

Figure 5.8: Visualisation of a time measure

At this stage the basic visualisations of each activity strand were printed, and further analysis could take place (cf. chapters 6 and 8). The modular approach to visualising the activity strands and threads allowed a great deal of flexibility in presenting the visualisations, without having to go back and redo the time-consuming procedure every time (cf. discussion in sub-section 5.2.2). That is, the visualisations of individual activity strands and threads could be combined through positioning one above the other in a worksheet.

The visualisation of all the activity strands and threads followed the same overall procedure described in the present sub-section. Section 5.3 includes a detailed description of the conventions used in the visualisation of each activity strand and thread.

5.3 Coding and Visualisation of Each Activity Strand and Thread

This section describes the coding and visualisation of each of the activity strands and threads identified in the learner interaction data (cf. sub-section 5.2.1). The discussion of each activity strand and thread is organised into two sub-sections. The first sub-section includes a discussion of why and how the relevant strand or thread was identified in the data, as well as a detailed description of the coding of the strand or thread. Appendices that contain sample MS Excel worksheets, as well as extracts of transcribed learner interaction data support this description. Another sub-section provides an introduction to the conventions used in visualising the relevant strand or thread. This introduction is supported by sample visualisations.

5.3.1 Coding of the Writing Strand

In all four successive role-play tasks (cf. section 4.5) the pupils had to compose and write a dialogue between two fictional characters. In the written texts that the pupils produced, this dialogue had a recognisable turn-taking structure, constituting a conversation between the two fictional characters. The only exception to this turn-taking structure was a title, which pairs

sometimes included, and the occasional voice of a narrator. Figure 5.9 is a sample written text of one of the pairs of participants, and it illustrates this turn-taking structure. The figure shows the title, the dialogue turns of the two fictional characters in the role-play (a teacher and a pupil named Veronica), and a final line with text to be spoken by a narrator (fourteller represents the pupils' creation of an 'English-sounding' version of the Norwegian word for narrator).

The teacher and pupil

Teacher: Why are you late for class?
Veronica: I, I, I, dont now.
Teacher: I want a answer!
Veronica I playd fottboll and I dont hear the bell.
Teacher: Thats the rudest I aver heard
Veronica: But it is true.
Teacher: But were du play fottboll.
Veronica: I, I, I, I, I playd fottball utesaid the school.
Teacher: You now that you cant not do that.
 Down to the priceboll right now.
Fourteller: And then He promes to be inn the school.

Figure 5.9: Turn-taking structure in the pupils written texts

(‘Fourteller’ is a loan from Norwegian denoting the English word ‘narrator’)

The purpose of the identification and coding of a writing strand was to see whether the turn-taking structure of the pupils' written texts influenced the dynamics of learner interaction. Initial examination of the transcripts provided some evidence for such an influence. More specifically, the learners tended to write the dialogue one turn at a time. In addition, since the learners wrote the dialogue on separate sheets of paper, the progression in the writing of these turns sometimes differed between two learners in a pair.

The coding of the writing strand involved identifying the points in time when the pupils finished writing individual turns of the role-play dialogue. These points in time were called *completion points*. The writing strand was coded separately for each pupil in a pair, and individual completion points for each pupil were therefore available for later visualisation.

The coding of the writing strand in MS Excel is illustrated by appendix F, which contains a printout showing the layout of the worksheet used to code the writing strand.

A range of sources in the data aided the identification of the completion points in the pupils' writing of dialogue turns. One important source was the transcribed learner talk. That is, the pupils would sometimes give verbal signals indicating that they had finished writing a turn, or that they were ready to start composing the next turn. In addition, the pupils would often speak to themselves while writing turns. This particular learner talk, which later will be described as part of a regulative thread (cf. sub-section 5.3.7), was distinctive as compared to other types of learner talk. The scratching sound of pencils, signifying that the pupils were writing, was another source of evidence.

5.3.2 Visualisation of the Writing Strand

Based on the convention for distinguishing between treatment regimes in behaviour analysis (cf. sub-section 5.2.2), simple vertical lines, running from the bottom to the top of a visual display, were used to represent completion points in the writing strand. In addition, the text that each of the pupils' had written was included in two textboxes below the visual display of the completion points. Finally, both the completion points and the dialogue turns in the text boxes were numbered, making it possible to identify which turn a certain completion point referred to.

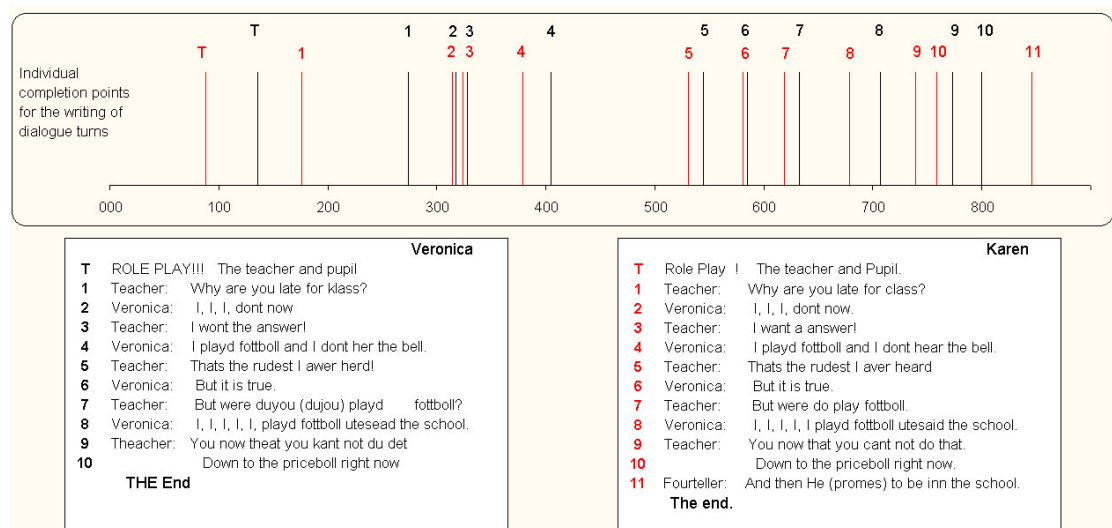


Figure 5.10: Sample visualisation of the writing strand

Figure 5.10 is a reduced size sample visualisation of the writing strand. Three additional conventions are evident in this sample visualisation. The colours red and black were used to distinguish between the two pupils' completion points. These colours were selected because

they provided a clearly visible contrast. Furthermore, the left hand side of the visual display was used for explanatory text (captions) explaining what is visualised (in this case: ‘Individual completion points for the writing of dialogue turns’). Finally, the line numbers identifying intonation units, or pauses, in the source transcripts were used as an approximation of the time-dimension along the horizontal axis (x-axis) (in this case running from 0 (000) to 900) (cf. sub-section 5.2.4). Once established, these three conventions were used in the visualisation of the remaining activity strands and threads.

