that the teacher and class had had the chance to become accustomed to one another's interactional styles. The pilot study indicated that sustained episodes of plenary discussion with a significant amount of student participation are to be found among this age group (14-15 years old). The lesson consisted of a mixture of teacher-led episodes, group work and individual student activities. In this paper, we concentrate on our analysis of an episode of teacher-led plenary discussion which occurred towards the end of the lesson. In this episode, the teacher asked a number of students in turn to read out three adjectives which they had written down during an interval of individual written work that immediately preceded the plenary discussion; the adjectives were to be words that described the character of one of the central characters in the play, Inspector Goole. We chose this episode by means of theoretical sampling (Strauss & Corbin, 1990), on the basis that on a first listening it was clear that several

aspects of speech prosody varied significantly during the discussion (e.g. hearable changes in pace and intonation of the teacher's speech). The segment transcribed and analysed in section 4 lasts approximately 45 seconds.

4 Results

4.1 Transcript of prosody

- 1 Teacher: TO:M (.) can you read me your three words please
- 2 Tom: °er° intelligent suspicious and sneaky
- 3 Teacher: ye:↓eh >nice combi↑nation<
- 4 ↑sneaky (.)>°particularly° sort of<
- 5 is slang but he does come across as sneaky (0.2)
- 6 (.hhh) e::r David can you read me your three
- 7 [please]
- 8 David: [I put] clever dominant °and subtle° (.)
- 9 Teacher: nice dominant and subtle ↑good contrast (.)
- 10 e:::r (.)Sue your ↑three
- 11 Sue: subtle (.) emotionless and re↑lent↓less (.)
- 12 Teacher: >yeh good I'm glad you got the emotion in (.)<
- 13 ↑that's ↓nice (.)
- 14 a:::nd ↑Paul °what did you choose°
- 15 Paul: I had er precise systematic and ↓strange
- 16 Teacher: >what was it< precise systematic and (.) <strange>
- 17 there ↑l:z ↓something (.)
- 18 >about him that is a bit odd isn't th-
- 19 we can't totally tell the sort of character he is<
- 20 and we're a bit like the other characters (.)
- 21 at the beginning °that° we're not totally sure
- 22 and it will be interesting to see how he develops
- 23 cos there's things that we find out (.)
- 24 about the sort of character that he is (.)
- 25 RIGHT (.) <finally your homework>

NB: All names are pseudonyms.

4.2 Analysis of prosody

Considered as a piece of classroom discourse, this constitutes an episode of plenary discussion led by the teacher, a single transaction demarcated by boundary markers (such as 'Right ...') which signal the opening and closing of a topically-related set (Mehan, 1979; Sinclair & Coulthard, 1975). The teacher is in a questioning role; the role of students is to read out their individual written answers (three word lists). The sequence of speaker turns broadly fits the Initiation-Response-Feedback (IRF) pattern which research shows is common in this situation (Cazden, 2001; Mehan, 1979; Sinclair & Coulthard, 1975). The teacher nominates a student and elicits a response from them (Initiation); the student offers their list of adjectives (Response); and the teacher accepts the response by repeating one or more of the words, then comments on their contribution (Feedback). However, our examination of the speech prosody suggests that changes in 'footing' can be detected within this episode of discourse, i.e. shifts in stance towards the work that is being accomplished by participants in the talk-in-progress (Goffman, 1981; Hellermann, 2005a). These can be described as:

1. teacher-led IRF discussion with minimal expansion;
2. a passage of 'thinking aloud' in which the teacher engages in exploratory talk; and
3. the termination of the discussion episode and a shift to instruction-giving by the teacher.

