

8 VISUAL ANALYSIS OF SUCCESSIVE LEARNER INTERACTION

The pupils did a similar role-play task four times over a period of one year, i.e., March, May and October 2000, and January 2001. Each of these role-play tasks included a dialogue-writing activity (cf. section 4.4). The present chapter contains a visual analysis of the changes that can be identified in the pupils' learner interaction in this series of four similar dialogue-writing activities. As such, this chapter responds to research question three, which is:

3. What changes in activity are detected through the visualisation of successive instances of learner interaction?

The chapter begins with a section outlining the procedure followed in identifying changes across the successive instances of learner interaction. Three sections follow this, each corresponding to *one* in the series of similar dialogue-writing activities, and beginning with the second activity, which took place in May 2000. A next section provides an assessment of the pupils' own contributions to the changes identified in the series of dialogue-writing activities. A final section provides a summary of the changes detected through visualisation.

8.1 Identifying Changes in Learner Interaction

There was a great amount of data that could go into an identification of changes in activity across the pupils' successive instances of learner interaction. It was a challenge, therefore, to make this task manageable. For example, a full visual dynamical analysis of each dialogue-writing activity seemed out of the question. Instead, the outcomes of the visual dynamical analysis in chapter six were used to formulate a more manageable strategy.

The analysis in this chapter focuses on the visualisation of the writing and attention strands only. The reason for this restricted focus is because this combination of visualisations proved to 'contain' more information about the patterns and phases of learner interaction than any other combination of activity strands or threads. From this combination of activity strands, the S-pattern, the S-plus-pattern and the double-S-pattern could be recovered (cf. subsections 6.2.2, 6.3.2 and 6.4.2), as well as the phase organisation that divided the pupils' learner interaction into beginning, middle and end phases (consistently highlighted in the colours yellow and green in the two previous chapters).

With this more restricted focus, some of the dynamics of the successive instances of learner interaction will remain beyond the scope of the analysis. Again, the insights gained from the full visual dynamical analysis in chapter six provide an indication about which dynamics will be 'missed' by the analysis. For example, any relationships involving the

language code and regulative threads will elude the analysis. Furthermore, any phase organisation that represents changes between the first and last halves of the dialogue-writing activities might also be missed. This is because time-ordered distributions in the regulative threads were often used to synthesise this phase organisation. In order to maintain some perspective on how the language code and regulative threads might have contributed to any changes across the series of dialogue-writing activities, the visual analysis of the writing and attention strands is supported by numerical descriptions of these activity threads.

The analysis of changes in activity will be based on the change processes that Pianta and Walsh (1996) have suggested social systems can go through (cf. sub-section 3.2.3). That is, the visualisation of each successive instance of learner interaction will be examined using the interaction in the first dialogue-writing activity as the measure for ascertaining change. Furthermore, change can take the form of *self-stabilisation*, *adaptive self-reorganisation*, or *breakdown*. In chapter three these change processes were defined as follows:

- Self-stabilisation: a situation where a system rearranges “internal dynamics or relations and adapts to pressure without altering its basic structure or identity” (Pianta & Walsh, 1996, p. 90).
- Adaptive self-reorganisation: a situation where “the self-stabilizing properties of the system are inadequate to meet the demands placed on them, and the system must reorganize [its basic structure or identity] in order to respond adaptively” (Pianta & Walsh, 1996, p. 90).
- Breakdown: a situation where the self-stabilizing properties of a system are inadequate to meet the demands placed on them, and where at the same any self-reorganizing response of the system fails to be adaptive.

As was argued in chapter three, just what these three forms of change will ‘look’ like in the visualisation is uncertain. However, since the patterns and phases identified in chapter six were taken to reflect the dynamics of the pupils’ interaction, these outcomes of the visual dynamical analysis will be used as the starting point for the analysis of change. However, changes to the dynamics of learner interaction are likely to affect patterns and phases differently.

Self-stabilising change, one outcome which is a more stable form of interaction without any change to a system’s basic structure and identify, might weaken any phase organisations. This is because phases often represented the pupils’ efforts to come to grips with the activity (e.g., task management in the beginning of the activities), or tensions between the pupils (e.g., the increase in uncooperative responses across Veronica and Karen’s first dialogue-writing activity; cf. sub-section 6.2.3). In contrast, self-stabilising change might strengthen existing

relationships between activity strands and threads. That is, patterns may become more visible. This is because patterns most often represented the pupils' interaction in the more stable conditions of the middle part of a dialogue-writing activity.

In the case of adaptive self-reorganisation both patterns and phases might be expected to change. However, what phases result from adaptive self-reorganisation may depend on how stable the new dynamics of interaction are. If adaptive self-reorganisation results in a less stable form of interaction, the pupils may need to manage the task more. Since phases often reflected time-ordered distributions in task management, adaptive self-reorganisation might therefore be associated with the presence of more pronounced phases. Alternatively, if adaptive self-reorganisation results in a more stable form of interaction, it might result in less pronounced phases. This latter case might be distinguished from self-stabilising change by the presence of different patterns in the pupils' activity.

The above discussion reveals the exploratory nature of the visual analysis in the present chapter. Hence, in order to understand the changes identified through visualisation in more recognisable terms, the analysis will also include reference to other sources of data. That is, a brief description of the context surrounding each of the dialogue-writing activities is provided, and the analysis includes descriptions of notable contingencies, if any, which the pupils encountered.

Finally, as a measure of the pupils' own contributions to the change processes, the chapter will include a comparison of their focusing and directing activity across the four dialogue-writing activities. Focusing and directing activity are both *means* for exerting 'control' over the interaction (cf. sub-section 5.3.7). Hence, these regulative activities reflect one possible way in which the pupils' own contribution to the changes across the series of dialogue-writing activities can be explored. That is, focusing and directing activity, as a means for exerting control over interaction, and thereby contributing to changes in interaction, will be related to the change processes identified by visualisation.

8.2 Second Dialogue-writing Activity: May 2000

Chapter 4 provides a detailed description of the circumstances surrounding the second role-play task (cf. sub-section 4.5.2). The task-as-plan demands for the dialogue-writing activity of the second role-play task were mostly unchanged from the first task in March 2000 (cf. table 4.5 in sub-section 4.5.1). That is, the role-play task was considered a pleasant change from the normal routine of the English lessons, and it was conducted in a supportive atmosphere. The pupils had now done the role-play task three times, and they were well aware what to do. Moreover, the teacher's instructions included translation into Norwegian, further supporting

the pupils' awareness of what they should be doing. The topic of the role-play was a familiar fictional situation between Maid Marion and Robin Hood (cf. appendix B).

8.2.1 Veronica and Karen: May 2000

For the second dialogue-writing activity the pupil pairs were allowed to sit and work either in the classroom, or in the school library (a room of the same size connected to the pupils' classroom by a door that was kept open). During the dialogue-writing activity the teacher would walk back and forth between the two rooms, calling on all pairs in regular intervals. When the activity started Veronica and Karen moved into the library. However, two other pairs had taken the only 'empty' desks available in this room (by chance this was the two other pairs that participated in the research), and Veronica and Karen were left sitting at a desk with books piled high. At this table there was only room for one pupil to comfortably write, and there was only one chair. As an indication of Karen's dominant role in this pair (cf. discussion in section 7.3) it was she who was sitting down ready to write, leaving Veronica standing uneasily to the side. However, the researcher quickly intervened by moving some of the books, and finding another chair.

As the dialogue-writing task got underway Veronica seemed very passive, sometimes only whispering comments to Karen. Moreover, although difficult to observe from a distance (the researcher was seated across the room), Veronica did not seem to make many suggestions, and she appeared to be mostly copying what Karen was writing.

Finally, after about 14 minutes of writing, the pupils thought they might be finished with their role-play dialogue. At this point they went in search for the teacher. However, as the teacher was busy elsewhere the pupils approached the researcher instead, and showed him what they had written. Since the other pairs in the class, including the other two pairs of participants, were still writing their dialogues, the researcher encouraged the pupils to go back and write something more. With a bit of prompting they did go back to their desk, and wrote another few turns. In the first dialogue-writing activity, the pupils had not asked for any such help, or needed any prompting to write more.

Table 8.1 provides a first numerical comparison of Veronica and Karen's first and second dialogue-writing activities. The table shows that the pupils wrote 11 and 14 dialogue turns, respectively (as compared to 9 and 10 turns in the first activity). Moreover, they spent approximately 20 minutes on the second activity, as compared to 25 minutes on the first activity.

INSERT FIGURE 8.1 ABOUT HERE

Table 8.1: Turns written, and duration of, 1st and 2nd activity; Veronica and Karen

	March 2000		May 2000	
	Veronica	Karen	Veronica	Karen
Number of turns written*	9	10	11	14
Duration of activity	25 min		20 min	

* Turns written do not include the title or other captions (e.g., ‘the end’).

The numbers in table 8.1 are confirmed by the basic visualisation of the writing strand of the second dialogue-writing activity, which appears as figure 8.1 (see previous page). The visualisation reveals that, just as in the first activity, there are several asynchronous composition intervals (highlighted in yellow in figure 8.1). Moreover, Karen tends to finish turns first (red vertical lines tend to precede black vertical lines). However, unlike in the first dialogue-writing activity, the asynchronous intervals are distributed somewhat differently across this second activity. In addition, there are three instances where Karen writes a turn, but Veronica does not (turns 8, 11 and 14). The time immediately after the completion points of these turns are partly highlighted (in yellow). All of these composition intervals appear in the second half of the activity. However, two of these turns (turns 11 and 14) were written after the pupils had consulted with the researcher (see above). Finally, from the role-play dialogues the pupils wrote (cf. textboxes in the bottom of figure 8.1) it is also clear that Veronica writes significantly less than Karen does for turns 5 and 10, the latter of which was written after the pupils consulted with the researcher.

Table 8.2 gives a numerical comparison of the attention strand in the first and the second dialogue-writing activities. The numbers show that there are significant changes in the attention strand. For example, the numbers indicating focus on content and focus on writing are now only about half of the levels they were at in the first dialogue-writing activity. The numbers for task management show an opposite change; there is now twice as much task management. Finally, while the numbers indicating foci of attention were fairly balanced between the two pupils in the first activity, there is now a considerable imbalance. In particular, Karen’s numbers for focus on writing and focus on task management are about twice that of Veronica’s.

Table 8.2: Comparison of attention strand in 1st and 2nd activity; Veronica and Karen

Focus of attention	Attention time*			
	March 2000		May 2000	
	Veronica	Karen	Veronica	Karen
Planning performance	4	2	0	0
Rehearsing	0	0	32	32
Writing	223	236	75	124
Content	155	154	38	60
Task management	46	64	89	159
Off-task	0	0	3	3

* Attention time = Number of lines of transcription coded for a focus of attention (cf. sub-section 5.3.3).

Figure 8.2 (see next page) is the combined visualisation of the writing and attention strands of the second dialogue-writing activity. As compared to the visualisation of the same combination of activity strands in the first activity (cf. figure 6.7 in sub-section 6.2.2), there are a number of differences. In the attention strand there is an initial period of task management, as there was in the first activity. However, there is continued task management throughout the second activity. Note the extended period of task management around line number 500, which is the pupils' interaction with the researcher (see above). Furthermore, alternating attention between focus on content and focus on writing within the micro-context of the writing strand, i.e., the S-pattern, can only be seen in about half of the composition intervals (cf. turns 2, 4, 5, 6 and 7; highlighted in green and yellow in figure 8.2). However, in none of these composition intervals is the S-pattern as clearly visible as it was in the visualisation of the first dialogue-writing activity. Finally, in the first dialogue-writing activity the pupils' focus of attention was fragmented at the beginning and the end of the interaction. By contrast, in this second activity their focus of attention appears fragmented throughout.

INSERT FIGURE 8.2

In terms of Pianta and Walsh's (1996) three change processes, the following tentative conclusions can be made from the visualisation of Veronica and Karen's second instance of learner interaction. A first observation relates to the lack of many very clear S-patterns, as well as the different distribution of task management as compared to the first activity. From this it may be possible to rule out self-stabilising change. That is, self-stabilising change would be associated with the presence, and possible strengthening, of the patterns evident in their first dialogue-writing activity. However, there are *some* S-patterns in the visualisation in figure 8.2, and this may be taken as evidence that the system of learner interaction maintains some of the same structure and identity as it did in the first dialogue-writing activity.

A second observation is that the pupils did, in fact, write a fairly long role-play dialogue (longer than in the first dialogue-writing activity). Although this was, in part, a result of the encouragement they received to write something more, this nevertheless seems to rule out a breakdown of their learner interaction.