5.3.3 Coding of the Attention Strand

The identification and coding of an attention strand was a combined outcome of what emerged from working with the transcribed data, existing categories in the learner interaction literature (cf. chapter 2), as well as theory in the field of spoken interaction more generally.

The observation that motivated an attention strand in the first place was that the pupils’ attention seemed to switch between different topic and activity orientations (cf. van Lier, 1988, chapter 6). However, this initial conceptualisation was difficult to identify clearly in the data. Categories suggested by Swain and Lapkin (2000), for learners’ use of L1 in language classroom activities, also influenced the identification of the attention strand. These categories distinguish between L1 used to *move a task along*, to *focus attention*, and to facilitate *interpersonal interaction*. However, the final conceptualisation of the attention strand draws on Goffman’s (1963) concept of *focused interaction*. Focused interaction is defined as “those occasions when two or more individuals openly join together to sustain a single common focus of concern” (Kendon, 1992, p. 326). Hence, the different categories for what the pupils were focusing on in different parts of the learner interaction, could be understood as instances of focused interaction. Furthermore, focused interaction is related to the concept of ‘attentional tracks’, which may be loosely defined as a trace of what participants interpret to be the main business of an encounter (Goffman, 1974, cited in Kendon, 1992, p. 328). This notion of a track ‘running through’ the interaction seemed particularly promising for the later visualisation of the attention strand.

Nevertheless, not all of the learner interaction data could be described as jointly sustained attention, as in focused interaction. That is, sometimes the two pupils ‘attentional tracks’ would diverge. Moreover, looking only at those periods when the pupils actually did engage in focused interaction seemed to neglect the dynamical process *leading to* this shared focus. Consequently, the concept of focused interaction was adapted, and instead each pupil’s individual *focus of attention* was identified. This made visible periods of focused interaction, in Goffman’s sense, while at the same time accounting for those periods of time when the pupils’ focus diverged.

Six different categories of foci of attention were identified and coded in the learner interaction data. These included pupils focusing on: 1) off-task topics, 2) task management, 3) generating content for the dialogue, 4) writing the dialogue, 5) rehearsing the dialogue, and 6) planning the performance of the dialogue. Note that these different foci of attention relate closely to the activity the pupils are engaged in (except the focus on off-task topics). The coding of the attention strand in MS Excel is illustrated by appendix G, which contains a sample printout showing the layout of the worksheet used to code this strand.

The coding of the attention strand followed the principle of *sequential relevance* suggested by conversation analysis. Schegloff suggests that this involves an in-depth analysis of participants understanding of a situation “as revealed in the ensuing talk which is built on just that understanding” (1997, p. 179). The coding, therefore, relied on the researcher having a relatively similar social and cultural background, and experience of a similar educational setting, as that of the pupils. In addition, the analysis benefited from the researcher’s knowledge of the activity the pupils’ were engaged in.

Despite the influence of conversation analysis, two simple rules were needed to facilitate an accurate visualisation of the attention strand. The first rule arose because there were times when one pupil in the interaction would be listening to the other pupil, and hence, despite not speaking herself, would be holding the same focus of attention as the pupil she was listening to. In these cases every line of transcription would be coded, for both pupils. In addition, it sometimes happened that the pupils paused briefly, but without changing their focus of attention. In these cases the line of transcription containing the pause would also be coded for the relevant focus of attention. However, this rule did not apply when the pause extended over more than one line of transcription. The coding of the attention strand in the sample MS Excel worksheet, in appendix G, reflects these two simple rules.

The six different foci of attention that were identified in the data are illustrated in the following extracts of transcribed learner interaction data. The accompanying discussion illustrates how the analysis coded pupils’ focus of attention.

Extract 5.9 shows pupils talking about an off-task topic. Before the interaction in extract 5.9 took place the teacher had approached the pupils to ask them if either of them needed to leave early. However, the teacher had spoken with a soft voice, and Veronica had not heard what was said. Hence, in line 499 she asks Karen what the teacher had said. Karen responds in line 500, but Veronica again repeats her question by uttering ‘hnh?’ in line 501. Once Veronica has understood what the teacher asked she goes on to describe things she needs to do after school in line 504. Although this intonation unit is mostly inaudible, it is clear from the later discourse that her focus of attention was still on the off-task topic. Hence, inaudible speech did not necessarily affect the coding of the attention strand. The pupils continue talking about this off-task topic until line 512 and 513, where Karen’s focus of attention is

back on the task. Note that there is no overt evidence in the extract that Karen attended to what Veronica said in lines 509 and 510. For this reason, no focus of attention is coded for Karen for lines 509, 510 and 511 (which is a pause). Note also that no focus of attention is coded for Veronica in lines 512 and 513. This is because there is no overt evidence that she attends to what Karen says in these lines. However, in lines 514 and 515 it is clear that both pupils' focus of attention is again off-task.

Extract 5.9: Focus of attention on off-task topic

| Line | Speaker | Text | Focus of attention | |
|------|-----------|--|--------------------|----------|
| | | | Veronica | Karen |
| 499 | Veronica: | <L1 what did he say L1>?/ | Off-task | Off-task |
| 500 | Karen: | <L1 if one of us had to leave early L1>./ | Off-task | Off-task |
| 501 | Veronica: | hmh?/ | Off-task | Off-task |
| 502 | Karen: | <L1 if one of us had to leave early L1>./ | Off-task | Off-task |
| 503 | | 1 | Off-task | Off-task |
| 504 | Veronica: | <L1 yes X X XX XX X XXX X you know L1>._ | Off-task | Off-task |
| 505 | | (..) | Off-task | Off-task |
| 506 | Karen: | <L1 you'll have time for that L1>./ | Off-task | Off-task |
| 507 | Veronica: | hmh?/ | Off-task | Off-task |
| 508 | Karen: | <L1 you'll have time for that L1>./ | Off-task | Off-task |
| 509 | Veronica: | <L1 but plus I have to do all the homework L1>./ | Off-task | |
| 510 | | <L1 and then I begin in the shop at five L1>./ | Off-task | |
| 511 | | 2 | | |
| 512 | Karen: | <L1 and then L1> -- | | Content |
| 513 | | <L1 and then it's la- L1> -- | | Content |
| 514 | Veronica: | <L1 I might have to go early L1>./ | Off-task | Off-task |
| 515 | Karen: | neish.\ {no} | Off-task | Off-task |

Extract 5.10 illustrates pupils' focus on task management (referred to as 'task' in the extract). In lines 251 through 253 Karen points out that Veronica writes the dialogue differently than she herself does, and provides a reason for why Veronica should not do the task this way. After a ten second pause, in line 259 Veronica finally responds. Her response shows that she was listening to Karen in lines 251 through 253. Hence, lines 251 through 253 are coded as task management for both pupils. In line 260 there is a brief pause. However, because the pupils continue talking about task management in lines 261 through 263, line 260 is coded as task management. In line 264 Karen reads one of the turns she has written, signalling that she is not focusing on task management anymore.