4.2.1 IRF discussion

In the first segment of the episode (lines 1-14), the talk conforms closely to the pattern of plenary IRF discussion described by many studies of classroom discourse (Mehan, 1979; Wells, 1999). The teacher's prosody indicates acknowledgement of student answers with minimal elaboration, before moving the discussion on by selecting the next speaker (Teacher with Tom,

David, and Sue). In her Feedback turns, the teacher selectively revoices the students' contributions by repeating one or more of the adjectives they offer (with Tom 'sneaky', l. 4; with David 'dominant and subtle', l. 9; with Sue 'emotion[less]', l. 12). Quoting a student's words in this way is a familiar method by which teachers validate the response as acceptable in teacher-led plenary talk, described as an acknowledgement act in early research on classroom discourse (Sinclair & Coulthard, 1975). In the present example, the teacher also adds a positive assessment of their ideas with short meta-discursive comments that signal her attitude of approval towards the individual contribution ('nice combination', l. 3; 'good contrast', l. 9; 'I'm glad you ...', l. 12). Though brief, these remarks help to make her praise more specific than would be achieved by a simple 'Good' or 'Well done'; they constitute expansions of the teacher's turn beyond a straightforward Evaluation move into Feedback, and signal that she is actively listening and responding to the students' discourse (Wells, 1999). Our transcription of the prosodic features of her speech, however, shows that she increases the pace of her interjections when providing Feedback comments (e.g. ll. 3, 4, 12). It is also noticeable that, after signalling her approbation, she pauses (e.g. l. 5, after 'sneaky', l. 9, after 'contrast'); then audibly hesitates with lengthening of vowel sounds (ll. 10, 14) before nominating the next student speaker. This repeated pattern of faster 'commentary' speech (which responds to the preceding student turn) followed by a drawn-out 'nomination' utterance (which selects the next student speaker) imparts a characteristic ebb and flow to the teacher-student exchanges in this sequence. Taken together, the prosodic design of her turns-at-talk in this passage briskly closes down the subtopic introduced in the immediately preceding student turn and decisively passes the floor to the following participant. The teacher's discourse here works to elicit a number of responses from different members of the class in a short period of time, whilst at the same time signalling that each student's turn is terminated after they have read out their three words, and that the teacher is not going to develop their contribution beyond a brief act of positive acknowledgement. After the teacher has given her Feedback, the teacher will make no further comment on the student's response, and none is invited from the student.

As noted previously, Goffman argued that differences in footing could be described in terms of variations in the production format and participation framework of an utterance. The production format is defined by distinguishing between the animator (the individual producing the utterance); the author (the person who has selected the choice of words); and the principal (the person who is committed to the position expressed by the utterance). In this passage, the teacher several times repeats words volunteered by the students. At these points, whilst she remains the animator of the utterance as the person speaking, she momentarily incorporates wording that is authored by the students; there is a difference between the animator and the author of these remarks. In her feedback turns, we can also detect a difference between the position to which the students' quoted words commit them ('sneaky', 'dominant and subtle' – comments on the character of Inspector Goole in the play), and the position to which the teacher's phrases of approval commit her ('nice combination', 'good contrast', 'I'm glad you ...' – comments on the discourse produced by the students). There is an interplay or dialogue between different implied principals within the teacher's turns. Goffman's theory here helps us to understand how the teacher exercises power through her control of classroom discourse in the IRF sequence. It is the teacher who has the authority to shift the footing of the interaction-in-progress by altering the production format of her speech, in part through the prosodic design of her utterances. By comparison, the students' contributions remain locked into simplest case of production format, in which animator, author and principal coincide. They have less scope than the teacher to shape the nature of the interactional work being undertaken in the evolving social encounter of the lesson.

The participation framework of an utterance is determined by the status of the recipients of talk, which may include the addressed and unaddressed official recipients, eavesdroppers, overhearers and bystanders. In her initiation moves in this passage, the teacher nominates specific students to take the next turn-at-talk ('Tom/David/Sue ... your three [words]'), clearly identifying the named individual as the official recipient of these utterances; at the moment of speaker selection, the rest of the class is for the time being cast in

the role of overhearers, who are expected to attend to the exchange-in-progress, but not to participate in it. We would argue, however, that there is a change in the participation status of the listeners in the topic expansions developed by the teacher in her Feedback moves. Although these remarks are officially addressed to the student who has just spoken, their function is to highlight and reinforce specific aspects of their contributions that the teacher regards as educationally significant. For this reason, the rest of the class are cast as unaddressed recipients of the teacher's utterances; they must not only attend to her speech, but understand and take note of the teaching point that she is making. This is most apparent in her handling of Tom's response (ll. 4-5: ' "sneaky" ... is slang, but he does come across as sneaky'), which accepts the substance of his comment, while expressing a reservation about his choice of words. There is a change, then, in the participation status accorded to the rest of the class in the teacher's speech, from that of overhearers in her initiation move to unaddressed recipients in her Feedback move, a shift which is marked by the prosodic packaging of her turns.