By process of elimination, therefore, it may be that the pupils' learner interaction represents some form of adaptive self-reorganisation. However, the continued presence of *some* S-patterns, although not as clearly visible, indicates that it might only be an initial form of adaptive self-reorganisation. That is, characteristics of the pupils' learner interaction in the first dialogue-writing activity are still present.

Since the language code and regulative threads are included in how the research has conceptualised the dynamics of learner interaction, these threads should both affect, and be affected by, any changes in activity in the second dialogue-writing activity. Tables 8.3 and 8.4 contain numerical comparisons of the language code and regulative threads across the first and the second dialogue-writing activities.

Table 8.3: Comparison of language code thread in 1st and 2nd activity; Veronica and Karen

Language code measure	March 2000		May 2000	
	Veronica	Karen	Veronica	Karen
Number of Norwegian words	461	528	185	457
Number of English words	128	256	89	448

Table 8.3 shows that in the second dialogue-writing activity Karen used almost three times as many Norwegian words as Veronica (457 versus 185), and five times as many English words (448 versus 89). This difference in the two pupils' use of L1 and L2 are greater than was the case in the first activity, and confirm the observation made during the dialogue-writing activity that Veronica was quite passive. The numbers for the regulative threads mirror the changes in the language code thread. Table 8.4 shows that, as compared to Veronica, Karen is

now responsible for more than eight times as many instances of non-prospective regulative activity (169 versus 20), and twice as much prospective regulative activity (51 versus 24). Crucially, Karen directs 26 times, offering a possible explanation for the presence of task management throughout the activity. By contrast, the numbers for the regulative threads again portray Veronica as quite passive in the second activity. For example, she makes virtually no suggestions, and she is responsible for only two instances of voicing activity (as compared to 34 instances in the first activity). A final change on the first activity is that there are now much fewer uncooperative responses to Veronica's prospective regulative activity. However, this may be related to Veronica not making any suggestions. That is, in the first activity her suggestions were often met with uncooperative responses from Karen.

Table 8.4: Comparison of regulative threads in 1st and 2nd activity; Veronica and Karen

Regulative threads	Number of instances of regulative activity*			
	March 2000		May 2000	
	Veronica	Karen	Veronica	Karen
Non-prospective thread				
Truncating	36	52	12	45
Pacing	4	12	1	2
Voicing	34	43	2	79
Focusing	3	32	5	43
Total	77	139	20	169
Prospective thread				
Questioning	8 : 5	2 : 0	6 : 1	7 : 0
Negotiating	23 : 4	3 : 1	12 : 1	4 : 0
Directing	2 : 1	11 : 1	2 : 0	26 : 0
Suggesting	13 : 11	18 : 0	0 : 1	7 : 0
Helping	0 : 0	7 : 0	0 : 1	7 : 0
Total	46 : 21	41 : 2	20 : 4	51 : 0

* Sets of numbers of prospective regulative activity represent cooperative and uncooperative responses respectively. For example, in March 2000, Veronica asked a total of 13 questions; 8 of which received cooperative responses from Karen, and 5 of which received uncooperative responses from Karen.

Finally, without visualisation it is difficult to interpret the changes in the language code and regulative threads. However, the marked changes in the numbers for the pupils' language use

support the conclusion made from the visual analysis that something is changing. In particular, the numbers portray Veronica as much more passive than in the first dialogue-writing activity. Furthermore, Karen’s greater amount of directing activity in the second activity may be an indication that she is trying to control the interaction in some way, possibly influencing the changes that can be observed in the dynamics of the pupils’ interaction. Such an interpretation would be consistent with the discussion of Veronica and Karen’s first dialogue-writing activity (cf. section 7.3), where it was argued that the pupils were struggling to arrive at an agreed approach to the dialogue-writing activity. The important change, however, is that in the second activity Veronica contributes less to how the pupils approach the activity.

8.2.2 Morten and Tim: May 2000

There were few notable contingencies in Morten and Tim’s second dialogue-writing activity. Rather, the observational notes indicate that the pupils got to work quite quickly, and did not seem to encounter any problems in their writing of the role-play dialogue.

Table 8.5 provides an initial numerical comparison of Morten and Tim’s first and second dialogue-writing activities. The table shows that the pupils both wrote 13 turns, but that they spent marginally less time on the second activity (18 versus 20 minutes).

Table 8.5: Turns written, and duration of, 1st and 2nd activity; Morten and Tim

	Mar 2000		May 2000	
	Morten	Tim	Morten	Tim
Number of turns written*	13	13	13	13
Duration of activity	20 min		18 min	

* Turns written do not include the title or other captions (e.g., ‘the end’).

The basic visualisation of the writing strand of Morten and Tim’s second dialogue-writing activity appears as figure 8.3 (see next page). This visualisation appears very similar to the writing strand of the pupils’ first activity (cf. figure 6.14 in sub-section 6.3.1). That is, there are a similar number of composition intervals and there is almost no asynchrony in their completion of turns. In addition, just as in the first activity, there is some association between length of turns and the duration of composition intervals (e.g., turns 2, 6 and 7 are long turns with long composition intervals; turns 8 through 13 are shorter turns with, on average, shorter composition intervals).

INSERT FIGURE 8.3 ABOUT HERE

Table 8.6 gives a numerical comparison of the attention strand in Morten and Tim’s first and second activities. The overall profile of their attention strand is similar to what it was in the first activity, and there remains an even balance between the two pupils, suggesting that their focus of attention is mostly shared. There is a slight overall decrease in the numbers, but this might relate to the second activity being two minutes shorter. Another slight change is that the pupils proportionally spend somewhat less time focusing on writing in the second activity, and therefore proportionally more time focusing on content and task management.

Table 8.6: Comparison of attention strand in 1st and 2nd activity; Morten and Tim

Focus of attention	Attention time*			
	Mar 2000		May 2000	
	Morten	Tim	Morten	Tim
Performance	6	6	0	0
Rehearsing	0	0	0	0
Writing	343	338	217	238
Content	216	210	191	189
Task management	49	46	37	39
Off-task	14	5	7	12

* Attention time = Number of lines of transcription coded for a focus of attention (cf. sub-section 5.3.3).

Figure 8.4 (see next page) is the combined visualisation of the writing and attention strands of the second dialogue-writing activity. Just as the numerical description of the attention strand, figure 8.4 provides a similar picture as the visualisation of the same combination of activity strands in the first activity (cf. figure 6.19 in sub-section 6.3.2). However, there are some subtle changes. In the beginning of the activity the only significant task management is with another speaker (the teacher). Moreover, the pupils begin the task with a long period focusing on writing, resulting in the completion of turns 1 and 2. As the task sheet suggested these two turns (cf. appendix B), the pupils begin the activity by copying from the task sheet, without any discussion about this content. However, beginning with the composition interval for turn 3, their learner interaction falls into a more familiar organisation, with the presence of both S-patterns (highlighted in light green) and double-S-patterns (highlighted in dark green). In the final part of the activity there is some task management, but just as in the first activity, it does not have any major impact on the alternating pattern between focus on content and writing (except in the very last composition interval).

INSERT FIGURE 8.4 ABOUT HERE

In terms of the three forms of change processes, Morten and Tim’s learner interaction does not show any significant adaptive self-reorganisation as compared to the first activity. The lack of any S-plus-patterns might indicate some form of change. However, there was some ambiguity between the S-plus-patterns and double-S-patterns in the pupils’ first activity (cf. sub-section 6.3.2). Hence, the lack of S-plus-patterns is not sufficient evidence for making any claims about the learner interaction being reorganised. Rather, it could just as well be evidence for a self-stabilising change process.

The other main evidence, the immediate and sustained focus on writing, involving the copying down of the beginning suggested by the task sheet, might indicate a form of adaptive self-reorganisation, but only for this isolated part of the dialogue-writing activity.

In sum, Morten and Tim’s learner interaction in the second activity is very similar to what it was in the first activity. This rules out an adaptive self-organising change process. Furthermore, there is no clear evidence for a self-stabilising change process.

Numerical descriptions of the language code and regulative threads for Morten and Tim’s first and second dialogue-writing activities appear in tables 8.7 and 8.8. The numbers for Norwegian and English language use in the second activity closely mirror those for the first activity. The same is the case for some of the regulative threads. However, there is significantly more pacing activity, by both pupils, in the second activity (a total of 15 instances, as compared to only 4 in the first activity). There is also considerably less questioning, negotiation and helping activity, again by both pupils. This latter observation might mean that the second dialogue-writing activity was easier for the pupils than the first activity.

Table 8.7: Comparison of language code thread in 1st and 2nd activity; Morten and Tim

Language code measure	Mar 2000		May 2000	
	Morten	Tim	Morten	Tim
Number of Norwegian words	334	422	218	313
Number of English words	400	331	388	257

In sum, there is no evidence in either the visualisation or in the numerical descriptions to identify any change process in these pupils’ second dialogue-writing activity. Rather, it appears as if there is little, or no, change. The only exception to this is the decrease in the pupils’ questioning, negotiating and helping activity. Moreover, as was pointed out in the beginning of this sub-section, the observational notes made during these pupils’ second dialogue-writing activity did not record any notable contingencies in the pupils’ interaction. In other words, these two pupils seem to have ‘picked up’ where they ‘left off’ in the first

dialogue-writing activity, resulting in very similar dynamics of learner interaction. Finally, it may be that this familiar form of interaction fails to challenge the pupils.

Table 8.8: Comparison of regulative threads in 1st and 2nd activity; Morten and Tim

Regulative threads	Number of instances of regulative activity*			
	Mar 2000		May 2000	
	Morten	Tim	Morten	Tim
Non-prospective thread				
Truncating	42	54	47	40
Pacing	3	1	6	9
Voicing	60	76	77	76
Focusing	25	19	29	42
Total	130	150	159	167
Prospective thread				
Questioning	9	13	3	4
Negotiating	13	20	10	3
Directing	12	9	9	16
Suggesting	18	27	28	22
Helping	6	3	3	0
Total	58	72	53	45

* Regulative activity that received uncooperative responses has been excluded.

8.2.3 Marcus and Dennis: May 2000

Just as was the case for Morten and Tim's interaction in the second dialogue-writing activity, the observational notes taken during the activity indicate that Marcus and Dennis wrote their role-play dialogue without encountering any notable contingencies. However, the observation did record that the two pupils' were having 'a good time' doing the activity. That is, they were frequently seen laughing about their own suggestions for content, and possibly also about imaginative ways to express their ideas in English. All in all, Marcus and Dennis seemed both relaxed and happy doing the second dialogue-writing activity.

Table 8.9 provides an initial numerical comparison of Marcus and Dennis' first and second dialogue-writing activities. The table shows that Marcus and Dennis both wrote 11 turns in the second activity, which is substantially more than the 6 turns they wrote in the first

activity. Moreover, they did so in the same amount of time as in the first activity (24 minutes).

Table 8.9: Turns written, and duration of, 1st and 2nd activity; Marcus and Dennis

	Mar 2000		May 2000	
	Marcus	Dennis	Marcus	Dennis
Number of turns written*	6	6	11	11
Duration of activity	24 min		24 min	

* Turns written do not include the title or other captions (e.g., ‘the end’).

Figure 8.5 (see next page) contains the basic visualisation of the writing strand in Marcus and Dennis’ second dialogue-writing activity. This visualisation shows that the pupils made a reasonably quick start to the activity as compared to in March 2000, when they wrote very few turns in the first half of the activity (cf. figure 6.24 in sub-section 6.4.1). Furthermore, the pupils compose turns at a steady pace throughout the second activity, and the textboxes at the bottom of figure 8.5 reveal that this steady pace is associated with a greater number of turns and about twice as much text, as compared to the first activity (cf. textboxes in figure 6.24 in sub-section 6.4.1). The only similarity between the writing strands of the first and second activity is the presence of some asynchrony in the composition of turns at the beginning, or in the first half, of the activity, and the disappearance of this asynchrony in the second half of the activity.

INSERT FIGURE 8.5 ABOUT HERE

Table 8.10 provides a numerical comparison of the attention strand in Marcus and Dennis' first and second dialogue-writing activities. Changes in the second activity include somewhat less task management, but more focus on content. In addition, the second activity sees the appearance of some focus on planning the performance, and some focus on off-task topics.

Table 8.10: Comparison of attention strand in 1st and 2nd activity; Marcus and Dennis

Focus of attention	Attention time*			
	Mar 2000		May 2000	
	Marcus	Dennis	Marcus	Dennis
Planning performance	0	0	24	24
Rehearsing	13	13	0	0
Writing	350	313	320	251
Content	178	167	250	232
Task management	118	73	52	58
Off-task	0	0	12	13

* Attention time = Number of lines of transcription coded for a focus of attention (cf. subsection 5.3.3).