Extract 5.10: Focus of attention on task management

| Line | Speaker | Text | Focus of attention | |
|------|-----------|---|--------------------|-------|
| | | | Veronica | Karen |
| 251 | Karen: | <L1 you write it differently than me L1>./ | Task | Task |
| 252 | | <L1 you shouldn't do that L1>./ | Task | Task |
| 253 | | (.) <L1 you shouldn't copy that one L1>./ | Task | Task |
| 254 | | 2 | | |
| 255 | | 2 | | |
| 256 | | 2 | | |
| 257 | | 2 | | |
| 258 | | 2 | | |
| 259 | Veronica: | <L1 that L1>?/ | Task | Task |
| 260 | | 1 | Task | Task |
| 261 | Karen: | XX <L1 you should write the same as me L1>./ | Task | Task |
| 262 | Veronica: | <L1 yes but I have to see what you have written L1>./ | Task | Task |
| 263 | Karen: | <L1 yes L1>./ | Task | Task |
| 264 | | why are you late for class./ | | |

In extract 5.11 two pupils can be seen generating content for the dialogue they are composing (referred to as ‘content’ in the extract). The first clue used to identify this focus of attention is the repeated ‘and then’ in lines 454 and 455. Furthermore, Tim’s intonation unit in line 455 is uttered in Norwegian (cf. appendix E for transcription conventions), and a further intonation unit in line 456, which is uttered in English, follows this. This further intonation unit is in fact a suggestion, and the Norwegian utterances in line 454 and 455 ‘frame’ this suggestion. Thus, in this particular example, the structure of Tim’s discourse is used to identify the pupils’ focus of attention. Morten’s response in line 458, and the subsequent agreement the pupils arrive at in line 461, shows that he was listening to Tim’s suggestion. In addition, the pause in line 457 does not extend over more than one line of transcription. Hence, the entire segment is coded as focus on content for both pupils.

Extract 5.11: Focus of attention on generating content for the dialogue

| Line | Speaker | Text | Focus of attention | |
|------|---------|--|--------------------|---------|
| | | | Tim | Morten |
| 454 | Tim: | (..) <L1 and then L1> -- | Content | Content |
| 455 | | <L1 and then it says like this L1>.\ | Content | Content |
| 456 | | but you said that you go to the wrong school./ | Content | Content |

| | | | | |
|-----|---------|-------------------------------|---------|---------|
| 457 | | 1 | Content | Content |
| 458 | Morten: | <L1 why L1>?/ | Content | Content |
| 459 | Tim: | <L1 no L1>/ | Content | Content |
| 460 | | <L1 because we said that L1>/ | Content | Content |
| 461 | Morten: | okay./ | Content | Content |

Extract 5.12 illustrates pupils' focus on writing dialogue (referred to as 'writing' in the extract). The identification of the pupils' focus of attention in this extract relies on the preceding discourse, where the pupils were generating the content for the turn that they actually write in the interaction in extract 5.12. However, there are also some clues in the immediate discourse. For example, Veronica's truncated intonation unit in line 384 was a characteristic of the learners' talk when they focused on writing. Moreover, with retrospective knowledge of what the pupils wrote, Karen utterance in line 386 ('and I don't hear the bell') can be identified as helping Veronica to write the turn. Finally, the fact that Karen is helping Veronica, as well as Karen's laughter in line 389 (signified by the symbol @; cf. appendix E), indicates that both pupils hold the same focus of attention. Hence, the entire exchange is coded as focus on writing for both pupils.

Extract 5.12: Focus of attention on writing the dialogue

| Line | Speaker | Text | Focus of attention | |
|------|-----------|--|--------------------|---------|
| | | | Veronica | Karen |
| 383 | | 1.5 | | |
| 384 | Veronica: | I play -- | Writing | Writing |
| 385 | | I played football./ | Writing | Writing |
| 386 | Karen: | and I don't hear the bell./ | Writing | Writing |
| 387 | Veronica: | and (..) I (1.5) don't (.) listen the -- | Writing | Writing |
| 388 | | (..) <L1 no L1>.\ | Writing | Writing |
| 389 | Karen: | @@ | Writing | Writing |
| 390 | | 2 | | |

In extract 5.13 two pupils can be seen rehearsing the dialogue they had written (referred to as 'rehearse' in the extract). Since rehearsing the dialogue invariably involved pupils reading out what they had already written, the identification of this focus of attention was fairly simple. This is also the case in extract 5.13.

During rehearsal the pupils would sometimes notice something they felt was wrong. This is the case in lines 837 through 839, where Marcus changes 'you not' to 'you shouldn't'. In

such cases the analysis needed to establish whether the pupil had simply read the dialogue incorrectly, or whether the pupil noticed a mistake in the dialogue he had written, and swiftly changed it during the rehearsal. The former was the case in extract 5.13, and the entire segment of interaction was therefore coded as rehearsing. However, if the latter had been the case the lines where Marcus noticed the mistake (and made the correction) would have been coded as writing dialogue (for Marcus only).

Extract 5.13: Focus of attention on rehearsing the dialogue

| Line | Speaker | Text | Focus of attention | |
|------|---------|--|--------------------|----------|
| | | | Dennis | Marcus |
| 834 | Marcus: | ehm (.) <L1 yes L1>,\ | Rehearse | Rehearse |
| 835 | | (.) why you have brown s- -- | Rehearse | Rehearse |
| 836 | | (2) @why you have brown shoes today Jon,\ | Rehearse | Rehearse |
| 837 | | I said yesterday at you (.) not -- | Rehearse | Rehearse |
| 838 | | <L1 no L1>,\ | Rehearse | Rehearse |
| 839 | | shouldn't have brown shoes./ | Rehearse | Rehearse |
| 840 | Dennis: | ehm I have not any shoes,/ | Rehearse | Rehearse |
| 841 | | ehm the ehm shoes are ehm too expensive./ | Rehearse | Rehearse |
| 842 | Marcus: | are your family poor?/ | Rehearse | Rehearse |
| 843 | Dennis: | no we s- -- | Rehearse | Rehearse |
| 844 | | no we sleep ehm (.) but -- | Rehearse | Rehearse |
| 845 | | (..) but we sleep so long,/ | Rehearse | Rehearse |
| 846 | | (.) therefore we (.) not can go to the Rema 1000,/ | Rehearse | Rehearse |
| 847 | Marcus: | you are excused,/ | Rehearse | Rehearse |

The interaction in Extract 5.14 begins with pupils focusing on content, but then changes to pupils focusing on planning the performance of the dialogue. The extract makes clear how subtle such a switch in focus of attention sometimes was. In lines 602 through 608 Morten is suggesting content for the dialogue, framing his suggestions in Norwegian in line 603, as well as in lines 607 and 608. Furthermore, the suggestions are framed as something the fictional characters should *say*. For example, in line Morten utters: ‘and then he *says*’. Beginning in line 610, however, this reference to what the fictional characters should *say* switches to something the character should *do*. For example, in line 610 the suggestion is that the character should *turn*, in line 611 that he should *pull* a mask off his head, and in line 613 that he should *run* along. These are not things that the pupils write down as part of the dialogue. Rather, these are suggestions about *how* they should perform the role-play dialogue at the end of the lesson (cf. sub-section 4.4.2).

