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Abstract

This study investigates the relationships between connectedness in discourse and the in-text comments that tutors write on postgraduate essays at a Thai university. Connectedness was divided into cohesion, propositional coherence and interactional coherence which were analysed using Hoey's (1991) lexical analysis, topical structure analysis and genre analysis respectively. From these analyses, text-level features of connectedness and points in the assignments which are potentially problematic in terms of connectedness were identified, and these were compared against the tutors' comments. The findings show very little relationship between the analyses of connectedness and the tutors'

comments. The non-results may be due to the constructs of connectedness analysed, the methods of analysis, the data, or the lack of any clear relationship between the tutors' comments and the quality of the texts as measured by grades.

Keywords: connectedness, coherence, cohesion, tutors' comments, students' texts

In tertiary education in the humanities, it is common for tutors to require students to write essay-like assignments. On receiving these, tutors may give in-text comments to help students' learning and assign a grade. The comments given may focus on language, organisation and content – the criteria that often form the basis of schemes for marking writing (Bailey, 1998; Weigle, 2002) – but it is unclear what aspects of the text prompt the tutor to give comments.

For language, comments may often be prompted by inaccurate or inappropriate local use of language. For organisation and content, on the other hand, because of their inherent intractability, even the tutors themselves may not be clear about the aspect of a text prompting a comment. Nevertheless, comments on organisation and content may be related to the discourse structure of the students' essays, and in this paper we intend to investigate whether there is a relationship between one aspect of this discourse structure, namely, connectedness, and the comments given on students' texts.

In order to do this, we first need to analyse connectedness in students' texts, which we will do by applying three different theoretically-based methods of analysing connectedness to the texts. Since these three methods were all originally designed for analysing native speaker texts and the texts in this study were written by non-native speakers, the first stage of this study aims to evaluate the applicability of the three methods of analysis to non-native speaker writing. The texts were both written and marked by Thai non-native speakers of English. The writing of Thais, both in their first and foreign languages, contains more repetition than the writing of others and tends to leave the main point to the end of the text (Hinds, 1990). These features may mean that analyses designed for native English speaker writing cannot be validly applied to the data in this study. Our first research question therefore concerns

whether the three methods of analysing connectedness are applicable to the students' texts.

Having examined the connectedness in the students' texts, we will turn to the tutors' comments, specifically those comments which focus on organisation and content. Assuming that any in-text comments given by tutors are prompted by features of the text at points near to where the comment is made, and that in-text comments which focus on organisation and content are prompted by discourse-level features of the text, we will investigate whether there is any relationship between, on the one hand, the findings from the three analyses of connectedness and, on the other, the placement and nature of the tutors' comments. This provides a test of the theories and methods of analysing connectedness in terms of whether the location and possibly the nature of tutors' comments can be predicted through analyses of connectedness, as well as potentially providing insights into what features of texts stimulate tutors' comments. Our second research question therefore concerns what relationship there is between the findings from the analyses of connectedness and the tutors' comments on organisation and content.

To be able to answer our two research questions, we will need to make several assumptions. We have already seen that we need to assume that in-text comments are prompted by features of the texts at specific locations and that discourse-level features prompt comments on organisation and content. Further assumptions we need to make concerning the comments include assuming that the comments provide an indication of how the tutors read the texts and that connectedness is an issue which can stimulate comments. In addition, we are also assuming that the constructs of connectedness and methods of analysis are applicable to the texts. With so many assumptions underpinning the research, the value of conducting the research could be questioned. However, we believe that the assumptions we are making are reasonable and that all research is based on numerous assumptions, even if they are not usually stated. By making our assumptions explicit, in addition to answering the two research questions, conducting the research allows us to evaluate the validity of the assumptions.

1 Connectedness in writing

Connectedness refers to all of the links, both explicit and implicit, in a text that make it a unified whole. Usually, connectedness is divided into cohesion and coherence, where cohesion refers to explicit links and coherence refers to implicit links. In this paper, however, following Lautamatti (1990), Stubbs (1983) and van Dijk (1977), we intend to further divide coherence into propositional coherence and interactional coherence. We will therefore investigate three aspects of connectedness: cohesion, propositional coherence, and interactional coherence. These three aspects of connectedness are related to Halliday's (1970) metafunctions of language, with cohesion providing connectedness related to the textual metafunction, propositional coherence associated with the ideational metafunction, and interactional coherence the interpersonal metafunction.