The combined visualisation of the writing and attention strands in Marcus and Dennis' second dialogue-writing activity appears in figure 8.6 (see next page). The visualisation reveals that there is an initial period of task management. However, there are also small clusters of task management that appear in regular intervals later in the activity (around line numbers 440, 550, 690, 730 and 825). This more even distribution of task management leaves a potential final phase, at the end of the second activity, less identifiable.

In the micro-context of the composition intervals of the writing strand there are mainly double-S-patterns (highlighted in dark green). However, unlike what was the case in these pupils' first dialogue-writing activity, they write fewer two-clause or multi-clause turns (cf. textboxes at the bottom of figure 8.5). Instead, some of the pupils' longer turns contain a main clause, and then an additional sentence fragment (e.g., turns 5, 6 and 7). Only turns 8 and 11 contain two clear clauses.

INSERT FIGURE 8.6 ABOUT HERE

In terms of the change processes, Marcus and Dennis' learner interaction in this second dialogue-writing activity is different in that the pupils get going with their composition of turns a lot more quickly, and they manage to write more turns. Although there is a more even distribution of task management across the timescale of the activity, overall there is less of it. This indicates that the pupils are 'getting on' with the activity. Finally, the pupils' composition is associated with the same double-S-patterns that were characteristic of their first dialogue-writing activity. Hence, the pupils' learner interaction in the second activity might have undergone a self-stabilising change process, preserving the same basic organisation (the double-S-patterns), but getting started more quickly, and spending less time on task management. It may be that this self-stabilising change process left the pupils more relaxed in doing the activity, and that this can explain why they were observed having 'a good time' during their writing.

Table 8.11 contains a numerical comparison of the language code thread in Marcus and Dennis' first and second dialogue-writing activities. Both pupils now speak more English, and less Norwegian, as compared to the first dialogue-writing activity. Note that there was some association, between focus on writing dialogue and English language use, in their first activity (cf. sub-section 6.4.2). Hence, it is possible that the greater amount of English spoken relates to the greater number of turns the pupils wrote in the second activity. However, it might also be that the self-stabilising change has altered the relationship between focus on writing and English language use.

Table 8.11: Comparison of language code thread in 1st and 2nd activity; Marcus and Dennis

Language code thread	Mar 2000		May 2000	
	Marcus	Dennis	Marcus	Dennis
Number of Norwegian words	638	394	367	240
Number of English words	404	166	474	299

In the numerical comparison of the regulative threads, in table 8.12, the two clearest changes are more voicing activity, and less directing, by both pupils, in the second dialogue-writing activity. The increase in voicing activity might be related to the greater number of turns written in the second activity. Moreover, the lower level of directing activity may be related to the decrease in task management, and maybe also with a self-stabilising change process. That is, the learner interaction may be more 'self-sustaining', and there might therefore be less need for directing activity. This possibility will be explored further in section 8.5.

Table 8.12: Comparison of regulative threads in 1st and 2nd activity; Marcus and Dennis

Regulative threads	Number of instances of regulative activity*			
	Mar 2000		May 2000	
	Marcus	Dennis	Marcus	Dennis
Non-prospective thread				
Truncating	65	21	77	23
Pacing	1	0	5	1
Voicing	87	40	117	81
Focusing	35	11	32	11
Total	188	72	231	116
Prospective thread				
Questioning	5	7	9	2
Negotiating	20	16	13	20
Directing	29	10	9	5
Suggesting	24	23	28	39
Helping	4	2	1	1
Total	82	58	60	67

* Regulative activity that received uncooperative responses has been excluded.

In sum, Marcus and Dennis' second dialogue-writing activity seems to have been more productive than their first activity. That is, it resulted in more dialogue turns, in more English language use, and maybe most important of all, the pupils appeared to enjoy the experience.

8.3 Third Dialogue-writing Activity: October 2000

The circumstances surrounding the third dialogue-writing activity are described in detail in chapter 4 (cf. sub-section 4.5.3). The most evident change to these circumstances was that the pupils had a new English teacher. However, when the teacher introduced the task, he appealed to the pupils' familiarity with it, and let them proceed with the dialogue-writing activity without many instructions. The pupils appeared to respond positively, and were soon working on the role-play dialogue much in the same way they had done with the previous teacher. Another important change to the third role-play task was that there now seemed to be a demand on the pupils to make an entertaining role-play (cf. table 4.8 in sub-section 4.5.3). That is, the pupils seemed concerned to produce a role-play dialogue that the other pupils in the class would enjoy. This was especially visible in the performances that followed, where

some pupil pairs had gone to great lengths to make their role-play entertaining, including for the first time the use of props. Finally, the topic of the third role-play task was a dialogue between a famous person, who had been observed in an embarrassing situation during a St. Patrick's celebration in Limerick, Ireland, and an inquisitive reporter (cf. appendix B).

8.3.1 Veronica and Karen: October 2000

Veronica and Karen appeared to have trouble getting started writing in the third dialogue-writing activity. They spent the first couple of minutes complaining that they didn't know what to write. In the observational notes this was interpreted as the pupils trying to get attention of the researcher. This may have related to the change of teacher. That is, with a new teacher, the person they associated with the role-play task was the researcher. However, the researcher did his best to ignore them, and after a while they got going with their writing. Once they had started writing Veronica turned quiet, and seemed to simply copy whatever Karen wrote down. However, halfway into the activity both pupils started talking more, and they seemed to begin enjoying themselves.

Table 8.13 provides an initial numerical comparison of how the third dialogue-writing activity compares to the first and second ones. The numbers in table 8.13 shows that Veronica and Karen wrote very few dialogue turns in the third activity. They also spent less time on the third activity. That is, only 17 minutes, as compared to 25 and 20 minutes on the first and second activities.

Table 8.13: Turns written, and duration of, 1st through 3rd activity; Veronica and Karen

	Mar 2000		May 2000		Oct 2000	
	Veronica	Karen	Veronica	Karen	Veronica	Karen
Number of turns written*	9	10	11	14	3	4
Duration of activity	25 min		20 min		17 min	

* Turns written do not include the title or other captions (e.g., 'the end').

INSERT FIGURE 8.7 ABOUT HERE

The basic visualisation of the writing strand of Veronica and Karen’s third dialogue-writing activity appears as figure 8.7 (see previous page). The textboxes at the bottom of this figure show that, except for the first turn, the pupils wrote different sets of turns. That is, they only wrote those turns that they themselves would be saying in the role-play performance to the whole class. Consequently, subsequent to turn 1, the turn completion points in the visualisation of the writing strand only record completion points for one of the pupils. This, in itself, constitutes a major change on the two earlier activities. Moreover, the change from writing the same turns, to writing only alternate turns, coincided with the change recorded in the observational notes halfway through the activity (see above).

This new way of approaching the dialogue-writing activity effectively eliminated the possibility of asynchronous composition intervals, which were a feature of these pupils’ first and second dialogue-writing activities. Nevertheless, since turn 1 is quite long, containing as many as four clauses, and combining all the turns they wrote between them, the role-play dialogue they produced is actually comparable in length to the dialogues of the two previous activities.

Table 8.14 gives a numerical comparison of the attention strand across the first, second and third dialogue-writing activities. The numbers for the third activity show that, just as for the second activity, focus on content and writing are still at lower levels as compared to the first activity. However, focus on task management, which more than doubled between the first and second activity, is now back to the level of the first activity. Also, there is now a return to a balance between the two pupils’ levels of attention. Finally, the pupils spend some time planning the performance, which was not the case in the first and second activities.

Table 8.14: Comparison of attention strand in 1st through 3rd activity; Veronica and Karen

Focus of attention	Attention time*					
	Mar 2000		May 2000		Oct 2000	
	Veronica	Karen	Veronica	Karen	Veronica	Karen
Planning performance	4	2	0	0	66	66
Rehearsing	0	0	32	32	0	0
Writing	223	236	75	124	72	101
Content	155	154	38	60	101	98
Task management	46	64	89	159	56	71
Off-task	0	0	3	3	22	21

* Attention time = Number of lines of transcription coded for a focus of attention (cf. sub-section 5.3.3).

Figure 8.8 (see next page) is the combined visualisation of the writing and attention strands of Veronica and Karen's third dialogue-writing activity. In this visualisation there is an initial period of task management, followed by a fairly lengthy composition interval where turn 1 is written. The focus of attention in this composition interval resembles an S-pattern (and is therefore highlighted in light green). However, note that turn 1 is a four clause turn, and one would therefore expect more than a single alternation between focus on content and focus on writing (cf. section 6.5). The lack of such additional alternations may be due to the observation that Veronica simply copied what Karen was writing in the first half of the dialogue writing activity.

The composition interval for turn 1 is followed by a second period of task management. This task management coincides with the change recorded in the observational notes. That is, the change between them being fairly quiet, with Veronica copying what Karen wrote, to them being more talkative and enjoying the activity more. Of the composition intervals that follow, only those that are associated with turns that Veronica writes have discernable patterns (cf. textboxes at the bottom of figure 8.4). That is, there is an S-pattern in the composition interval for turn 3 (highlighted in light green), and a double-S-pattern in the composition interval for turn 5 (highlighted in dark green). Moreover, these two composition intervals are associated with shared focus on writing by both pupils. In contrast, the three composition intervals for the turns that only Karen writes are characterised by either the complete lack of any focus of attention (cf. composition interval for turn 4), or by the lack of any significant focus on writing by Veronica (cf. composition intervals for turns 2 and 6). This indicates that Karen is involved in the composition and writing of all turns (even those she does not write herself), while Veronica seems to be involved in talking about the content for most turns, but not in the writing down of those turns that only Karen writes.

Based on the evidence from the visualisation it is clear that Veronica and Karen's learner interaction has changed significantly as compared to the first and second dialogue-writing activities. Despite the presence of what looks like S-patterns, the pupils approach the dialogue-writing activity completely differently by only writing those turns that they themselves will be acting out in the later performance of the role-play. Hence, in terms of Pianta and Walsh's (1996) three forms of change processes, it seems safe to say that the learner interaction undergoes an adaptive self-reorganisation. Given the tensions present in the first two dialogue-writing activities (e.g., the many uncooperative responses to Veronica's prospective regulative activity in the first activity (cf. sub-section 6.2.1), and Veronica being very passive in the second activity (cf. previous sub-section)), it is perhaps not surprising to see these two pupils approaching the task differently this third time.

INSERT FIGURE 8.8

Numerical comparisons of the language code and regulative threads for the first, second and third dialogue-writing activities appear in tables 8.15 and 8.16. Table 8.15 shows that Veronica's Norwegian language use is back up to the level it was in the first activity, indicating that she is more active again. However, her English language use has decreased further, and is now down to only 46 words for the entire third dialogue-writing activity. In contrast, Karen's language use is largely consistent with both of the previous dialogue-writing activities.

Table 8.15: Comparison of language code thread in 1st through 3rd activity; Veronica and Karen

Language code measure	Mar 2000		May 2000		Oct 2000	
	V*	K**	V	K	V	K
Number of Norwegian words	461	528	185	457	458	595
Number of English words	128	256	89	448	46	310

* V = Veronica; ** K = Karen

The numbers representing Veronica's regulative activity, in table 8.16, while still low overall as compared to the first activity, have also recovered somewhat. However, this recovery is somewhat selective. In the non-prospective regulative thread, her truncating activity is back to the level of the first activity, but she still voices very little. In the prospective regulative thread she still negotiates very little as compared to the first activity, but her suggesting activity is at a very high level. Moreover, Karen attends to all her suggestions, as well most other prospective regulative activity, in a cooperative manner. Karen's regulative activity also shows some changes. She focuses very little as compared to the earlier activities, and she makes a lot of suggestions. Overall, the changes in the regulative threads support a conclusion that something is changing in Veronica and Karen's third dialogue-writing activity.

In sum, it seems that the adaptive self-reorganisation, and the resulting interaction in the third dialogue-writing activity, has allowed Veronica to become more active again. Moreover, the observational notes support the visualisation in locating the pupils' adaptive response to the middle part of the dialogue-writing activity. However, it appears that Veronica's reorganised active role is limited to suggesting content for the role-play dialogue, and that the dynamics of the learner interaction prevents her from taking an active part in the *writing* of role-play dialogue.