Extract 5.14: Focus of attention on planning the performance

| Line | Speaker | Text | Focus of attention | |
|------|---------|--|--------------------|----------|
| | | | Tim | Morten |
| 602 | Morten: | <L1 no L1>,/ | Content | Content |
| 603 | | <L1 and then he says L1>,\ | Content | Content |
| 604 | | it was the monkey,\ | Content | Content |
| 605 | | it ehm -- | Content | Content |
| 606 | | it wasn't me./ | Content | Content |
| 607 | | <L1 and then I said L1> -- | Content | Content |
| 608 | | <L1 and then I say here L1>,_ | Content | Content |
| 609 | | ehm -- | | |
| 610 | | <L1 and then he turns L1>,_ | Planning | Planning |
| 611 | | <L1 and then I pull off myself like the head L1>,/ | Planning | Planning |
| 612 | | <L1 and then L1> €€ €€ €€ | Planning | Planning |
| 613 | | <L1 and then run@ along L1>,/ | Planning | Planning |
| 614 | | €€ €€ €€ | Planning | Planning |
| 615 | Morten: | [@@@] | Planning | Planning |
| 616 | Tim: | @[@@@]@@@ | Planning | Planning |
| 617 | Morten: | <L1 yes do that then L1>?/ | Planning | Planning |
| 618 | Tim: | <L1 yes L1> @@@@ | Planning | Planning |

5.3.4 Visualisation of the Attention Strand

Since pupils' focus of attention was often sustained over several lines of transcription, the visualisation aimed to make this strand 'appear' as a state. At the same time, motivated by Goffman's notion of an attentional track (Goffman, 1974, cited in Kendon, 1992, p. 328), the visualisation aimed to make the attention strand appear as a 'track' that could be followed across time in the visualisation. Based on the convention for plotting states in the *Observer* software package (Noldus Information Technology) (cf. sub-section 5.2.2), the attention strand was plotted as short horizontal bars. In those cases when pupils held a same focus of attention over several lines of transcription these short bars would effectively appear as an unbroken, longer horizontal bar, giving the impression of a 'state'. At the same time, the resulting visualisation also resembled an attentional track that could be followed across time. Figure 5.11 is a reduced size illustration of the visualisation of the attention strand.

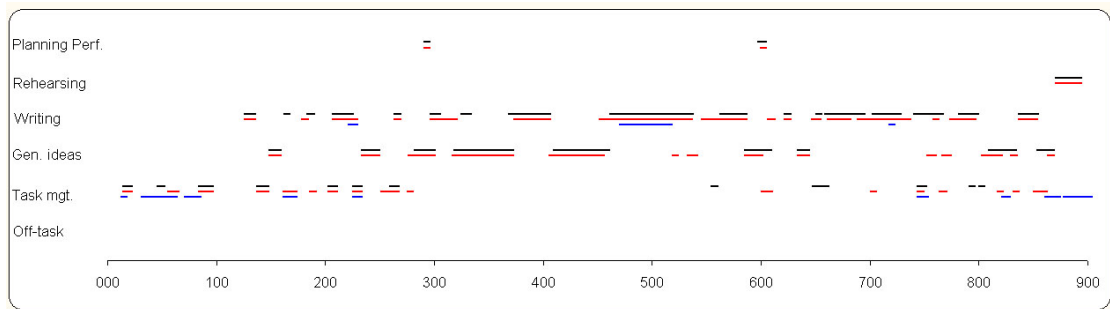


Figure 5.11: Sample visualisation of the attention strand

The additional conventions used in the visualisation of the writing strand were also incorporated in the visualisation of the attention strand. That is, the colours red and black were used to distinguish between the two pupils foci of attention, the left hand side of the display area was used for captions identifying each focus of attention, and the line numbers from the transcripts were used as an approximation of the time-dimension along the horizontal axis. One additional convention, used in the language code and regulative threads as well, was the use of the colour blue to indicate the focus of attention of any other speaker interacting with the pair of participants. Such another speaker would usually be the teacher, but could also be another pupil, and in a few cases the researcher. Figure 5.12 is a magnified illustration of such a contribution to the interaction by another speaker.

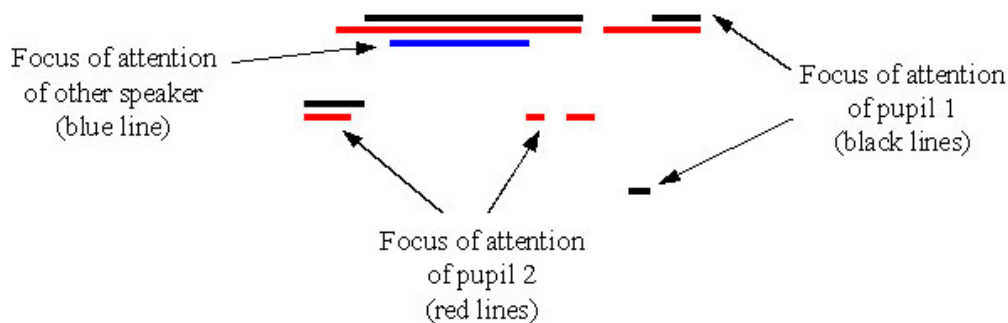


Figure 5.12: Visualisation of focus of attention for other speakers

5.3.5 Coding the Language Code Thread

The identification of a language code thread, defined as whether pupils were speaking L1 (Norwegian) or L2 (English), was motivated by existing findings from research on interaction between language learners. This research claims that first language use may serve several important functions in interaction (e.g., Swain & Lapkin, 2000; Anton & DiCamilla, 1999; Hancock, 1997; Legenhausen, 1991). In addition, there is some evidence that learners' first

language use may change across successive repetitions of similar classroom activities (Szostek, 1994; Brooks et al., 1997).

The coding of the language code thread involved a simple determination of which language the pupils were speaking in each intonation unit. That is, for each line of transcription the number of words in L1 and L2 were counted, and recorded. The language code thread was coded separately for each participant. The L1 and L2 use of other speakers interacting with the pupils (such as the teacher, the researcher or other pupils) was also coded, including the teacher talking to the whole class when the relevant pupils were, or were expected to, listen. Appendix H illustrates the layout of a sample MS Excel worksheet used for the coding of the language code thread.

There were a few idiosyncrasies in the identification of the language code thread. This led to the following rules being applied.

- Proper names, including both people and place names, were not counted.
- Marginal words, such as for example ‘hnh’ and ‘ehm’ were not counted.
- Contractions in both L1 and L2 (e.g., haven’t; isn’t; can’t) were counted as single words.
- Truncated (incomplete) words were not counted.
- Inaudible words were not counted.
- Words not clearly audible were counted if the language code could be determined.
- Repeated words were counted.