1.1 Cohesion

Cohesion, as noted above, refers to the explicit linguistic devices that link the sentences in a text. These cohesive devices include reference, substitution, ellipsis, conjunction and lexical cohesion (Halliday and Hasan, 1976), and since they are manifested at the surface level of a text, cohesion should be relatively straightforward to identify. To analyse cohesion in a text, there are two main approaches. First, we could use the taxonomy of cohesive devices of Halliday and Hasan (1976). Second, we could use the lexical analysis of Hoey (1991), which stresses lexical cohesion but also accounts for other types of devices. In this paper, to compare an analysis of cohesion with the tutors' comments on the assignments, we need to be able to identify points in the students' texts that could be considered problematic in terms of cohesion. While Hoey's lexical analysis allows the identification of cohesion breaks in a text, Halliday and Hasan's taxonomy does not. Moreover, there is some evidence that semantic-relation-based lexical cohesion (as focused on in Hoey's approach) is readily perceived by readers of texts (Morris, 2004) and is a key factor in creating and interpreting discourse (Muto, 2006). We will therefore use Hoey's (1991) lexical analysis to analyse the cohesion of the texts.

1.2 Propositional coherence

As coherence is the implicit links in a text, it exists in how people interpret texts rather than in the texts themselves (Yule, 1996). One resource people use in interpreting texts is background knowledge which allows readers to identify implicit links between the concepts and propositions in the text. These conceptual links are the basis of propositional coherence. This type of coherence is likely to be important in this study, since propositional coherence generally plays a greater role than interactional coherence in providing unity to written texts (Lautamatti, 1990; Redeker, 1990).

To analyse propositional coherence, there are several options available to us. For example, we could attempt to apply the analysis of topic shift and drift of Crow (1983), although this approach relies on subjective interpretations of discourse; we could use topic-based analysis (Watson Todd, 1998; Watson Todd et al., 2004), although this approach does not clearly distinguish between propositional coherence and lexical cohesion; or we could use topical structure analysis or theme-rheme progression (Connor and Farmer, 1990; Daneš, 1974; Schneider and Connor, 1990). Since the last of these allows us to identify coherence breaks (Wikborg, 1990) or points in the texts at which the implicit links of propositional coherence could be considered problematic and since this approach has been used successfully to analyse students' writing (e.g. Connor and Farmer, 1990), we will use topical structure analysis to analyse propositional coherence in this study.

1.3 Interactional coherence

A second resource people use to identify the implicit links in a text involves the communicative functions or acts in the discourse. Based on implicit links in illocutionary force (Widdowson, 1978), interactional coherence provides unity to a text through a linked series of pragmatic functions or speech acts. Although more likely to play a dominant role in spoken discourse, interactional coherence may still be a consideration in written texts, as evinced by the successes of genre analysis, much of which is founded on analysis of functions (e.g. Bhatia, 1993), in providing useful descriptions of written genres. To analyse interactional coherence in this study, we will use a functionally-oriented genre analysis.

2 The texts

In order to analyse the three aspects of connectedness and to compare the results from these analyses with tutors' comments, we need some academic assignments. For reasons of access and obtaining consent, eight texts in the form of academic essays written by first-year Master degree students (named subjects A to H) at a Thai university were chosen. Seven of the students were Thais and one was Cambodian, all with high levels of proficiency in English. The assignments were one component of a linguistics course and required the students to discuss the relationship between sociolinguistics, English for Specific Purposes and communicative competence. The length of the texts ranged from 1,100 words to 2,500 words with an average length of 1,766 words.

3 Findings concerning connectedness

Our first research question concerns the applicability of methods of analysing the three types of connectedness to the students' texts. In this section, we will explain the three methods of analysis used and present initial findings concerning their application to the students' texts with a particular focus on trying to identify the points in the texts which could be considered problematic.

3.1 Analysing cohesion: Hoey's (1991) lexical analysis

Hoey's (1991) lexical analysis attempts to show how patterns of lexis which reflect text organisation can be identified through studying cohesion. Focusing on lexical cohesion, the approach identifies lexical ties which provide cohesive connections between sentences. Where these ties involve reiteration of a lexical item, the sentences are said to be linked. Two sentences which contain an above-average number of links are termed bonded sentences. Hoey argues that identifying the bonds in a text provides insight into how the text is organised.