Table 8.16: Comparison of regulative threads in 1st through 3rd activity; Veronica and Karen

Regulative threads	Number of instances of regulative activity*					
	Mar 2000		May 2000		Oct 2000	
	V**	K***	V	K	V	K
Non-prospective thread:						
Truncating	36	52	12	45	30	50
Pacing	4	12	1	2	1	10
Voicing	34	43	2	79	9	72
Focusing	3	32	5	43	4	9
Total	77	139	20	169	44	141
Prospective thread:						
Questioning	8 : 5	2 : 0	6 : 1	7 : 0	7 : 0	6 : 0
Negotiating	23 : 4	3 : 1	12 : 1	4 : 0	11 : 1	5 : 0
Directing	2 : 1	11 : 1	2 : 0	26 : 0	2 : 0	17 : 0
Suggesting	13 : 11	18 : 0	0 : 1	7 : 0	26 : 0	35 : 0
Helping	0 : 0	7 : 0	0 : 1	7 : 0	0 : 0	7 : 0
Total	46 : 21	41 : 2	20 : 4	51 : 0	46 : 1	70 : 0

* Sets of numbers of prospective regulative activity represent cooperative and uncooperative responses, respectively. For example, in March 2000, Veronica asked a total of 13 questions; 8 of which received cooperative responses from Karen, and 5 of which received uncooperative responses from Karen; ** V = Veronica; *** K = Karen

8.3.2 Morten and Tim: October 2000

Morten and Tim approached the third dialogue-writing activity in a rather ‘casual’ manner. For example, Morten declined to sit in a chair while working on the activity. Instead he spent the whole time sitting on, or leaning against, the edge of the desk that the pupils were working at. Moreover, after they had finished writing their role-play dialogue, as one of the first pairs in the class, they went off to practice in the hallway for a brief period of time. When they returned to the classroom, the teacher asked if they did not need to practice more. Their response was that if they practiced too much ‘it would not be any good’. However, in the break between the dialogue-writing activity and the performance of the role-plays to the class (which was also the break between the 5th and 6th periods) they stayed inside to prepare props for their later performance. Finally, the observational notes recorded that the ‘subversive’ nature of the role-play dialogue that Morten and Tim wrote, as well as their

subsequent performance, appeared to respond to the task demand, which only emerged in the third role-play task, for making the role-play entertaining to the other pupils (cf. table 4.8 in sub-section 4.5.3).

Table 8.17 provides first numerical comparison of Morten and Tim’s first, second and third dialogue-writing activities. The table shows that the pupils wrote only 6 turns each in the third activity, as compared to 13 turns in both of the earlier dialogue-writing activities. Moreover, they spent marginally less time on the third activity (17 minutes), as compared to the earlier activities (20 and 18 minutes).

Table 8.17: Turns written, and duration of, 1st through 3rd activity; Morten and Tim

	Mar 2000		May 2000		Oct 2000	
	Morten	Tim	Morten	Tim	Morten	Tim
Number of turns written*	13	13	13	13	6	6
Duration of activity	20 min		18 min		17 min	

* Turns written do not include the title or other captions (e.g., ‘the end’).

The basic visualisation of the writing strand in Morten and Tim’s third dialogue-writing activity appears as figure 8.9 (see next page). This visualisation reveals some differences as compared to the first activity (cf. figure 6.14 in sub-section 6.3.2). One change is that the composition intervals appear longer. However, this difference may be somewhat amplified by the fact that this visualisation covers a slightly shorter period of time (17 minutes, as compared to 20 and 18 minutes in the first and second activities). There is also less association between length of turns (in words) and the length of composition intervals (in minutes). Finally, there is some asynchrony in the pupils’ writing of turns, but not enough to make any strong claims about change.

Table 8.18 gives a numerical comparison of the attention strand in Morten and Tim’s first, second and third dialogue-writing activities. In the third activity the overall profile of the pupils’ focus of attention has changed somewhat. The pupils now spend relatively less time focusing on writing, and more time talking about content. In fact, a downward trend is beginning to emerge in the pupils’ focus on writing across the successive instances of learner interaction. That is, their focus on writing dialogue began at a level of around 340 transcription lines, decreased to about 225 transcription lines in the second activity, and is now as low as 175 lines of transcription. Moreover, there is more task management than in the earlier activities. Finally, there is some focus on planning the performance, which is consistent with the new task demand for creating an entertaining role-play.

INSERT FIGURE 8.9

Table 8.18: Comparison of attention strand in 1st through 3rd activity; Morten and Tim

Focus on attention	Attention time*					
	Mar 2000		May 2000		Oct 2000	
	Morten	Tim	Morten	Tim	Morten	Tim
Planning performance	6	6	0	0	38	38
Rehearsing	0	0	0	0	0	0
Writing	343	338	217	238	175	175
Content	216	210	191	189	245	259
Task management	49	46	37	39	81	66
Off-task	14	5	7	12	0	1

* Attention time = Number of lines of transcription coded for a focus of attention (cf. sub-section 5.3.3).

Figure 8.10 contains the combined visualisation of the writing and attention strands in Morten and Tim's third dialogue-writing activity. The visualisation reveals that the greater amount of task management in this activity is concentrated at the beginning and end of the activity. However, the periods of task management are relatively brief, and involve another speaker (note the presence of the blue horizontal bars around line numbers 50 and 680). Consulting the transcribed interaction showed that in both instances the other speaker was the teacher.

A striking feature of Morten and Tim's third activity is that their focus of attention is more sustained and shared, throughout the activity, as compared to the earlier activities. Within this shared focus of attention there are two S-patterns, in composition intervals 3 and 5 (highlighted in light green). Moreover, these S-patterns stretch into the following asynchronous composition intervals (highlighted in yellow), just as was the case in Veronica and Karen's first dialogue-writing activity. There are also three double-S-patterns, in composition intervals 1, 2 and 4 (highlighted dark green), two of which consist of more than two alternations between focus on content and writing. In the case of composition interval 4, the multiple alternations can be explained by the multiple clauses included in turn 4 (cf. textboxes at the bottom of figure 8.9). There is also what appears to be an S-plus-pattern in the composition interval for turn 6 (also highlighted in dark green). However, if one includes the asynchronous interval that follows (highlighted in yellow), this becomes a double-S-pattern. Finally, the appearance of focus on planning the performance in this third activity (cf. table 8.18) is visible in figure 8.10 as two sustained periods of planning in the last half of the activity. This focus on planning the performance does not seem to change the pupils' sustained focus of attention in the activity.

INSERT FIGURE 8.10 ABOUT HERE

In terms of the three forms of change processes, Morten and Tim’s third dialogue-writing activity is characterised by clear beginning and end phases, associated with task management. There are also periods of planning the performance in the last half of the activity. However, the periods of task management are quite brief, and only occur in the presence of the teacher. Moreover, there are both S-patterns and double-S-patterns, as well as what could be interpreted as an S-plus pattern. This, combined with the fact that the pupils’ focus of attention is very sustained and shared throughout the activity seems to indicate that there is self-stabilising change taking place. Nevertheless, it is unclear how the steadily decreasing focus on writing, and the fact that the pupils wrote less turns and a somewhat subversive role-play text, relates to a self-stabilising process.

Tables 8.19 and 8.20 contain numerical comparisons of the language code and regulative threads in Morten and Tim’s first, second and third dialogue-writing activities. Once again, the numbers for Norwegian and English language use are largely consistent with what was observed in the two earlier activities. In the non-prospective regulative thread both pupils’ voicing activity is at a lower level than in the first and second activities. However, this may be related to the fact that they write fewer turns in the third activity. Pacing activity has again returned to the lower level of the first activity. In the prospective regulative thread the pupils’ questioning, negotiating and helping activity remains at low levels, just as was the case in the second activity. This latter observation may, once again, mean that the pupils are not challenged by the dialogue-writing activity.

Table 8.19: Comparison of language code thread in 1st through 3rd activity; Morten and Tim

Language code measure	Mar 2000		May 2000		Oct 2000	
	Morten	Tim	Morten	Tim	Morten	Tim
Number of Norwegian words	334	422	218	313	286	345
Number of English words	400	331	388	257	306	314

In sum, Morten and Tim approached this third activity in a ‘casual’ manner and they wrote a somewhat subversive role-play dialogue. However, there were some subversive elements in the role-play text these pupils wrote in the previous role-play task. Nevertheless, this time the performance of the role-play was similarly subversive. These observations may be related to the task demand for creating a role-play that is entertaining to the other pupils in the class. Moreover, this demand may also explain why the pupils spent some time planning the performance during the dialogue-writing activity. Despite these apparent changes, the visual analysis of the combination of the writing and attention strands indicated that there was a self-

stabilising change in the dynamics of the pupils' learner interaction. This was primarily based on the observation that there was a shared and sustained focus of attention throughout, and the very clear presence of patterns of attention.

Table 8.20: Comparison of regulative threads in 1st through 3rd activity; Morten and Tim

Regulative threads	Number of instances of regulative activity*					
	Mar 2000		May 2000		Oct 2000	
	Morten	Tim	Morten	Tim	Morten	Tim
Non-prospective thread						
Truncating	42	54	47	40	30	41
Pacing	3	1	6	9	1	3
Voicing	60	76	77	76	28	43
Focusing	25	19	29	42	17	29
Total	130	150	159	167	76	116
Prospective thread						
Questioning	9	13	3	4	6	3
Negotiating	13	20	10	3	11	6
Directing	12	9	9	16	8	11
Suggesting	18	27	28	22	29	30
Helping	6	3	3	0	2	0
Total	58	72	53	45	56	50

* Regulative activity that received uncooperative responses has been excluded.

Given that the role-play task had always been regarded, by both teachers and pupils, as a pleasant change from the normal routine (cf. table 4.8 in sub-section 4.5.3), the apparently contradictory findings provided by the contextual data and the visual analysis, may in fact not be contradictory at all. In other words, the format of the role-play task may provide enough flexibility for Morten and Tim to be somewhat subversive, without changing the dynamics, in the form of patterns of activity, very much at all. Moreover, the pupils' casual approach to the dialogue-writing activity, as well as the continued low levels of questioning, negotiating and helping activity, may mean that the 'stable' dynamics indicated by the combined visualisation of the writing and attention strands, fails to challenge the pupils.

8.3.3 Marcus and Dennis: October 2000

The observational notes recorded no very notable contingencies in Marcus and Dennis' third dialogue-writing activity. However, two impressions that were recorded was that the pupils were at times maintaining a very deep level of concentration, and that they were very concerned to write something entertaining. The former impression was in part based on Marcus' repeatedly telling a pair of girls sitting nearby to be quiet (since they were disturbing him). The latter impression was based on the pupils commenting that they 'needed to come up with something better', or saying that what they had written 'wasn't cool enough' (to themselves, and during their interaction in the activity). Moreover, the pupils wrote a somewhat subversive role-play text, and went to great lengths to prepare props in the break between the 5th and 6th periods.

Table 8.21 provides a comparison of the number of turns written, and duration of, Marcus and Dennis' three first dialogue-writing activities. The table shows that the pupils wrote 11 turns each in the third activity. They also spent 23 minutes writing, which is consistent with the average for the first two activities.

Table 8.21: Turns written, and duration of, 1st through 3rd activity; Marcus and Dennis

	Mar 2000		May 2000		Oct 2000	
	Marcus	Dennis	Marcus	Dennis	Marcus	Dennis
Number of turns written*	6	6	11	11	11	11
Duration of activity	24 min		24 min		23 min	

* Turns written do not include the title or other captions (e.g., 'the end').

Figure 8.11 (see next page) contains the basic visualisation of the writing strand in Marcus and Dennis' third dialogue-writing activity. This visualisation of the writing strand resembles that of the second dialogue-writing activity (cf. figure 8.5 in sub-section 8.2.3). That is, the pupils are composing turns at a fairly steady pace throughout the activity, and this results in a role-play text that is comparable in length to that of the second activity. However, in this third dialogue-writing activity there is virtually no asynchrony in the pupils' writing of turns.

INSERT FIGURE 8.11 ABOUT HERE

Table 8.22 provides a numerical comparison of the attention strand in Marcus and Dennis' first, second and third dialogue-writing activities. Some changes on the first and second activity are apparent. First of all, the pupils now spend more time planning the performance of the role-play. This might relate to the new task demand for making an entertaining role-play. In addition, there is considerably less focus on writing, and more focus on content, which might relate to the fact that the pupils frequently expressed that they 'needed to come up with something better'. Finally, whereas the pupils' focus on task management decreased in the second activity, in the third activity it is again at a higher level.

Table 8.22: Comparison of attention strand in 1st through 3rd activity; Marcus and Dennis

Focus of attention	Attention time*					
	Mar 2000		May 2000		Oct 2000	
	Marcus	Dennis	Marcus	Dennis	Marcus	Dennis
Planning performance	0	0	24	24	95	105
Rehearsing	13	13	0	0	0	0
Writing	350	313	320	251	137	58
Content	178	167	250	232	399	354
Task management	118	73	52	58	106	108
Off-task	0	0	12	13	7	3

* Attention time = Number of lines of transcription coded for a focus of attention (cf. sub-section 5.3.3).