There were also some cases where pupils uttered Norwegian words with English pronunciation, and English words with Norwegian pronunciation. The former most often arose when the learners were having problems finding an English word. They then seemed to be testing whether a Norwegian word, pronounced with English intonation, was in fact the English word they were trying to find. Given the similarity between the two languages (Norwegian and English) it is likely that these learners had developed what Palmberg (1987, p. 74) calls ‘an intuitive (or experience-based) feeling’ for the possible similarities between the two languages. Palmberg takes such an intuition, combined with the willingness to use it, as creating a ‘potential’ L2 vocabulary that is greater than the ‘real’ L2 vocabulary. In a sense, therefore, the learners were trying to speak English, and these cases were coded as L2. The latter variety, English words uttered with Norwegian pronunciation, was most often part of an attempt to spell the relevant English word correctly (the researchers own experience as a Norwegian learner of the English corroborates this interpretation). Such words were also coded as L2 (English).

Given that the pupils were doing a writing activity, they would often spell words out loud. When this happened, each letter was counted as a word. This had the benefit of letting the

language code thread reflect whether pupils spelled out words using Norwegian names for letters or English names. In fact, all the pupils consistently spelled words using Norwegian names for letters. This rule also reflected that when spelling out words for each other, a single letter sometimes constituted an entire intonation unit.

None of the above specific rules had any major impact on the total number of Norwegian or English words that were coded. That is, the great majority of words were counted as either L1 or L2, without recourse to any of the above rules.

5.3.6 Visualisation of the Language Code Thread

No specific convention in existing visualisation techniques seemed appropriate for the visualisation of the language code thread. However, after some trial and error, very thin vertical columns, or lines, seemed to represent this thread with the desired detail. That is, the height of each vertical line represented the number of L1 or L2 words spoken by a pupil per intonation unit. To facilitate the interpretation of the visualisation, a scale for the vertical axis (y-axis), as well as gridlines, was included to indicate the length (in words) of the intonation units. Figure 5.13 is a magnified illustration of these features.

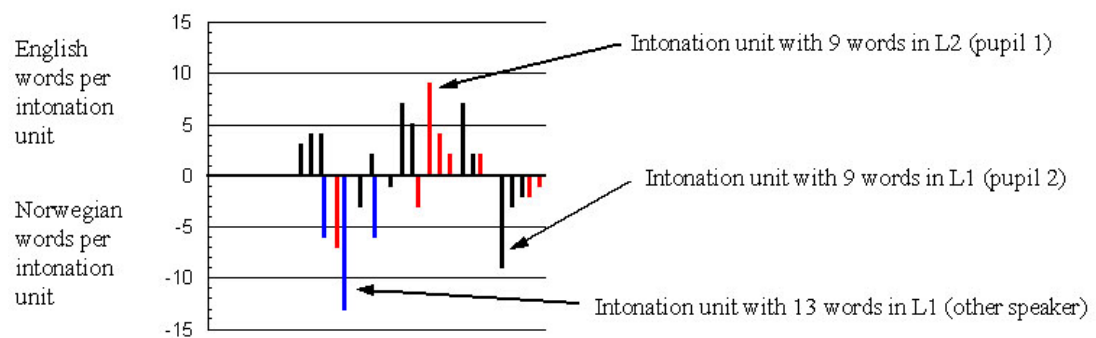


Figure 5.13: Magnified view of language code thread visualisation

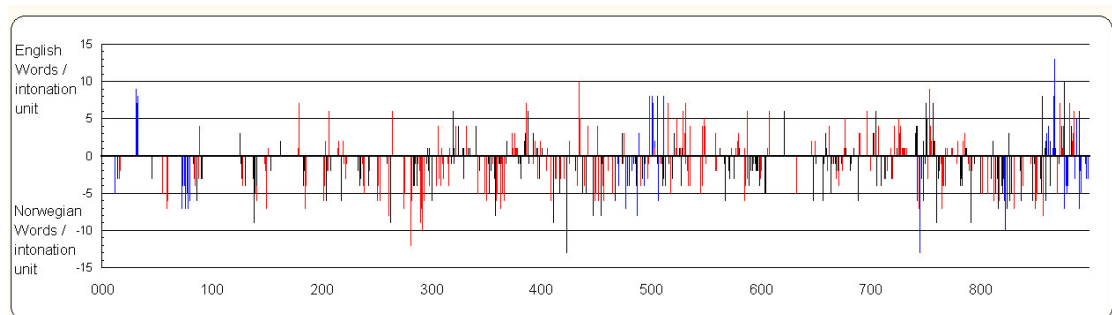


Figure 5.14: Visualisation of the language code thread

Other than the scale for the vertical axis, the same conventions that were used for the other activity strands and threads were applied to the visualisation of the language code thread. A reduced size illustration of the full visualisation of the language code thread appears in figure 5.14.

5.3.7 Coding of the Regulative Threads

An important element in the definition of the dynamics of learner interaction in chapter three was the concept of talking-and-thinking (cf. section 3.2.2). Moreover, the transcription of the learner interaction data took into consideration the concept of talking-and-thinking through its use of intonation units (cf. sub-section 5.1.2). Thus, the identification of two regulative threads may be seen as an extension of the underlying theoretical rationale of thesis, and the transcription of the data, to the coding of the learner interaction. At the same time, the review of the sociocultural research emphasised the role of learner talk in regulating learner interaction. The identification of two regulative threads reflects this same orientation to learner talk (cf. sub-section 2.3.3).

Table 5.1: Regulative activity and corresponding regulative functions

| | Regulative activity | Regulative function |
|-------------------------------|----------------------------|---|
| Non-prospective thread | Truncating | Formulating content, language, or both |
| | Pacing | Providing time to think or act |
| | Voicing | Keeping in mind what to write/what has been written; Facilitating spelling of L2 words |
| | Focusing | Framing or focusing next action |
| Prospective thread | Questioning | Requesting information |
| | Negotiation | Clarifying or confirming information |
| | Directing | Deciding how to do the task; Telling the other pupil what to do |
| | Suggesting | Putting content for the dialogue into shared domain |
| | Helping | Helping other pupil write L2 (unsolicited) |

Table 5.1 is an overview of the two regulative threads that were coded in the data. The regulative threads were formulated from nine distinct regulative activities identified in the pupils' learner talk. Each of these regulative activities was associated with a corresponding regulative function. This regulative function was helpful in the coding of the regulative threads. Finally, after a suggestion made by Nassaji and Wells (2000) that moves in interaction differ in terms of their degree of prospectiveness, a distinction was made between a *non-prospective* regulative thread, accounting for four of the regulative activities, and a *prospective* regulative thread, including the remaining five regulative activities.

In concrete terms, the distinction between the non-prospective and the prospective regulative threads can be described as follows. Non-prospective regulative activity, in the form of intonation units, represents utterances that do not predict a response from the other pupil. By contrast, prospective regulative activity, in the form of intonation units, represents utterances that predict a response from the other pupil.

This notion of prospectiveness appears in various guises in the discourse analysis literature. In Nassaji and Wells' use of the concept, the degree of prospectiveness is defined as the extent to which a move (a participant's utterance) determines the following move(s) (2000, p. 383). In conversation analysis the notion of adjacency pairs (cf. Sacks, 1992) predicts that particular utterances are followed by utterances that complete the pair, and if no such utterance follows then "that will be a notable omission" (Schegloff, 1972, quoted in Sinclair and Coulthard, 1992, p. 52).