Therefore, to conduct a lexical analysis we first need to identify reiterations of lexical items which may involve repetition, paraphrase and use of referring expressions. Taking each reiteration between a pair of sentences as a link, we can then count the

number of links between all possible pairs of sentences in a text. A high number of links between a pair of sentences indicates that they are closely related and they are said to be bonded. In this study, the minimum number of links necessary for two sentences to be considered bonded varies from 3 to 5, in such a way that roughly 10% of all possible pairs of sentences in any given text are counted as bonded. To identify points in the texts regarded as problematic in terms of cohesion, we need to focus on those sentences which are not bonded to other sentences in the text. There are three types of such unbonded sentences:

1. Fully unbonded sentences, which have no bonds with any other sentences in the text, suggesting that the content of the sentence does not fit with the content of the rest of the text, which may prompt tutors' comments.
2. Pre-unbonded sentences, which have no bonds with any sentences appearing earlier in the text, although they do bond with later sentences. These may indicate a new topic in the text, but also that this topic is not sufficiently linked to the previous discourse which may prompt comments about the unexpectedness of the new topic.
3. Post-unbonded sentences, which have no bonds with any sentences appearing later in the text, although they do bond with earlier sentences. These may indicate the end of a topic, and thus comments at such points may relate to problems with the whole of the preceding section.

A brief analysis of a sample extract can illustrate how this analysis works. Extract 1 below is taken from text F where the threshold for bonds is set at 5 links, and superscript numbers refer to sentence numbers within the text.

Extract 1

[21] Most of all, participant should be careful with the components of speech event that it is mentioned above as well. [22] The approach of sociolinguistics in terms of the components of speech events is important and influences the development of language teaching. [23] In language teaching, teacher has knowledge in the approach of sociolinguistics. [24] They should adjust their attitude from teaching in the old day-in terms of grammar translation such as grammar is taught inductively, students practice vocabulary using new words in complete sentence in terms of

> structural linguistics such as the learners learn by imitating from teacher in terms of behaviorism learning by memorizing but all of them may not use language in real communication. [25] Teachers should change their attitude to do lesson plan first by selecting context, provide materials, prepare visual aids through how appropriately to use spoken language, written language in order to suit for students need and students can use their knowledge to communicate in the real society. [26] First, teacher should know the purpose of teaching, what student levels, what's student need are.

Counting noun phrases as single lexical items and including all possible reiterations, we find that sentence 22 is linked a maximum of 3 times to any other sentence. Thus, with a threshold of 5 links for a bond, sentence 22 is fully unbonded. Sentence 24, on the other hand, is bonded to sentences 23 and 25. While sentence 23 is bonded with the succeeding sentence, it is not bonded with preceding sentences and is therefore pre-unbonded. In contrast, sentence 25 bonds with the preceding sentence 24 but not with sentence 26 and so is post-unbonded.

Applying this analysis to the 8 students' essays, we can find two measures of cohesion of the texts. First, as a measure of overall cohesion throughout a text, we can look at the proportion of all possible pairs of sentences which are linked, as shown in Table 1. Second, we can examine the numbers and types of unbonded sentences in each text, as shown in Table 2. This will also allow us to identify points in the texts where cohesion may be problematic.

Table 1
Density of linkage in each text

In Table 1, higher densities of linkage indicate greater overall lexical cohesion in an text. Texts C and H have noticeably lower densities of linkage than the other texts, suggesting that there may be inadequate cohesion through these texts and that they could be considered as problematic.

Table 2

Frequencies of unbonded sentences

In Table 2, texts with higher numbers of fully unbonded sentences, such as texts B and G, may be more problematic in terms of cohesion. The locations of the unbonded sentences in the texts (of all types) may indicate the locations of cohesion problems and will need to be compared with the location of the tutors' comments.

3.2 Analysing propositional coherence: Topical structure analysis

Based on the work of the Prague school of linguistics and M. A. K. Halliday (e.g. 1967; 1970), topical structure analysis involves first dividing sentences into themes and rhemes, where the theme is "what the sentence is about" and the rheme is "what is said about [the theme]" (Connor, 1996, p. 81). The theme and rheme are often indicated syntactically, and in this study we will identify the theme as "clause initial elements up to and including the first ideational element" (Berber Sardinha, 1997, p. 69) with the rheme being the rest of the sentence.