The combined visualisation of the writing and attention strands in Marcus and Dennis' third dialogue-writing activity appears in figure 8.12 (see next page). The visualisation reveals periods of task management at the beginning and at the end of the activity. This distribution resembles that of the first dialogue-writing activity (cf. figure 6.24 in sub-section 6.4.1), except that these periods of task management are somewhat briefer and more sustained. In the micro-context of the composition intervals of the writing strand there is a mixture of S-patterns (highlighted in light green) and double-S-patterns (highlighted in dark green). There are three additional composition intervals (for turns 4, 5 and 9) that are not highlighted, but which may be said to contain S-patterns. However, in these the focus on writing, which completes the S-pattern, does not include any contribution by Dennis. The composition interval for turn 10 is not considered since all that the pupils wrote in this interval was, 'AAA' (cf. textboxes at the bottom of figure 8.11). The greater number of S-patterns, as compared to the earlier activities, may be because the pupils now write more single-clause

INSERT FIGURE 8.12 ABOUT HERE

turns. Finally, in the last half of the dialogue-writing activity the pupils repeatedly focus on planning the performance of the role-play dialogue (highlighted in orange in figure 8.12).

There are three changes to the learner interaction in the third dialogue-writing activity that might offer clues as to what change process might be taking place. First of all, there is more of a mix between S-patterns and double-S-patterns than in the previous activities. Moreover, there is considerably less focus on writing, and this makes what would otherwise be three S-patterns difficult to classify (in the composition intervals for turns 4, 5 and 9). Finally, there is now a great deal of focus on planning the performance in the last half of the activity. Hence, whereas Marcus and Dennis' second instance of learner interaction seemed to be undergoing a form of self-stabilising change, this third activity seems to be moving somewhat away from the organisation that self-stabilised in the second activity. Nevertheless, some of the organisation of the earlier activities is still present. Thus, if there is adaptive self-reorganisation it is only of an initial form. Moreover, given the shift in attention in favour of content and planning the performance, this initial form of adaptive self-reorganisation seems to relate to the demand for making an entertaining role-play.

Table 8.23 contains a numerical comparison of the language code thread in Marcus and Dennis' first, second and third dialogue-writing activities. In the third activity both pupils' language use is very similar to what it was in the first dialogue-writing activity. As compared to the second activity, however, the pupils now speak more Norwegian. It is difficult to interpret these numbers without consulting a visualisation of the language code thread. However, in the analysis of Marcus and Dennis' second instance of learner interaction, the greater use of English was linked to a self-stabilising change process (cf. sub-section 8.2.3). Consistent with this earlier interpretation, the language use in this third activity might indicate that the pupils' interaction is moving away from the dynamics that were self-stabilising in the second dialogue-writing activity. This, then, is consistent with some form of adaptive self-reorganisation taking place.

Table 8.23: Comparison of language code thread in 1st through 3rd activity; Marcus and Dennis

Language code measure	Mar 2000		May 2000		Oct 2000	
	Marcus	Dennis	Marcus	Dennis	Marcus	Dennis
Number of Norwegian words	638	394	367	240	704	452
Number of English words	404	166	474	299	479	222

The numerical comparison of the regulative threads, in table 8.24, mirrors the changes observed in the language code thread. That is, the pupils' regulative activity in the third activity resembles the numbers for the first activity. For example, the pupils' directing activity, which decreased substantially in the second activity, is back up to the level of the first dialogue-writing activity. Similarly, the pupils' voicing activity increased markedly in the second activity, but it is now back down to the level it was at in the first activity.

Table 8.24: Comparison of regulative threads in 1st through 3rd activity; Marcus and Dennis

Regulative threads	Number of instances of regulative activity*					
	Mar 2000		May 2000		Oct 2000	
	Marcus	Dennis	Marcus	Dennis	Marcus	Dennis
Non-prospective thread						
Truncating	65	21	77	23	57	44
Pacing	1	0	5	1	1	0
Voicing	87	40	117	81	77	17
Focusing	35	11	32	11	54	24
Total	188	72	231	116	189	85
Prospective thread						
Questioning	5	7	9	2	7	4
Negotiating	20	16	13	20	27	10
Directing	29	10	9	5	29	17
Suggesting	24	23	28	39	33	38
Helping	4	2	1	1	1	0
Total	82	58	60	67	97	69

* Regulative activity that received uncooperative responses has been excluded.

In the analysis of Marcus and Dennis' second dialogue-writing activity, a decrease in directing activity was linked to self-stabilising change (cf. sub-section 8.2.3). In the third activity, it may be that the increase in directing activity may be associated with adaptive self-reorganisation. This possibility will be explored further in section 8.5 of this chapter. The change in voicing activity is difficult to explain, however. In the second activity the increase in voicing activity was linked to the greater number of turns that the pupils wrote. In the third activity, however, the pupils manage to write the same number of turns, and equally much text, but with less focus on writing (cf. table 8.22), and with less voicing activity (cf. table 8.24). This indicates that the pupils must have done their writing differently in the third

activity, which may add to the argument that some form of adaptive self-reorganisation is going on.

8.4 Fourth Dialogue-writing Activity: January 2001

Chapter four provides a detailed description of the circumstances surrounding the fourth role-play task (cf. sub-section 4.5.4). The new teacher seemed more comfortable with the role-play task in January 2001, and he provided the pupils with careful instructions. However, two task demands, one of which was new, seemed to influence the pupils' fourth dialogue-writing activity (cf. table 4.10 in sub-section 4.5.4). The first was that by now the demand for making an entertaining role-play had become a great deal more apparent than in the third role-play task. This demand might have developed further when the teacher did the role-play task separately from the research reported in this study, in the interim between the third and fourth tasks reported by the thesis. Furthermore, from the conversations with the pupils in the follow-up activity after the fourth role-play task, it was the impression of the researcher that the pupils did not view the task as a pleasant change from the normal routine anymore, and that this related to the demand for making the role-plays entertaining. The second, and new, task demand was a potential conflict between the task materials and the way the pupils had solved the role-play task in the past. The task asked the pupils to write a dialogue between a park keeper and *one other* person who was breaking a rule in the park (cf. appendix B). Writing a role-play involving only two fictional characters was consistent with how the pupils had done the task before. However, the task sheet referred to a workbook page that gave the impression that the park keeper would encounter several different people (cf. appendix D and discussion in sub-section 4.5.4). Hence, the potential confusion was between writing a dialogue between a park keeper and *one other* fictional character, or between a park keeper and *more than one* other fictional characters.

8.4.1 Veronica and Karen: January 2001

Veronica and Karen approached the last role-play task very differently than the other pupil pairs. That is, in the break just before the last role-play task took place, Karen, with Veronica in tow, approached the researcher and announced that this time they would *not* be performing the role-play to the class. This effectively shielded them from the additional task-as-plan demand activity for making the role-play entertaining to the class (cf. table 4.10 in sub-section 4.5.4). Moreover, the observational notes taken at the very beginning of the dialogue-writing activity recorded that Karen seemed quite determined to write a good role-play dialogue. That is, unlike the previous activity, there was no period of trying to get attention (cf. sub-section

8.3.1). Rather, she went straight to work. In all this, Veronica appeared more passive than in any of the previous tasks. At the end of the dialogue-writing activity the pupils did not perform their role-play. However, in the break between the writing and the performance, they went to great lengths to record a good spoken version of their role-play dialogue with the tape player supplied by the researcher.

Table 8.25 provides a first numerical comparison of how Veronica and Karen's fourth dialogue-writing activity compares to the three earlier activities. The table shows that Veronica and Karen wrote 10 and 11 dialogue turns, respectively, and that they spent 19 minutes on this activity, which is consistent with the average for the three earlier activities.

Table 8.25: Turns written, and duration of, 1st through 4th activity; Veronica and Karen

	Mar 2000		May 2000		Oct 2000		Jan 2001	
	V**	K***	V	K	V	K	V	K
Number of turns written*	9	10	11	14	3	4	10	11
Duration of activity	25 min		20 min		17 min		19 min	

* Turns written do not include the title or other captions (e.g., 'the end'); ** V = Veronica; *** K = Karen.

The basic visualisation of the writing strand of Veronica and Karen's fourth dialogue-writing activity appears as figure 8.13 (see next page). The textboxes at the bottom of this figure show that the pupils both wrote all the turns of the role-play dialogue (except for the final turn, which only Karen wrote). However, in the visualisation of the turn completion points only Karen's red vertical lines appear. The reason for this was that there was insufficient evidence in the transcription of the interaction to code Veronica's completion points. The later discussion of the language code and regulative threads, where Veronica was very passive indeed, will make this clearer. Nevertheless, the observational notes, as well as the written texts in figure 8.13, indicate that overall Veronica kept pace with Karen in her writing.

Table 8.26 is a numerical comparison of the attention strand in Veronica and Karen's interaction across all four dialogue-writing activities. The numbers for the final activity show that focus on content and writing are still at low levels as compared to the first activity. Indeed, focus on writing dialogue is at the lowest level of all the four dialogue-writing activities. Focus on task management, by contrast, is again fairly high, approaching the level it was at in the second activity. Finally, there is again some imbalance between the levels of the different foci of attention for the two pupils.

INSERT FIGURE 8.13 ABOUT HERE

Table 8.26: Comparison of attention strand in 1st through 4th activity; Veronica and Karen

Focus of attention	Attention time*							
	Mar 2000		May 2000		Oct 2000		Jan 2001	
	V**	K***	V	K	V	K	V	K
Planning performance	4	2	0	0	66	66	0	0
Rehearsing	0	0	32	32	0	0	0	0
Writing	223	236	75	124	72	101	43	50
Content	155	154	38	60	101	98	106	164
Task management	46	64	89	159	56	71	81	117
Off-task	0	0	3	3	22	21	27	23

* Attention time = Number of lines of transcription coded for a focus of attention (cf. subsection 5.3.3); ** V = Veronica; *** K = Karen.

Figure 8.14 (see next page) is the combined visualisation of the writing and attention strands of Veronica and Karen's fourth dialogue-writing activity. In the attention strand there is task management throughout the activity. This task management sometimes appears in clusters, as around line numbers 110, 280, 420, 520 and 640. However, as could be predicted by the figures in table 8.26, the most striking feature in the visualisation is the lack of any significant focus on writing dialogue. This lack of focus on writing effectively precludes the identification of any S-patterns. Moreover, where there is alternating focus on content and writing, this does not describe any S-patterns in the micro-context of the composition intervals. Finally, there are quite a few orphan horizontal bars, indicating a lack of shared attention. Most of these orphan horizontal bars are red (Karen), indicating that Veronica does not contribute to the focus of attention on several occasions. These observations go some way towards explaining why it was not possible to identify Veronica's turn completion points. It is also possible that the observations relate the apparent determination on the part of Karen to write a good role-play dialogue.

INSERT FIGURE 8.14 ABOUT HERE

Based on the visualisation of the writing and attention strands of this fourth dialogue-writing activity it is clear that Veronica and Karen’s interaction has again undergone a significant change. That is, there is little evidence that the learner interaction in this fourth activity has an organisation similar to the preceding dialogue-writing activities. For example, there are no visible S-patterns, and there is no orderly distribution of task management across the activity. Only a full visual dynamical analysis could determine the exact extent and quality of the changes that have taken place. Nevertheless, based on the insights gained from the analysis of the pupils’ previous three activities, it may be that the fourth activity represents yet another instance of adaptive self-reorganisation, in response to the, by now, accumulating record of tensions and asymmetries in Veronica and Karen’s successive instances of learner interaction. Moreover, the contextual information used to introduce this sub-section, indicates that it is Karen that is the primary influence on the change.

A numerical comparison of the language code and regulative threads for all four dialogue-writing activities appear in tables 8.27 and 8.28. The numbers for the fourth dialogue-writing activity confirm the passive role Veronica plays. Not only does she speak little Norwegian (only 200 words, as compared to 461 and 458 words in the first and third activities), she speaks virtually no English at all, with only 9 words. In contrast, Karen speaks more Norwegian, but significantly less English, than in any of the earlier activities.

Table 8.27: Comparison of language code thread in 1st through 4th activity; Veronica and Karen

Language code measure	Mar 2000		May 2000		Oct 2000		Jan 2001	
	V*	K**	V	K	V	K	V	K
Number of Norwegian words	461	528	185	457	458	595	200	709
Number of English words	128	256	89	448	46	310	9	124

* V = Veronica; ** K = Karen.