For the prospective regulative thread an additional distinction was made between regulative activity that was cooperatively responded to by the other pupil in a pair, and regulative activity that was not responded to in a cooperative manner. Consistent with the view of conversation analysis, only if a response was noticeably inappropriate, or noticeable by its absence, was the regulative activity coded as uncooperatively responded to.

From the specification of regulative functions in table 5.1 it is clear that some of the regulative activities are associated with the attention strand (cf. sub-section 5.3.3). That is, helping activity only applies when pupils' focus of attention is on writing dialogue. Similarly, suggesting activity only occurs when pupils' focus is on generating content for the dialogue. In addition, voicing and focusing activity were associated with focus on writing and task management, respectively. However, these latter associations were not strictly observed in the coding. For example, it sometimes happened that pupils would be voicing what they had just written in an effort to generate content for a next turn. Similarly, it sometimes happened that pupils directed an aspect of the content or writing of the dialogue without it amounting to management of the activity as a whole. The remaining regulative activities are independent of focus of attention.

The coding of regulative activity was done individually for each pupil in a pair. In addition, prospective regulative activity was also coded for other speakers interacting with the pair. In the case of non-prospective regulative activity the corresponding regulative function could usually be located in a single intonation unit. Hence, this regulative activity was coded for *single* intonation units. In the case of prospective regulative activity, however, the corresponding regulative function was sometimes distributed over more than one intonation unit. When this was the case, only one of the intonation units involved would be coded. The coding of the regulative threads in MS Excel is illustrated by sample worksheets in appendices I (non-prospective regulative thread) and J (prospective regulative thread). In addition, the coding of each regulative activity is illustrated in detail in the following extracts and discussion. Where relevant, this discussion also points out the instances where double-coding between different regulative activities where allowed, and where this was avoided.

The possible significance of truncating activity was discussed in conjunction with the presentation of the transcription convention for truncated intonation units (cf. sub-section 5.1.3). The coding of this regulative activity involved identifying every occurrence of this particular transcription convention (cf. appendix E). Extract 5.15 illustrates the occurrence of truncating activity in the transcribed data.

Extract 5.15: Truncating activity

| Line | Speaker | Text | Regulative activity | |
|------|---------|---------------------|---------------------|------------|
| | | | Dennis | Marcus |
| 235 | Marcus: | why do y- -- | | Truncating |
| 236 | | (.) do (...) you -- | | Truncating |
| 237 | | (..) why do ha- -- | | Truncating |
| 238 | | <L1 no L1> do you,/ | | |
| 239 | | (1) [<L1 yes L1>],_ | | |
| 240 | Dennis: | [why] ehm -- | Truncating | |
| 241 | Marcus: | why do you -- | | Truncating |
| 242 | Dennis: | <L1 no L1>,/ | | |
| 243 | | (.) why you have./ | | |
| 244 | Marcus: | <L1 yes L1> O K.\ | | |

The identification of pacing activity was based on the observation that when pupils were struggling with a certain aspect of the writing activity a subtle form of learner talk would appear. This took the form of the Norwegian formulaic utterance ‘vent litt’. A literal translation into English would be ‘wait little’, or ‘wait a little’. A less literal translation would

be ‘wait a second’ or ‘hold on’. Just as there are different possibilities in English, slight variations on this Norwegian formulaic utterance appeared in the data (e.g., ‘vent a’ and ‘vent litt a’). The coding of pacing activity, therefore, was very nearly synonymous with identifying every occurrence of this formulaic utterance. Only twice, involving the same pupil, did pacing activity take on a different, and more overt, form. Extract 5.16 illustrates the appearance of pacing activity, in the form of the above-described formulaic utterance. The extract also reveals the subtle nature of this pacing activity, and how it did not predict any response from the other pupil.

Extract 5.16: Pacing activity

| Line | Speaker | Text | Regulative activity | |
|------|---------|---|---------------------|--------|
| | | | Tim | Morten |
| 154 | Tim: | wrong (..) school,/ | | |
| 155 | | 2 | | |
| 156 | | 2 | | |
| 157 | Morten: | <L1 yes L1> vent a [<L1 and then L1>] -- | | Pacing |
| 158 | Tim: | [<L1 and then L1>] Erik <L1 again L1>,_ | | |
| 159 | | <L1 and then like L1>,_ | | |
| 160 | | yeah,/ | | |
| 161 | | that's right.\ | | |

Voicing activity was coded when pupils uttered English words *just before*, *during*, or *just after* writing these same words. Voicing activity, therefore, was only coded when the pupils’ focus of attention was on writing the dialogue. However, voicing in the context of questioning, negotiating or helping, as well as part of responding to questions, negotiation or help, was not coded as voicing activity.

The reason for identifying voicing activity in the data was because this particular type of learner talk seemed to serve an essential regulative function in the pupils’ writing of the role-play dialogue. Extract 5.17 illustrates how the voicing thread appeared in the data. In this extract Dennis and Marcus are writing the first few words of the sentence: ‘why you have brown shoes today Jon?’. Note that all the lines, or intonation units, coded as voicing activity contain one or more L2 words from the sentence the pupils are writing. Note also that several of the intonation units coded as voicing activity are at the same time truncated intonation units, and hence, truncating activity. Overlap between these two non-prospective regulative activities was allowed in the coding of the data.

Extract 5.17: Voicing activity

| Line | Speaker | Text | Regulative activity | |
|------|---------|--|---------------------|---------|
| | | | Dennis | Marcus |
| 235 | Marcus: | why do y- -- | | Voicing |
| 236 | | (.) do (...) you -- | | Voicing |
| 237 | | (..) why do ha- -- | | Voicing |
| 238 | | <L1 no L1> do you,/ 239 (1) [<L1 yes L1>],_ | | Voicing |
| 240 | Dennis: | [why] ehm -- | Voicing | |
| 241 | Marcus: | why do you -- | | Voicing |
| 242 | Dennis: | <L1 no L1>,/ 243 (.) why you have./ | Voicing | |
| 244 | Marcus: | <L1 yes L1> O K.\ | | |

Focusing activity was in part identified because of the way in which pupils used it to control the activity. However, this controlling of the activity would be on a more subtle level than prospective directing activity. Consequently, double coding between focusing and directing activity was avoided.

The coding of focusing activity was similar to how Sinclair and Coulthard (1975, 1992) define focus moves in classroom discourse. Sinclair and Coulthard state that “focusing moves represent a change of ‘plane’” where a speaker momentarily stands outside the discourse and comments on what will come next (1992, p. 22). However, Sinclair and Coulthard’s *frame* moves were also included as focusing activity since, just as focusing, it showed a certain exercise of control over the learner interaction. Framing in the learner interaction data consisted of a small set of discourse markers. ‘Okay’, or this same word with Norwegian pronunciation (transcribed ‘OK’; cf. appendix E), was common. Another was ‘sånn’, which literally translates to ‘that’s that’.