From this analysis, we can see that there are subtle shifts in footing in the teacher's discourse during this passage, detectable through variations in the production format and participation framework of her utterances, which correspond with textual and prosodic features of her speech to which we have drawn attention, including changes in intonation, pace and volume that are characteristic of Initiation moves on the one hand, and Feedback moves on the other. If teachers develop a greater awareness of how the 'music of speech' helps to demarcate changes in footing of this kind, they may be able to use their tone of voice in a more deliberate fashion to help students navigate through the fluctuating waters of class discussion.

4.2.2 Thinking aloud

In the following exchange (lines 14-24), the talk, though still led by the teacher, departs from the standard IRF pattern established during the preceding interactions. The segment begins with a differently worded initiation by the teacher ('what did you choose?', l. 14, instead of 'can you read me your three words please?' and variations on this formula in the preceding

teacher turns). The teacher's speech is also noticeably quieter in this utterance compared with her previous handovers. This combination lends a tone of genuine enquiry to her elicitation, whereas the preceding examples are really directives (functionally equivalent to 'Read your three words') that are pragmatically presented as questions. In her Feedback move after Paul's contribution (ll. 16-24), the prosody of the teacher's response signals that she is going to elaborate further on this subtopic; it is treated differently from the previous student turns. It begins with a comprehension check ('What was it?', l. 16, spoken quickly). In l. 16 she also repeats Paul's whole three word list, in contrast to previous turns, where she seized on a particular item for repetition and highlighting. She pauses before the final item in the list ('strange'), and places a marked emphasis on the word, elongating the vowel and slowing the pace of her speech. To our ears, this indicates the adoption of a more tentative stance towards Paul's preceding turn, giving the teacher time to think about how to formulate her response; it projects that she is going to do further work on this contribution. In l. 17, the rising-falling intonation and accentual emphasis on 'is something' have a quality of affirmation which open the way to further elaboration of her comment. In lines 18-24, having accepted an idea volunteered by the student, the teacher proceeds to develop and build on this theme. This begins with a marked increase in the pace of her speech (ll. 18-19), a floor-holding strategy indicating that she wishes to continue her turn beyond the immediate acknowledgement of the student's response. In her elaboration, in which the teacher expands and comments on what Paul has just said, there are several 'hedges', qualifying comments that soften the force of a declarative statement ('a bit', '[not] totally', 'sort of'). Each of these items in fact is used twice in ll. 18-24, as the teacher reformulates her emergent thinking about the topic as her turn is in progress. There is also a change in 'addressivity' in this passage (Bakhtin, 1986) in the teacher's use of the inclusive first person plural ('we') in contrast to the first person singular ('me'/'I') that she uses in her earlier turns. This explicitly marks her discourse as a collaborative production at this point, suggesting that she and the class are 'thinking together' and that the argument she is making embodies an enhanced collective understanding, an achievement that they have made

together rather than a preformulated piece of knowledge that she possessed in advance.

The production format of this turn differs in its developmental structure from that of the preceding teacher Feedback moves. At the beginning of her turn, the teacher again quotes the words spoken by the student in his preceding reply. As noted above, this time the teacher repeats all three adjectives as a phrase, without adding an initial evaluative remark as she had done in the previous cases (cf. 'nice combination', l. 3, 'nice', l. 9, and 'good', l.12). Repeating the whole phrase and suspending the teacher's evaluation in this way has the effect of underscoring Paul's words as a noteworthy contribution, whose significance the teacher is about to expand on. It foregrounds the student authorship of this point to a greater extent than in the previous exchanges and casts the teacher in the role of an admiring animator who is struck by the appositeness of her interlocutor's remark, placing them for the moment in a relationship closer to that of co-conversationalists of equal status than to the traditional hierarchical relationship of teacher-questioner and student-respondent. In the succeeding topic expansion ('there is something ...' l. 17ff.), there is a further modification of the production format of the teacher's utterance. At this point, the teacher endorses the view of Inspector Goole's character set out in Paul's choice of words and goes on to amplify and justify this position in discourse which represents her as speaking on behalf of the whole class ('we can't totally tell ... we're a bit like the other characters ...', ll. 19-20). Here, then, the teacher becomes the principal of the utterance, rhetorically committing herself to the point of view first advanced by Paul. Moreover, her use of the first person plural embraces the rest of the class, creating a combined voice that unites her and the student body as joint thinkers sharing a common perspective on this issue. Whilst the teacher is the animator and author of this passage of discourse, its phrasing suggests that they are all principals together, committed to a collective position. This analysis also indicates that the participation status of the students during this part of the exchange differs from that implied by the preceding turns. They all become the official recipients of the teacher's speech during this passage, which is addressed to the class as a whole, not just to Paul. In a sense, as we