The difference between the levels of Karen and Veronica’s participation in the fourth dialogue-writing activity is also evident in the numbers for the regulative threads in table 8.28. Here, Veronica’s non-prospective regulative activity is limited to only 18 instances in total, which is similar to the level for the second activity. Karen, by contrast, is responsible for 100 instances of non-prospective regulative activity, something that nevertheless is below her average for the three earlier activities. In the prospective regulative thread Veronica’s activity is limited to 23 instances, five of which are uncooperatively attended to by Karen. This is

again similar to the second activity, both in terms of the overall level, and in that Veronica does next to no suggesting. Karen, however, is responsible for more prospective regulative activity than in any of the earlier instances of learner interaction.

Table 8.28: Comparison of regulative threads in 1st through 4th activity; Veronica and Karen

Regulative threads	Instances of regulative activity*							
	Mar 2000		May 2000		Oct 2000		Jan 2001	
	V**	K***	V	K	V	K	V	K
Non-prospective thread								
Truncating	36	52	12	45	30	50	12	56
Pacing	4	12	1	2	1	10	1	4
Voicing	34	43	2	79	9	72	1	14
Focusing	3	32	5	43	4	9	4	26
Total	77	139	20	169	44	141	18	100
Prospective thread:								
Questioning	8 : 5	2 : 0	6 : 1	7 : 0	7 : 0	6 : 0	5 : 1	8 : 0
Negotiating	23 : 4	3 : 1	12 : 1	4 : 0	11 : 1	5 : 0	11 : 0	13 : 0
Directing	2 : 1	11 : 1	2 : 0	26 : 0	2 : 0	17 : 0	1 : 2	15 : 0
Suggesting	13 : 11	18 : 0	0 : 1	7 : 0	26 : 0	35 : 0	1 : 1	39 : 0
Helping	0 : 0	7 : 0	0 : 1	7 : 0	0 : 0	7 : 0	0 : 1	3 : 0
Total	46 : 21	41 : 2	20 : 4	51 : 0	46 : 1	70 : 0	18 : 5	78 : 0

* Sets of numbers of prospective regulative activity represent cooperative and uncooperative responses, respectively. For example, in March 2000, Veronica asked a total of 13 questions; 8 of which received cooperative responses from Karen, and 5 of which received uncooperative responses from Karen; ** V = Veronica; *** K = Karen

The in-depth analysis of Veronica and Karen's first dialogue-writing activity in chapter seven argued that the pupils were struggling to come to an agreed approach to how to solve the activity (cf. section 7.3). Given the outcomes of the visual analysis of their successive instances of learner interaction, this struggle appears to extend across all four of these pupil's dialogue-writing activities. That is, there is some form of adaptive self-reorganisation going on in each of the series of activities. In other words, in each successive activity there is a discernible change in the dynamics of the pupils' learner interaction. Moreover, throughout it

seems that Karen has had a greater influence on the changes, while Veronica has alternated between being more active (in the first and third activities) and more passive (in the second and fourth activities).

8.4.2 Morten and Tim: January 2000

In the fourth dialogue-writing activity Morten and Tim seemed less casual, or more sincere, than in the previous activity (when e.g., Morten had insisted on not using a chair; cf. sub-section 8.3.2). However, about halfway through the composition of their role-play dialogue they seemed to run into the potential conflict between the task materials and the way they had solved the role-play task in the past. They asked the teacher for clarification at this point, but as he did not realise the nature of the problem at the time (cf. sub-section 4.5.4), they were not able to get a satisfactory answer.

Table 8.29 provides an initial numerical comparison of Morten and Tim's four dialogue-writing activities. The table shows that Morten wrote 8 turns, and Tim 7 turns, in the fourth activity. Furthermore, the pupils spent 20 minutes on this last activity, which is consistent with the previous activities.

Table 8.29: Turns written, and duration of, 1st through 4th activity; Morten and Tim

	Mar 2000		May 2000		Oct 2000		Jan 2001	
	M**	T***	M	T	M	T	M	T
Number of turns written*	13	13	13	13	6	6	8	7
Duration of activity	20 min		18 min		17 min		20 min	

* Turns written do not include the title or other captions (e.g., 'the end'); ** M = Morten; *** T = Tim.

Figure 8.15 (see next page) is the basic visualisation of the writing strand in Morten and Tim's final dialogue-writing activity. Just as in the third activity, the visualisation contains very lengthy composition intervals; in particular the intervals for turns 2 and 5. Furthermore, the text boxes at the bottom of figure 8.15 reveal that the pupils, in fact, wrote two shorter role-play dialogues (note the 'disconnect' where Tim has inserted 'NEW' in the dialogue text). This appeared to be an outcome of the conflict between the task materials and how the pupils had solved the task in the past. That is, the pupils decided to abandon the format of the previous role-play tasks, where the dialogue was invariably between no more than two fictional characters. Note also the subversive nature of the 'second' dialogue the pupils write.

INSERT FIGURE 8.15 ABOUT HERE

A numerical comparison of the attention strand in all four of Morten and Tim's dialogue-writing activities appears in table 8.30. The table reveals some changes that appear predictable. For example, the time spent focusing on writing dialogue, which decreased steadily across the three previous activities, has decreased further, and now stands at no more than about 110 transcription lines. Furthermore, the amount of task management has increased further on the already higher level in the third activity. Finally, focus on planning the performance, which first appeared in the third activity, has now increased to where it poses a substantial element in the pupils' learner interaction. To a lesser extent, the same is true for the pupils' off-task focus.

Table 8.30: Comparison of attention strand in 1st through 4th activity; Morten and Tim

Focus of attention	Attention time*							
	Mar 2000		May 2000		Oct 2000		Jan 2001	
	M**	T***	M	T	M	T	M	T
Planning Performance	6	6	0	0	38	38	60	60
Rehearsing	0	0	0	0	0	0	0	0
Writing	343	338	217	238	175	175	108	117
Content	216	210	191	189	245	259	251	253
Task management	49	46	37	39	81	66	97	115
Off-task	14	5	7	12	0	1	24	30

* Attention time = Number of lines of transcription coded for a focus of attention (cf. subsection 5.3.3); ** M = Morten; *** T = Tim.

Figure 8.16 (see next page) represents the combined visualisation of the writing and attention strands in Morten and Tim's final dialogue-writing activity. In contrast to the numerical description of the attention strand, the picture of the pupils' learner interaction revealed by the visualisation could not be predicted. Moreover, it is immediately apparent that something very different is going on this final dialogue-writing activity.

INSERT FIGURE 8.16 ABOUT HERE

The visualisation of the writing and attention strands shows that the first half of the fourth activity proceeds very much according to a similar ‘script’ as in the previous activities. There is an initial period of task management, followed by a composition interval without any discernable pattern in the pupils’ focus of attention. This, then, is followed by a lengthy composition interval for the writing of turn 2. This second composition interval contains several alternations between focus on content and writing (highlighted in dark green), which can be explained by the multiple clauses in turn 2 of the pupils’ dialogue (cf. the textboxes at the bottom of figure 8.15). Subsequent to this there are two further composition intervals with S-patterns (turns 3 and (1)). However, this is where any predictable progression in Morten and Tim’s last dialogue-writing activity ends.

The brief periods of task management around line numbers 340 and 430 may be symptoms indicating that something is astray. However, it is only beginning around line number 500, soon after the pupils finish the composition of turn (1), that the learner interaction changes dramatically. There is some focus on content between line numbers 460 and 500, which could have been the beginning of some recognisable alternating pattern of attention. However, the pupils then suddenly switch to planning the performance. Then, between line numbers 500 and 630, the pupils’ focus of attention alternates between focus on planning the performance, focus on content, and task management. Furthermore, in this period of the interaction the pupils’ focus of attention is gradually becoming more fragmented. Next, around line number 640 an intermittent off-task focus appears, and for a while the pupils’ focus of attention is highly fragmented, alternating between off-task topics, task management and content. Finally, towards the end of the activity the focus of attention, while still fragmented, begins solidifying around focus on content.

The sudden change in Morten and Tim’s interaction, around line number 500 in figure 8.16, appears related to the confusion they experienced about whether to write a single dialogue, between a park keeper and one other person, or whether to write several dialogues including the park keeper and more than one other person. Note that the teacher contributes to their focus of attention (cf. the blue horizontal bars) around line number 450, and then again around line number 580. This represents the pupils’ attempts at clarifying the conflicting task interpretations with the teacher. However, the conflicting interpretations of what type of role-play to write does not necessarily explain the great amount of focus on planning the performance in the period after line number 500, or subsequent focus on off-task topics. This, then, may be related to the demand for creating an entertaining role-play.

In terms of change processes, the dialogue-writing activity seems to fall into two halves. The first half of the activity is similar to the previous activities. That is, there is an initial phase of task management, and then alternating patterns, between focus on content and writing, in the micro-context of the composition intervals. In contrast, the second half of the

activity exhibits nothing that could be predicted. The question, then, is whether the second half of the activity should be classified as adaptive self-reorganisation, or whether it constitutes a breakdown in the pupils' learner interaction. The duration of the composition interval for turn 5 offers a clue to which change process might apply. That is, this composition interval lasts for as long as six minutes (cf. the orange highlighted area in the time measure in figure 8.16). Furthermore, the only thing the pupils achieve in this composition interval (note that this is a dialogue-writing activity) is to write a relatively short and rather subversive turn (cf. turn 5; "Park K: Hey, you can't pi on in this bush."). This, taken together with the persistence of fragmented focus of attention, task management and off-task talk, indicates that there might be a period of *breakdown* somewhere between line numbers 500 and 750. Finally, the fact that the change around line number 500 was brought on by the pupils' confusion about two different interpretations of how to do the activity, is further evidence for concluding that there is a breakdown in their interaction.

Tables 8.31 and 8.32 contain numerical comparisons of the language code and regulative threads across Morten and Tim's four successive dialogue-writing activities. At first glance, the numbers for the pupils' English and Norwegian language use represent only a slight departure from the previous instances of learner interaction. However, a closer look at the numbers reveal a consistency in the pupils' language use across the three earlier activities, and the absence of this consistency in the last activity. The consistency across the first three activities can be summarised as follows:

1. Morten invariably uses slightly more English than Norwegian words.
2. Tim invariably uses slightly more Norwegian than English words.
3. Tim invariably uses more Norwegian words than Morten does.

Checking for these consistencies in the numbers for the fourth activity reveals that only one of the consistencies now hold. This may be additional evidence that something different is happening in the fourth dialogue-writing activity.

Table 8.31: Comparison of language code thread in 1st through 4th activity; Morten and Tim

Language code measure	Mar 2000		May 2000		Oct 2000		Jan 2001	
	M*	T**	M	T	M	T	M	T
Number of Norwegian words	334	422	218	313	286	345	465	432
Number of English words	400	331	388	257	306	314	270	236

* M = Morten; ** T = Tim.

Table 8.32 shows that the levels of both non-prospective and prospective regulative activity are consistent with the average for the previous three dialogue-writing activities. For example, the levels of questioning and negotiating are relatively low, just as they were for the second and third activity. The level of voicing is on par with the third activity, and the levels of focusing and directing activity are high, but not inconsistently so, as compared to the previous activities. Hence, this numerical data does not seem to reflect the breakdown in these pupils' interaction in the fourth dialogue-writing activity (but cf. discussion in section 8.5).

Table 8.32: Comparison of regulative threads in 1st through 4th activity; Morten and Tim

Regulative threads	Number of instances of regulative activity*							
	Mar 2000		May 2000		Oct 2000		Jan 2001	
	M**	T***	M	T	M	T	M	T
Non-prospective thread								
Truncating	42	54	47	40	30	41	28	40
Pacing	3	1	6	9	1	3	7	0
Voicing	60	76	77	76	28	43	34	34
Focusing	25	19	29	42	17	29	34	49
Total	130	150	159	167	76	116	103	123
Prospective threads								
Questioning	9	13	3	4	6	3	4	4
Negotiating	13	20	10	3	11	6	9	9
Directing	12	9	9	16	8	11	18	15
Suggesting	18	27	28	22	29	30	32	35
Helping	6	3	3	0	2	0	2	0
Total	58	72	53	45	56	50	65	63

* Regulative activity that received uncooperative responses has been excluded; ** M = Morten; *** T = Tim.

Finally, looking at Morten and Tim's successive activities as a whole reveals that the dynamics of their learner interaction has been relatively stable across the series of four dialogue-writing activities. This is in contrast to Veronica and Karen's learner interaction, which was characterised by marked changes in each of the successive dialogue-writing

activities. The only exception to the stability in Morten and Tim’s learner interaction is the breakdown suffered in the final dialogue-writing activity.