Extract 5.18 illustrates focusing activity as it appeared in the data. In this extract the focusing activity appears in lines 314, 316 and 322. The first instance, in line 314, is Morten saying the name of the fictional character whose dialogue turn the pair must write next. Tim’s focusing in line 316 repeats this, in a somewhat fuller form, including the phrase, ‘<L1 and then L1>’. The last instance, in line 322, may have been a result of the pause (in lines 318 through 320), and again it is somewhat more elaborate than the previous instance, now including the slightly longer phrase, ‘<L1 and then just L1>’. Note that line 322 is at the same

time truncating activity; overlap between these two regulative activities was allowed in the coding of the data.

Extract 5.18: Focusing activity

| Line | Speaker | Text | Regulative activity | |
|------|---------|--------------------------------------|---------------------|----------|
| | | | Tim | Morten |
| 313 | | 2 | | |
| 314 | Morten: | Erik.\ | | Focusing |
| 315 | | (...) | | |
| 316 | Tim: | <L1 and then L1> Erik./ | Focusing | |
| 317 | Morten: | hmh.\ | | |
| 318 | | 2 | | |
| 319 | | 2 | | |
| 320 | | 2 | | |
| 321 | Tim: | ehm -- | | |
| 322 | | (1) <L1 and then just L1> (.) ehm -- | Focusing | |
| 323 | Morten: | hmh.\ | | |
| 324 | | 1 | | |

The coding of questioning activity involved identifying all questions asked by either of the two pupils. The questions could be directed at the other pupil, to the pupil her/himself (as long as it was uttered loud enough for the tape recorder to capture it), to the teacher, or to any other person in the room at the time. The coding did not include clarification requests or confirmation checks, which were coded as negotiating activity.

Extract 5.19: Uncooperative response to a question

| Line | Speaker | Text | Regulative activity | |
|------|-----------|--|---------------------|------------------------|
| | | | Veronica | Karen |
| 847 | Veronica: | <L1 can I look at that L1>?/ | Questioning | |
| 848 | Karen: | <L1 no L1>./ | | Uncooperative response |
| 849 | Veronica: | <L1 [but] L1> -- | | |
| 850 | Karen: | <L1 [but] you don't need to write it L1>./ | | |
| 851 | | <L1 because only I will say that L1>./ | | |

The actual identification of questions in the data was straightforward. However, being a prospective regulative activity, the coding also involved identifying those questions that were

not cooperatively responded to. Extract 5.19 illustrates such an uncooperatively responded to question. In line 847 Veronica asks if she can look at what Karen has written. Karen responds with a categorical ‘no’ in line 848. Karen *does* provide an explanation for her uncooperative response in lines 850 and 851, saying that Veronica does not need to see what has been written since she does not need to write it. However, up until this point in the interaction both pupils had written identical dialogues, and hence, Karen’s explanation appeared to be made up ‘on the go’.

The identification of negotiating activity was in part motivated by the negotiation of meaning research on learner interaction (cf. section 2.1). However, negotiating activity was defined as including only clarification requests and confirmation checks. Just as Oliver (1998) observed in her research with young language learners in an Australian primary context, the pupils in the present research did not use any comprehension checks. In addition, the coding does not include repetitions, or structural segmentations (cf. Pica et al., 1996). Hence, the resulting coding compares only in a limited way to the negotiation of meaning research reviewed in chapter two.

Extract 5.20 illustrates two instances of negotiation activity that was cooperatively responded to. In line 294 Dennis uses the name ‘Jan’ for one of the fictional characters in the role-play dialogue the pupils are writing. This is contrary ‘Jon’, which is the name Marcus has been using. Marcus reacts to Dennis’ use of ‘Jan’ by uttering the clarification request ‘hmh?’ in line 295. Dennis repeats the name ‘Jan’ in line 296, but soon realises that something is astray, and in line 298 he utters his own clarification request: ‘what did you write?’. At this point Marcus repeats his interpretation of the name in line 299, and provides the correct spelling in line 301.

Extract 5.20: Negotiating activity

| Line | Speaker | Text | Regulative activity | |
|------|---------|---|---------------------|-------------|
| | | | Dennis | Marcus |
| 294 | Dennis: | Jan (.) <L1 have you anything to say for yourself L1>.\ | | |
| 295 | Marcus: | hmh?/ | | Negotiating |
| 296 | Dennis: | Jan,/ | | |
| 297 | Marcus: | ehm -- | | |
| 298 | Dennis: | <L1 what did you write L1>?/ | Negotiating | |
| 299 | Marcus: | Jon,/ | | |
| 300 | Dennis: | <L1 [oh yes] L1>.\ | | |
| 301 | Marcus: | [J] O N./ | | |

The identification of directing activity in the data was motivated by the observation that individual pupils would sometimes take relatively forceful control of the activity. The level of control in these instances was more explicit than the subtler form of control involved in focusing activity (cf. extract 5.18 in this sub-section).

Extract 5.21 illustrates how directing activity appeared in the data. In line 430 Marcus is telling Dennis, '<L1 now you have to say something L1>'. This is followed by two equally overt instances of directing in lines 433 and 435. Although these three instances of directing relate to each other, since each of them amounts to a somewhat different 'instruction' they are coded as three separate instances of directing activity.

Extract 5.21: Directing activity

| Line | Speaker | Text | Regulative activity | |
|------|---------|---|---------------------|-----------|
| | | | Dennis | Marcus |
| 430 | Marcus: | <L1 now you have to say something L1>./ | | Directing |
| 431 | | (...) | | |
| 432 | Dennis: | hmh?/ | | |
| 433 | Marcus: | <L1 now it is you turn kind of L1>./ | | Directing |
| 434 | | (..)<L1 now it is L1> -- | | |
| 435 | | <L1 this is what you have to say L1>./ | | Directing |
| 436 | | <L1 you [are] L1> -- | | |
| 437 | Dennis: | <L1 [yes] L1>.\ | | |

The identification of suggesting activity was originally influenced by an analysis by Jarvis and Robinson (1997) of how participants in classroom interaction build on each other's contributions. However, in the end the coding of suggesting activity was linked more closely to the activity the pupils were doing. That is, whenever a pupil made a suggestion about content to use in the role-play dialogue it was coded as suggesting activity. However, a remaining influence of the Jarvis and Robinson's framework is that only suggestions that were new, or that extended on a previous suggestion, were coded as suggesting activity.

Extract 5.22 illustrates how suggesting activity appeared in the data. In line 204 Tim focuses the pair's attention on generating content for the next dialogue turn to be written. After some hesitation in lines 205 through 207 he makes a suggestion in line 208 ('<L1 how did you manage to go to the wrong school L1>'). The suggestion is followed by the pupils beginning to translate this suggestion into English, evidenced by the presence of the phrase 'how did you' repeated twice, in lines 209 and 212. Then in line 214 Morten signals another suggestion, which he then makes in line 216 ('Erik (..) that ehm (..) will be extra homework').