have seen, the teacher's wording goes further and implies that she is acting as a medium who is merely giving voice to their unspoken thoughts at this point. She is externalising a dialogue between herself and the class, in which for the moment she enacts the role of respondent to her own question, as a means of extending and deepening the shared reading of the text which they are engaged in constructing together. We can see, then, that Goffman's theory of footing works well to account for changes of alignment between the teacher and the class that take place in this excerpt. In opting to cast her speech in different production formats during the episode, she alters the participation status accorded to the students, now individually and now collectively. Here, a segment of improvised elaboration in response to a student's contribution is embedded within a more tightly scripted episode of plenary IRF discussion. Goffman's framework also helps to elucidate the institutional nature of classroom discourse, as compared with everyday conversation. It is the teacher who has the social authority to establish, and change, the participation status of the students in the encounter, not the other way round. By contrast, in familiar conversation between peers, interlocutors may have greater power to negotiate a shared footing as the encounter progresses, to respond to the production format of the other's talk by accepting, rejecting or modifying the participation status which it grants them at a given moment.

The features we have described in this passage can be seen as indicators of 'exploratory speech' (Barnes, 1992), which is characterised by a sharing of the self on the part of teacher and students, where the teacher replies in kind to an idea offered by the student, the goal is to achieve enhanced mutual understanding of the topic in hand, and the mode of interaction is hypothetical and enquiring. Barnes contrasts this with 'final draft speech', which is characterised by presenting the self in a dramaturgical fashion, where the teacher's primary role is to assess student contributions, the goal of the activity is to reach a judgement of the value of student offerings, and the mode of interaction is expository (Barnes, 1992, p. 113). In the present instance, we can see an example of 'teacher uptake' (Nystrand, 1997), in which the teacher dwells for a moment on an idea introduced by the student

and develops its significance, putting it on the table for later discussion, whilst at the same time signalling through the tentative quality of her prosody that this is 'first draft' speech, not the final word on the matter. We might see this as modelling the qualities of 'thinking aloud' for the class, showing that it is acceptable to speak this way in discussion work in English lessons, and demonstrating ways of achieving this reflective tone of voice which are then available for students to appropriate and make use of on future occasions. It is possible that this marks a moment of heightened intersubjective understanding between the teacher and her class, although we would need to examine subsequent examples of student talk, perhaps from later lessons on the same text, to be sure of this. As it stands, we can say that her talk at this point embodies the unfinalised nature of dialogue, in Bakhtin's terms (Bakhtin, 1984).

4.2.3 Instruction-giving

The final segment of the excerpt (line 25) marks a shift to a different kind of alignment again between teacher and class. 'RIGHT' (l. 25, spoken loudly and followed by a micropause) is a boundary marker that signals a transition to another transaction within the lesson, here the setting of the homework task. The prosody of the teacher's speech in the succeeding utterance alters noticeably from that used in her previous turns. In particular, the pace of her speech is slower, and there is a high density of prominent syllables, marked by increased loudness and a perceptible placing of stress on parts of the words spoken (in the phrase 'finally your homework', l. 25). These characteristics highlight the talk as especially 'relevant', where the speaker emphasises that something is being said that listeners should pay particularly close attention to (Hellermann, 2005a). In the context of teacher talk in the classroom, it is clear that no student responses are expected at this point; their role is to listen and take note, as the teacher gives instructions to guide a future writing task designed to follow up on the oral work in which they have just been engaged.