8.4.3 Marcus and Dennis: January 2001

According to the observational notes, there were no significant contingencies in Marcus and Dennis’ fourth dialogue-writing activity. However, at a few points during their activity they showed frustration with the topic of the task, but admitted (to themselves, and during the interaction) that their frustration was in part due to their own choice of fictional characters. Moreover, their frustration seemed to lead them to confront the conflict between the task materials, and the way they had done the activity previously. Unlike Morten and Tim (cf. sub-section 8.4.2), they seemed to use this conflict as an opportunity for switching to write a dialogue that they liked better. The fact that they excluded the original dialogue when they wrote an agreed upon version of their role-play in the researcher’s notebook during the follow up activity (cf. sub-section 4.4.3) supports the interpretation that they liked the second dialogue better. Finally, the observational notes indicate that towards the end of their dialogue-writing activity Marcus and Dennis appeared pressed for time, and they were the last pair in the class to finish writing their role-play dialogue.

Table 8.33 provides a comparison of the number of turns written, and duration of, Marcus and Dennis’ four successive dialogue-writing activities. The table shows that the pupils wrote 11 turns each in the final activity, which is the same as in the second and third activities. However, the pupils spent 28 minutes on the fourth activity, which is longer than any of the previous ones.

Table 8.33: Turns written, and duration of, 1st through 4th activity; Marcus and Dennis

	Mar 2000		May 2000		Oct 2000		Jan 2001	
	M**	D**	M	D	M	D	M	D
Number of turns written*	6	6	11	11	11	11	11	11
Duration of activity	24 min		24 min		23 min		28 min	

* Turns written do not include the title or other captions (e.g., ‘the end’); ** M = Marcus; *** D = Dennis.

Figure 8.17 (see next page) contains the basic visualisation of the writing strand in Marcus and Dennis' final dialogue-writing activity. This visualisation resembles that of the writing strand in the second and third activities (cf. sub-sections 8.2.3 and 8.3.3). That is, the pupils' composition of dialogue turns is again evenly spaced out across the activity, and the pupils write a dialogue that has the same number of turns as in the two previous activities. Two differences are evident, however. One is that there is some asynchrony in the pupils' composition of turns towards the end of the activity. In addition, the turns the pupils wrote are considerably shorter, as compared to the second and third activities (cf. the textboxes at the bottom of figure 8.17). Note also that turns 1 through 3 represent the first dialogue the pupils wrote, and which they were frustrated with, and that turns 4 through 11 represent the second dialogue they wrote, and which they liked better.

Table 8.34 provides a numerical comparison of the attention strand across all four of Marcus and Dennis' dialogue-writing activities. A first feature of these numbers is that focus on planning the performance, which had increased across the two previous activities, is now absent. Another change is that the pupils' focus on writing is at a slightly higher level again. It is now higher than in the third activity, but still considerably lower than in the first two activities. Focus on content, however, shows a clear increasing trend across the four activities, with the highest level reached in this final activity. Finally, the pupils' task management is slightly lower than the average for the four activities, but not as low as in the second activity.

Table 8.34: Comparison of attention strand in 1st through 4th activity; Marcus and Dennis

Focus of attention	Attention time*							
	Mar 2000		May 2000		Oct 2000		Jan 2001	
	M*	D**	M	D	M	D	M	D
Planning performance	0	0	24	24	95	105	0	0
Rehearsing	13	13	0	0	0	0	0	0
Writing	350	313	320	251	137	58	151	117
Content	178	167	250	232	399	354	453	469
Task management	118	73	52	58	106	108	81	61
Off-task	0	0	12	13	7	3	28	12

* Attention time = Number of lines of transcription coded for a focus of attention (cf. sub-section 5.3.3); ** M = Marcus; *** D = Dennis.

INSERT FIGURE 8.17 ABOUT HERE

The combined visualisation of the writing and attention strands in Marcus and Dennis' final dialogue-writing activity appears in figure 8.18 (see next page). The visualisation shows that the pupils' task management appears at the beginning of the activity, but then again between line numbers 330 and 530. This task management in the middle of the activity coincides with the pupils switching to writing a different dialogue. In other words, these pupils were confronted with a very similar situation as Morten and Tim were in the fourth activity, and in about the same part of the activity. However, their interaction did not suffer any breakdown.

In the micro-context of the composition intervals in figure 8.18, there are both S-patterns (highlighted in light green) and double-S-patterns (highlighted in dark green). However, during the period of task management, between line numbers 330 and 530, there are two composition intervals (for turns 3 and 4) without any recognisable patterns (not highlighted in the figure). This might indicate that the change from the original dialogue the pupils were writing, to the new dialogue that they enjoyed more, did require a 'local' adaptive response by the pupils. Towards the end of the activity, the composition interval for turn 8 also lacks any familiar pattern of attention. Finally, there is a two-minute period at the very end of the activity where the asynchrony in the pupils' writing precludes the identification of any patterns.

The visual analysis of Marcus and Dennis' last instance of learner interaction shows some changes on the earlier instances. Proportionally to the total number of turns the pupils write, fewer of the composition intervals contain S-patterns or double-S-patterns. However, the reason for this seems to be the period of task management in the middle of the activity, between line numbers 330 and 530, as well as the final part of the activity, where there is some asynchrony in the pupils' writing. In other words, the fewer patterns are in part due to the switch to writing a different dialogue halfway through the activity. Moreover, the period of asynchrony at the end of the activity may relate to the fact that they spent 28 minutes on this activity, which is longer than their earlier activities (cf. table 8.33), and considerably longer than the other two participant pairs (cf. table 8.25 in sub-section 8.4.1 and table 8.29 in sub-section 8.4.2), and that they, therefore, were pressed for time. The observational notes, as well as the great number of turns written at the very end of the activity, support this interpretation. Hence, apart from the middle and the very end of the activity, Marcus and Dennis' interaction is quite similar to the three earlier dialogue-writing activities. In other words, there is no persistent change process in this final dialogue-writing activity. Rather, there is a local instance of adaptive-self-reorganisation in the middle, and the pupils are pressed for time towards the end, of the dialogue-writing activity.

INSERT FIGURE 8.18 ABOUT HERE

Table 8.35 contains a numerical comparison of the language code thread across Marcus and Dennis' four successive dialogue-writing activities. The numbers for the fourth activity resemble those for the first and third activities. This may be used in support of the conclusion that there is no persistent change process in the pupils' fourth dialogue-writing activity.

Table 8.35: Comparison of language code thread in 1st through 4th activity; Marcus and Dennis

Language code measure	Mar 2000		May 2000		Oct 2000		Jan 2001	
	M*	D**	M	D	M	D	M	D
Number of Norwegian words	638	394	367	240	704	452	626	410
Number of English words	404	166	474	299	479	222	467	277

* M = Marcus; ** D = Dennis.

Table 8.36: Comparison of regulative threads in 1st through 4th activity; Marcus and Dennis

Regulative threads	Number of instances of regulative activity*							
	Mar 2000		May 2000		Oct 2000		Jan 2001	
	M**	D***	M	D	M	D	M	D
Non-prospective thread:								
Truncating	65	21	77	23	57	44	54	38
Pacing	1	0	5	1	1	0	3	0
Voicing	87	40	117	81	77	17	30	14
Focusing	35	11	32	11	54	24	48	27
Total	188	72	231	116	189	85	135	79
Prospective threads*:								
Questioning	5	7	9	2	7	4	5	3
Negotiating	20	16	13	20	27	10	9	15
Directing	29	10	9	5	29	17	21	12
Suggesting	24	23	28	39	33	38	53	47
Helping	4	2	1	1	1	0	0	0
Total	82	58	60	67	97	69	88	77

* Regulative activity that received uncooperative responses has been excluded; ** M = Marcus; *** D = Dennis.

Table 8.36 provides a numerical comparison of the regulative threads across Marcus and Dennis' four dialogue-writing activities. Maybe the most apparent change on the earlier activities is that the pupils' voicing is at a very low level in the fourth activity. Moreover, they made a very large number of suggestions as compared to the earlier activities. The remaining regulative activities are all largely consistent with the numbers for the previous activities, except that the pupils negotiated somewhat less than what had been average. This may again be seen as additional evidence that there is no persistent change in the pupils' fourth dialogue-writing activity.

In sum, the dynamics of Marcus and Dennis' learner interaction across the four dialogue-writing activities was fairly stable. The only exception to this stability was an initial form of adaptive self-reorganisation in the third dialogue-writing activity. Moreover, the pupils' local adaptive response to the conflicting messages of the task materials and how they had done the activity in the past did not appear to perturb them away from the overall dynamics of their learner interaction. That is, unlike Morten and Tim, they used these conflicting messages as an opportunity rather than an obstacle.

8.5 Pupils' Contribution to the Change Processes

The visual analysis of the pupils' successive dialogue-writing activities has included discussion of how the changing task demands may have affected their learner interaction. However, in the visual analysis it was also clear that each of the pupil pairs made their own contributions to the changes that could be observed across the series of dialogue-writing activities.

Both focusing and directing activity is a *means* for the pupils to 'control' their activity (cf. sub-section 5.3.7). Moreover, focusing and directing activity, as a means for controlling their activity, might also be a means to affect changes to their activity. Motivated by this initial hypothesis, the relationship between focusing and directing activity, and the change processes identified through visualisation, was explored. What emerged was that, in the case of self-stabilising change, the pupils focused and directed *less*, and in the case of adaptive self-reorganising change, the pupils focused and directed *more*. In addition, where no change process was identified, the levels of focusing and directing would be neither high nor low. Finally, although breakdown was not common in the data, the one instance this change process was identified, levels of focusing and directing were slightly higher than would otherwise be expected.

The above-described relationship was the clearest in the case of Marcus and Dennis. Figure 8.19 represents these two pupils' focusing and directing activity across the four

successive dialogue-writing activities (but note that the first activity was only used as a measure for ascertaining change in the later activities). The visual analysis of Marcus and Dennis' second activity identified a self-stabilising change process. Figure 8.19 shows that this self-stabilising change process is associated with low levels of both focusing and directing. In the third activity, however, the visual analysis identified an initial form of adaptive self-reorganisation, which in figure 8.19 can be associated with higher levels of focusing and directing activity. Finally, the visual analysis of the fourth activity showed no change, except for a brief period of adaptive self-reorganisation in the middle of the activity. Again, the levels of focusing and directing for the fourth activity, in figure 8.19, seem consistent with the visual analysis. That is, no change would result in neither high nor low levels of this regulative activity, but the brief period of adaptive self-reorganisation in the middle of the activity might have made the levels slightly higher than what they would otherwise be.

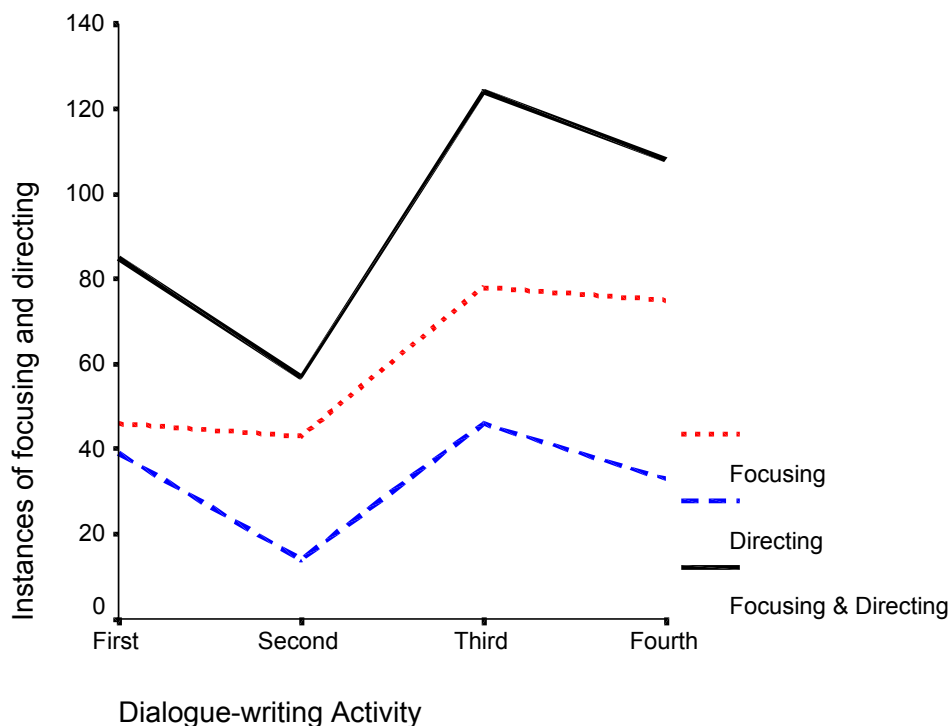


Figure 8.19: Focusing and directing across successive activities; Marcus and Dennis

An analysis of Morten and Tim's successive instances of learner interaction showed a similar relationship. In the second activity the visual analysis identified no change, indicating that the levels of focusing and directing would be neither high nor low. Figure 8.20, which represents Morten and Tim's focusing and directing activity across the four activities, shows that this was in fact the case. Furthermore, the visual analysis identified a self-stabilising change process in these pupils' third activity. In figure 8.20 this is associated with lower levels of

focusing and directing activity. Finally, in the pupils' fourth dialogue-writing activity the visual analysis identified breakdown in the last half of their activity. This, then, corresponds to the somewhat higher levels of focusing and directing activity for the final activity in figure 8.20.