Extract 5.22: Suggesting activity

| Line | Speaker | Text | Regulative activity | |
|------|---------|--|---------------------|------------|
| | | | Tim | Morten |
| 204 | Tim: | <L1 for L1> teacher <L1 we can say L1>,\ | | |
| 205 | | ehm -- | | |
| 206 | | (...) ehm how -- | | |
| 207 | | <L1 kind of L1>,\ | | |
| 208 | | <L1 how did you manage to go to the wrong school L1>.\ | Suggesting | |
| 209 | Morten: | how did you -- | | |
| 210 | Tim: | ehm -- | | |
| 211 | Morten: | ehm -- | | |
| 212 | Tim: | how did you -- | | |
| 213 | | 2 | | |
| 214 | Morton: | @@ <L1 or L1>,_ | | |
| 215 | Tim: | [how] | | |
| 216 | Morten: | [Erik] (..) that ehm (..) will [[be extra]] homework.\ | | Suggesting |
| 217 | Tim: | <L1 [[let's see let's see L1>,_ | | |
| 218 | | ehm Erik,/ | | |

Extract 5.23 is an illustration of a suggestion that was uncooperatively attended to. In line 414 Karen focuses the pair's attention on generating content for the dialogue. This is followed by a suggestion for content to include in the writing of the dialogue by Veronica in line 416. However, in line 417 Karen rejects Veronica's suggestion without giving a reason.

Extract 5.23: Uncooperative response to a suggestion

| Line | Speaker | Text | Regulative activity | |
|------|-----------|---------------------------------------|---------------------|------------------------|
| | | | Veronica | Karen |
| 413 | Karen: | <L1 hey hold on L1>,\ | | |
| 414 | | <L1 we can write L1> ehm -- | | |
| 415 | | 2 | | |
| 416 | Veronica: | <L1 where did you play football L1>./ | Suggesting | |
| 417 | Karen: | <L1 no L1>./ | | Uncooperative response |
| 418 | | (..)<L1 we can write L1> -- | | |

The identification of helping activity in the data was motivated by the observation that pupils showed varying awareness of their co-participants' progression in writing dialogue turns. In order to capture this level of awareness, only instances of unsolicited help was coded as helping activity. In addition, coding only unsolicited help prevented answers to questions or negotiation being coded as helping activity.

The identification of helping activity relied on knowledge of the preceding learner talk, as well as an understanding of the two pupils' different progression in writing dialogue turns. In the case of extract 5.24 the preceding discourse had revealed that Karen was finished writing the dialogue turn, 'Why are you late for class'. Veronica, however, was still not finished writing this turn. In line 208 Veronica can be seen spelling out the first word of the turn, which is 'why'. Then, in line 214 Karen utters the word 'late', which is the fourth word in the turn, and which constitutes the first instance of helping activity in this extract. After this Karen waits for three seconds, presumably for Veronica to write the word 'late' (note the pause in line 215), and then finally utters the last two words of the turn in line 215, which constitutes the second instance of helping activity in this extract.

Extract 5.24: Helping activity

| Line | Speaker | Text | Regulative activity | |
|------|-----------|-----------------|---------------------|---------|
| | | | Veronica | Karen |
| 208 | Veronica: | W H -- | | |
| 209 | | 2 | | |
| 210 | | 2 | | |
| 211 | | 2 | | |
| 212 | | 2 | | |
| 213 | | 2 | | |
| 214 | Karen: | late, _ | | Helping |
| 215 | | (3) for class./ | | Helping |

5.3.8 Visualisation of the Regulative Threads

Since regulative activity was often 'located in' individual intonation units it made sense to visualise the regulative threads as discrete events. For this the convention of 'time lines', illustrating contingency between stimulus and response events in behaviour analysis (cf. discussion in sub-section 5.2.2), was chosen. Regulative activity, then, was visualised as spikes on a horizontal line. Figure 5.15 is a reduced size illustration of the visualisation of one of the regulative threads.

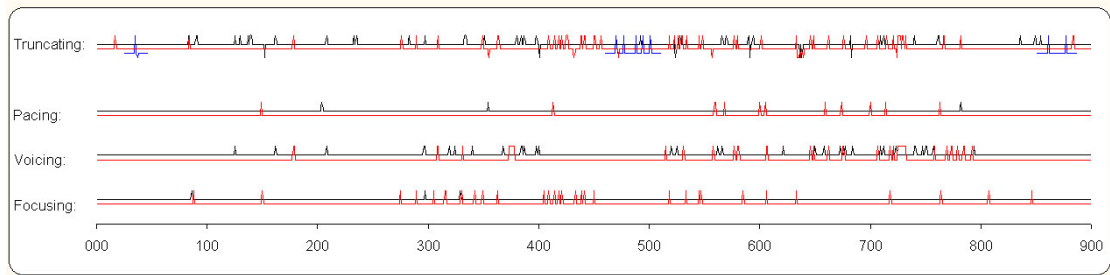


Figure 5.15: Visualisation of a regulative thread

As compared to using unconnected symbols (e.g., dots or squares), continuous lines made not only the actual regulative activity clearly visible, in the form of spikes, it also made periods *without* any regulative activity easily identifiable from unbroken ‘stretches’ of horizontal lines. This latter feature was useful for the later visual analysis (cf. chapter 6).

Just as in the visualisation of the two activity strands and the language code thread, captions were included on the left-hand side of the visual display, the colours red and black were used to distinguish between pupils (and in the case of prospective regulative activity, blue was used to signify other speakers), and line the numbers of the transcripts served as an approximation of the time-dimension along the horizontal axis.

A further convention was introduced in the visualisation of the *prospective* regulative thread. Prospective regulative activity that received an uncooperative response from the other pupil was coded such that the activity appeared as a downwards-pointing spike in the visualisation. Figure 5.16 illustrates this convention.

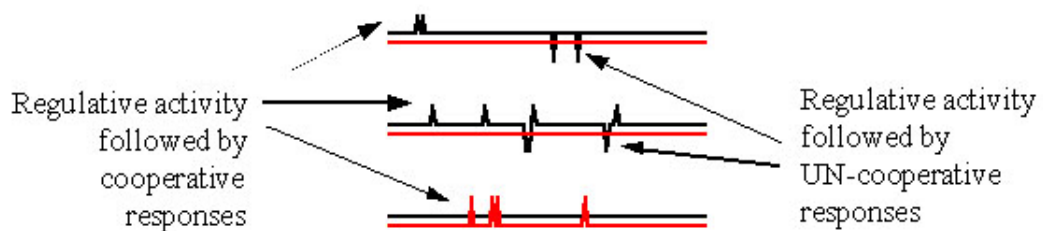


Figure 5.16: Visualising uncooperative responses to regulative activity

5.4 Summary

This chapter has discussed the conventions used in the transcription of the learner interaction data. It has also provided a detailed outline of how this transcribed data was prepared for coding, and eventually visualised. Finally, the chapter has discussed the identification, coding and visualisation of each activity strand and thread in the learner interaction data in detail.

The next chapters use the visualisations introduced in this chapter to analyse the dynamics of learner interaction of the three pupil pairs that participated in the research.