The footing of this talk is more straightforward to describe than the previous exchanges. Here the teacher resumes full control over the classroom

discourse. She speaks in the first person as animator, author and principal of her speech, being wholly responsible for producing the utterance, selecting the words in which it is articulated, and putting forward the position expressed. There is a marked shift in the participation status defined for the students. They remain the officially addressed recipients of the teacher's talk, but the mode of address changes radically from the dialogic intersubjectivity established by the preceding passage of 'thinking aloud'. This utterance is an imperative, a directive issued by the teacher to the class about an activity she requires them to carry out; it is '*your* homework', not '*ours*'. We would also argue that in this kind of instruction, the teacher simultaneously addresses each of the students as an individual, rather than treating them as a collective as she did in her previous utterance. Her talk sets up a task that each of them is expected to perform on their own, rather than advancing a shared understanding of the text that they have reached together. The teacher also explicitly marks her power to define the sequence of events in the lesson (this utterance is being made 'finally', i.e. discussion is now closed and she is bringing the lesson to an end). In Bakhtinian terms, this can be described as a shift from the semantically open character of 'internally persuasive discourse' to the commanding tone of 'authoritative discourse' (Bakhtin, 1981), a shift that is clearly marked by the noticeable alteration in the prosody of the teacher's speech which we described above.

5 Discussion

As a follow up to the preliminary prosodic analysis that we carried out on the extract of discourse we have presented, we also arranged a feedback session with the teachers in the school where the lesson was recorded. This was in part to seek validation from the participants (Reason & Rowan, 1981). We returned to the school a month after the first visit for one hour at the end of the school day, when we met the English teacher who taught the lesson and the head of the English department to share our analysis and invite their views. They both commented that our analysis was helpful in raising their awareness of how teachers talk during whole-class discussion. The class teacher found

that watching a video clip and listening to her voice, although sometimes an uncomfortable experience, made her pay attention to otherwise taken for granted (or overlooked) prosodic features; volume, pitch, and speed of speech, she agreed, are important to understanding classroom talk. Both teachers pointed out that there are functional and structural limitations which affect how dialogic the teacher can be in her interactions with the class: for example, when little time remains before the end of the lesson, the teacher cannot afford to be too exploratory in the conduct of plenary discussion, and the discourse therefore necessarily becomes more teacher-controlled. Furthermore, the teachers suggested a link (which we had not perceived) between prosody and the confidence level of students; for example, the rising-falling intonation used by Sue in l. 11 indicates that she is uncertain about her contribution and is seeking affirmation from the teacher. The teachers also emphasised that prosody manifests differently depending on the structure of the setting and group dynamics, and is affected for instance by the formality or informality of the discussion as a part of the lesson structure, and by class size. For us, this feedback session was also helpful as it provided a way of achieving confidence in our analysis. For instance, responding to our analysis of Paul's prosody, the English teacher reflected on the video clip and recalled the moment when she received Paul's answer (l. 16). She confirmed our analysis of her talk at that moment by stating that she was caught off guard by an answer that she did not anticipate. The teachers valued our analysis of this as an example of exploratory talk, modelling the practice of thinking aloud, and felt that the detailed examination of prosody was helpful as a tool for developing reflective practice.

6 *Conclusions: The implications of prosodic analysis for our understanding of classroom discourse*

We have shown that, within an episode of teacher-led plenary discourse consisting of linked IRF sequences, the prosody of speech may be used to signal boundaries between different kinds of pedagogic activity. Specifically,

through the use of CA notation, we highlighted three major shifts in footing (Goffman, 1981) within the transcribed sequence, namely:

- (i) teacher-led IRF discussion, marked prosodically by a fast interaction pace and the echoing of student answers with minimal uptake;
- (ii) a passage of 'thinking aloud' by the teacher, in which she pauses for thought and reflects on an unexpected contribution by a student, marked prosodically by variations in the pace of speech (slow pace with vowel lengthening, followed by quickened tempo), and by the use of hedges and the first person plural mode of address; and
- (iii) a shift to authoritative discourse, in which the teacher gives instructions to the class, marked prosodically by an increase in volume and the frequent use of heavily stressed syllables.