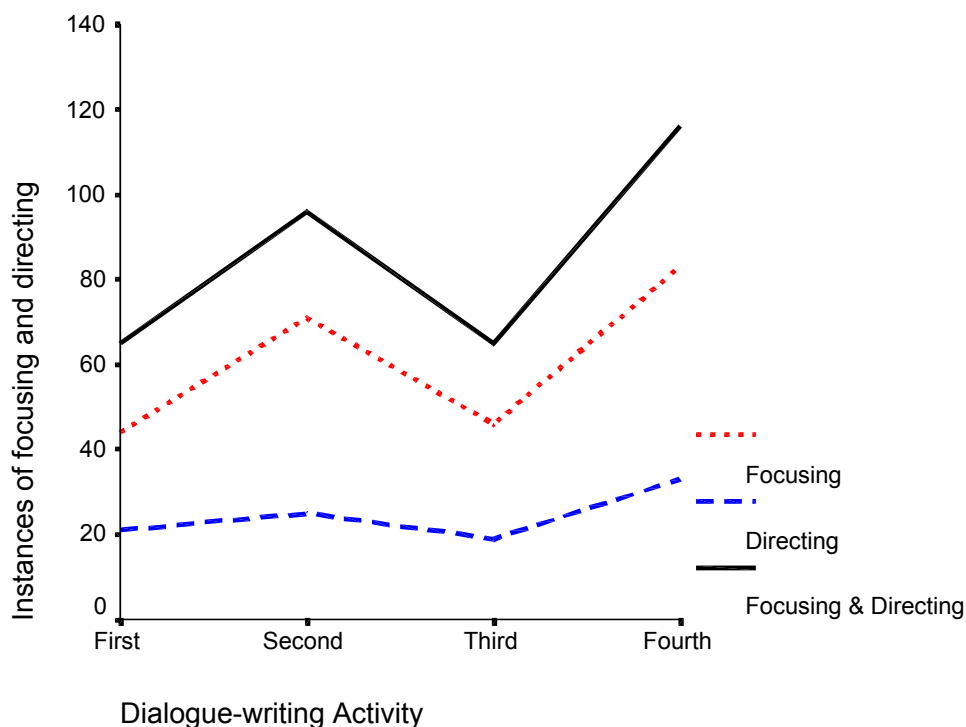


Figure 8.20: Focusing and directing across successive activities; Morten and Tim

Finally, the same analysis for Veronica and Karen's successive instances of learner interaction is not as straightforward. Figure 8.21 represents these pupils' focusing and directing activity across the four dialogue-writing activities. However, since the visual analysis identified some form of adaptive self-reorganisation in each of the four activities, there is nothing to compare these levels of focusing and directing to. In addition, Veronica's focusing and directing activity was very limited in all four activities (cf. table 8.28 in sub-section 8.4.1). Hence, the numbers used to generate the comparison of focusing and directing across the series of activities largely reflects Karen's contribution only.

In figure 8.21, the highest levels of focusing and directing activity appear in the second dialogue-writing activity. It may be possible to interpret this is in the context of the suggestion made at the end of sub-section 8.4.1. That is, it was suggested that these pupils' adaptive self-organisation might be seen as spanning all four dialogue-writing activities. In that case, it might be that the adaptive response of this pupil pair was at its greatest in the second activity.

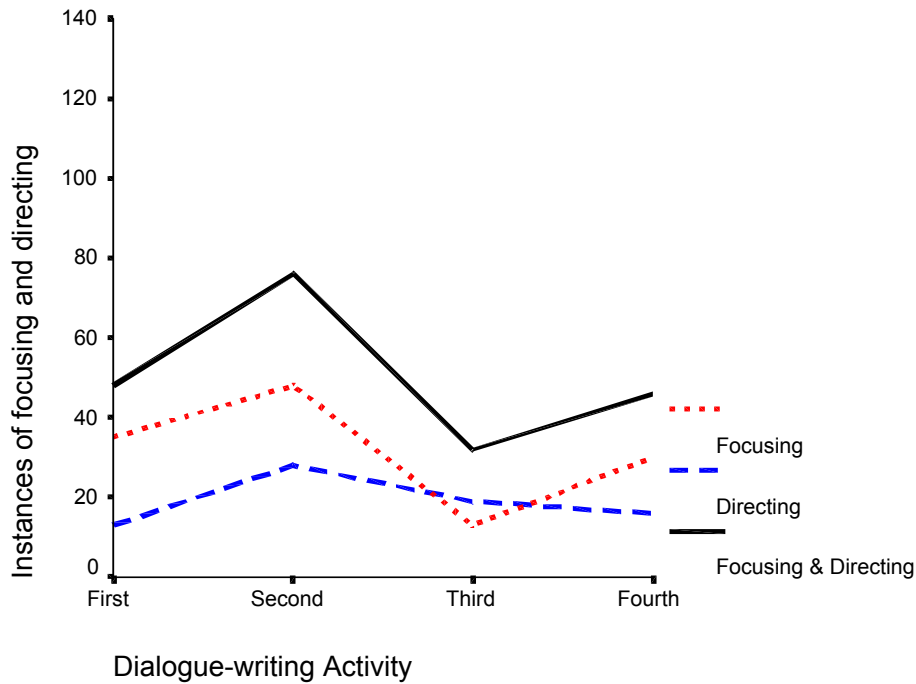


Figure 8.21: Focusing and directing across successive activities; Veronica and Karen

The relationship between the pupils' focusing and directing activity, and change processes, indicates that it is not only the task that affects the dynamics of learner interaction. The fact that the levels of directing and focusing vary across the successive activities shows that the pupils make their own contributions to the activity. This raises the possibility that they influence the type of change process that their learner interaction undergoes.

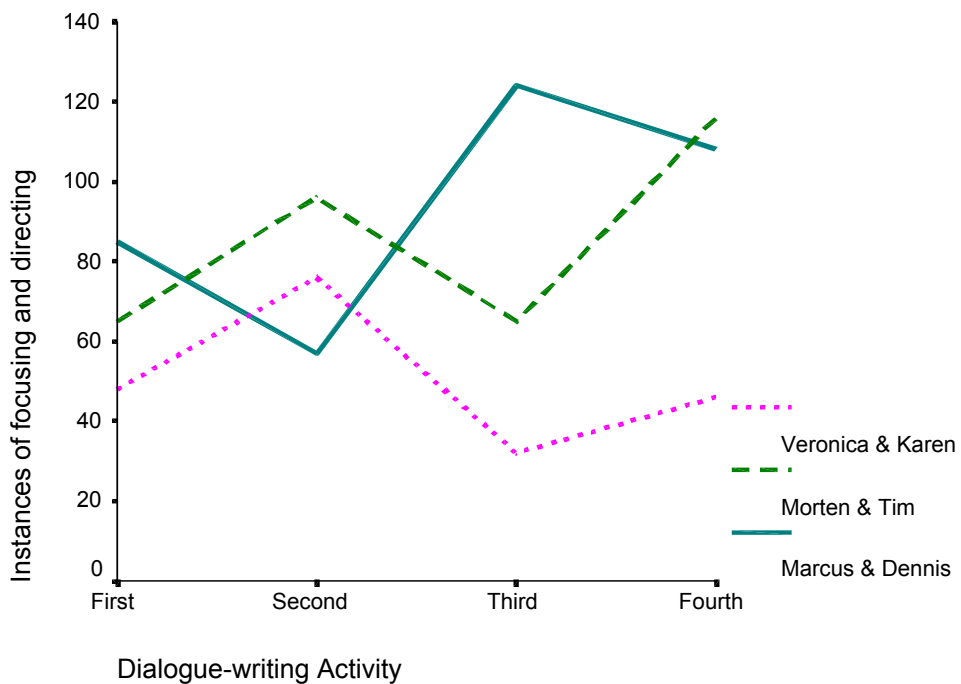


Figure 8.22: Focusing and directing across successive activities; all cases

Figure 8.22, which represents the combined total of focusing and directing for each pupil pair across the series of four dialogue-writing activities, is further evidence for how differently the pupils respond to the successive activities. That is, the figure shows some similarity in Veronica and Karen, and Morten and Tim's, focusing and directing across the four dialogue-writing activities. However, Marcus and Dennis' focusing and directing activity follows an almost counter cyclical pattern across the four dialogue-writing activities.

The present analysis of the relationship between change processes and the pupils' focusing and directing goes some way towards validating the type of visualisation conducted in this chapter. That is, the change processes identified through visualisation have been shown to relate to something more concrete, i.e., the pupils' focusing and directing activity. In addition, the relationship gives additional information about the change processes, in the form of what type of learner talk they are associated with, and thereby suggests a possible method for exploring them further. Finally, the relationship suggests that there are dynamic interrelationships between activity strands and threads. That is, the visual analysis of change processes relied on the writing and attention strands only, and the outcome of this visual analysis could be related to a numerical description of focusing and directing activity.

8.6 Summary of Changes in Learner Interaction

Consistent with the research aims of the study (cf. section 1.1), as well as research question three (cf. sub-section 4.1), the analysis in this chapter attempted to identify changes in the pupils' learner interaction across the series of similar dialogue-writing activities through visualisation. These changes, in the form of the three change processes Pianta and Walsh (1996) suggest social systems can go through, are summarised in table 8.37.

As was pointed out in the development of the dynamical perspective in chapter three, as well as in section 8.1 of the present chapter, what these change processes would 'look like' in the visualisations was unclear. Hence, the analysis in this chapter should be considered exploratory. Moreover, the fact that the visual analysis of change processes was limited to visualising only the writing and attention strands in the pupils' interaction, the level of insight into the dynamics of each successive instance of learner interaction is not as 'rich' as that provided by the full visual dynamical analyses in chapter six.

The visual analysis raises issues about how change in pupils' learner interaction across similar activities can be conceptualised. For example, the present analysis conceptualised the change as 'located' in, or occurring *during*, the dialogue-writing activities. This is despite the fact that the dynamical perspective developed in chapter three argued that the dynamics of learner interaction was also affected by influences occurring *before* the activity, as well as by

the task-as-plan (cf. sub-section 3.2.1). This, and other conceptual issues raised by the visual analysis of change processes, is covered in more depth in chapter nine, which discusses the contributions of visualisation as a method for research on learner interaction.

Table 8.37: Summary of change processes; all cases

Participants	Change process		
	May 2000	October 2000	January 2001
Veronica and Karen	Initial form of adaptive self-reorganisation	Adaptive self-reorganisation	Adaptive self-reorganisation
Morten and Tim	No change	Slight self-stabilisation	Partial breakdown
Marcus and Dennis	Self-stabilisation	Initial form of adaptive self-organisation	No change (with local adaptive self-reorganisation)

The visual analysis also raises the question of how the change processes that were identified might relate to the pedagogical potential of the dialogue-writing activity. For example, in the case of Morten and Tim, the stability that the dynamics of their learner interaction exhibited across the series of activities (except in the case of the breakdown in their last activity), may not have challenged the pupils very much. A similar in-depth analysis of learner talk, as was conducted on Veronica and Karen's first dialogue-writing activity in chapter seven, might provide an answer to such a question. That is, an in-depth analysis of learner talk could explore how the stable dynamics in Morten and Tim's learner interaction affected the demands and support in their dialogue-writing activities.

Finally, despite its exploratory nature, the visual analysis in the present chapter has managed to make present a great deal of learner interaction data. This attests to the potential of visualisation for presenting data, findings and insights with economy. Moreover, the analysis of the pupils' own contributions to the change processes, in the form of focusing and directing activity (cf. section 8.5) illustrates one way in which the visual analysis of change processes can be used in conjunction with other types of analysis.