These shifts in footing are significant for the type of educational work being carried out and are rendered visible through marking variations in intonation, volume and pace in a way which would not be fully apparent with a methodology which represented the wording of discourse without marking its prosody. We therefore suggest that fine-grained analysis of the prosody of teacher-student dialogue of the sort we have pursued in this paper has the potential to reveal aspects of the dynamic flux of classroom interaction which previous research in this area has left untouched and which are of pedagogic import.

It is important to stress that we are *not* suggesting that one type of footing or prosody is better than another in classroom discourse; it is a matter of fitness for purpose. Indeed, we admire the way in which the teacher manages the transitions from one pedagogic footing to another so smoothly. Research on classroom discourse, however, indicates that it continues to be dominated by teacher talk in the form of statement-making or the asking of display questions to which the teacher already knows the correct answer; speculation and dialogue with students about ideas are rare (Galton, Hargreaves, Comber, Wall, & Pell, 1999). However, if teachers are able to model the tentative,

enquiring tone of exploratory talk during plenary discussion, as in the transcript analysed in section 4.2, they may in turn encourage more thoughtful and considered contributions from students. There is evidence in other episodes in the present lesson that the class responded in just this way to teaching of this kind, a responsiveness achieved in no small measure through the teacher's sensitive command of prosody or 'tone of voice'.

Some important questions remain to be resolved by future enquiry in this field. First, our study has focussed principally on the teacher's use of prosody to signal shifts in footing in the context of whole-class discussion. Further research is needed to determine whether prosodic features modelled by the teacher (such as the passage of 'thinking aloud' talk identified in our analysis) are naturally taken up by students in their own talk in other contexts, or whether further mediation is required beyond modelling of a speech genre by the teacher to ensure its appropriation by students. Secondly, empirical studies are needed to describe and account for the ways in which speech prosody functions in different contexts for talk which are regularly found in classrooms, for example in small group settings. Again, previous research has studied the way in which different kinds of discourse and modes of interaction can occur when students work together in small groups (Mercer, 1995), but we would predict that students also need to adapt their prosody significantly to engage in successful collaborative group work, not least because the pace and intonation of speech are very important cues for holding the floor and projecting the end of a turn-at-talk in informal, unrehearsed speech settings (Sacks, et al., 1974). Finally, prosodic orientation – 'the conversational activity of displaying awareness of another speaker's prosody in the prosodic design of one's own next turn' (Szczeppek Reed, 2006, pp. 33-34) – is known to be an important means in other contexts by which speakers gauge how far they have reached a shared understanding of the topic in hand, and is often used to signal the kind of emotional commitment that speakers feel towards the interaction-in-progress (how interested, excited, bored or confused they feel in the course of the unfolding social interaction). The extent of understanding shared by teacher and students, and the interest and enthusiasm they feel towards the topic of the lesson, are surely germane to the success of

classroom pedagogy. 'For who,' as Sir Philip Sidney asked in the 1580s, 'will be taught, if he be not moved with desire to be taught?' (Shepherd, 2002, p. 94).

Notwithstanding the limitations of the present study, our analysis of the prosody of teacher-student dialogue leads us to be confident that research using this methodology has the potential to generate further insights into previously unexplored aspects of classroom discourse which affect how students experience their own involvement in the learning process. Greater sensitivity to the workings of prosody in this context may suggest ways in which teachers can use the 'music of speech' to improve the practice of classroom discussion, help to develop students' powers of spoken communication, and enhance our understanding of pedagogy as an improvisational activity (Sawyer, 2001), in which success depends on ex tempore reciprocal adjustments made by both teacher and learners to the performance of the other party.

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Appendix: Transcription conventions

[]	overlapping utterances
=	latched utterances
(.)	micropause
(0.8)	measured pause (seconds)

gra:::dually	lengthening, according to duration
th-	abrupt cut-off of speech sound
<u>nice</u>	accentual emphasis
°they°	quieter speech
↑	rising intonation
↓	falling intonation
< >	slower speech
> <	faster speech
(.hhh)	audible in-breath
[...]	omitted speech
(there)	doubtful transcription
((coughs))	description of action
TOM	especially loud speech

Source: (Maxwell Atkinson & Heritage, 1984).

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