The themes and rhemes of succeeding sentences are often related, since themes provide an organisation for the discourse with rhemes providing the message that pushes the communication forward (Daneš, 1974). These relations between succeeding themes and rhemes allow us to identify different types of theme-rheme progression, the next stage in conducting a topical structure analysis. The two most common types of progression are usually parallel progression where consecutive sentences have the same theme, and sequential progression where the rheme of one sentence becomes the theme of the next sentence (Connor and Farmer, 1990; Schneider and Connor, 1990). There are, however, a whole variety of potential types of progression, and in this study we took 19 different types into account (including rheme-rheme progression, extended parallel progression and hyponymic progression; see Peng, 1999). Where none of these types of progression were present, a coherence break (Wikborg, 1990) was identified between two sentences, and such breaks were considered as perhaps indicative of problematic coherence. Furthermore, in academic writing, sequential progression may be preferred (Fries, 1983; Rutherford, 1987), and thus texts with a relatively low proportion of sequential progression could be viewed as potentially problematic.

Having identified the progressions between sentences (it should be noted that where two independent clauses occur in the same sentence, they were counted as two separate units for analysing progressions), we can examine the frequencies of the different types of progression as shown in Table 3 and the relative frequencies of coherence breaks as shown in Table 4.

Table 3
Frequencies of types of progression

Given that texts with a low proportion of sequential progression, when compared to parallel progression, may be problematic, from Table 3 we can see that texts B and D could have coherence problems. The relatively high proportions of other types of progression, however, make it unclear whether this is really the case.

Table 4
Frequencies of coherence breaks

From Table 4, the relatively high percentages of coherence breaks in texts B and H mean that these texts may have problems of coherence. However, in addition to examining the number of coherence breaks, we will also need to look at their locations and this is considered below.

3.3 Analysing interactional coherence: Genre analysis

To investigate interactional coherence, a genre analysis of the functions in the texts was used. This involved identifying the moves and steps used in the texts. A move is "a text segment made up of a bundle of linguistic features ... which gave the segment a uniform orientation" (Nwogu, 1991, p. 114). Some moves can be subdivided into submoves or steps (Swales, 1990). Given that the essays did not fall into a clear genre which has already been the subject of analysis, we decided to use the moves and steps identified by Nwogu (1991) and Thompson (1994) as a basis for analysis where possible, with other potential categories of moves and steps created to fit the functions apparent in the texts.

Doing this, in the texts we identified 10 types of move, including announcing the topic, defining terminology and presenting the conclusion, and 4 types of step, including giving reasons, giving examples and referring to an earlier statement. While interesting, categorising the functions in the texts into moves and steps does not in itself allow us to identify problems of interactional coherence. In order to identify points in the texts where interactional coherence may be problematic, we assumed that pairs of consecutive moves and steps that occurred frequently through the texts were not a problem. Rather, those points where the consecutive moves or steps formed a pair which occurred significantly infrequently would indicate dispreferred pairs of moves or steps and therefore be considered potentially problematic. To identify these dispreferred pairs, expected rates of likely succession of pairs were generated for all possible pairs of moves and all possible pairs of steps based on the overall frequencies of the moves and steps. These expected rates were then compared against the observed rates of succession in the texts using chi-square. Where chi-square values for the moves or steps preceding or succeeding a given move or step were significant, the moves or steps which occurred at a markedly lower then expected frequency to form a pair with the given move or step would be identified as potentially problematic.

For example, if we examine the moves preceding the Defining Terminology move, we would expect the preceding moves to be proportional to their overall frequencies throughout the texts. We can then compare these expected frequencies against the observed frequencies of how often the various moves actually preceded the Defining Terminology move using chi-square. This gives us a chi-square value of 22.67, which is significant at a probability level of 0.01. Therefore, the moves preceding the Defining Terminology move do not occur in the proportions in which they occur throughout the texts. Examining the actual frequencies, we find that Announcing the Topic and Explaining Principles and Concepts occur with more frequency immediately before Defining Terminology moves than we might expect, and that Presenting the Conclusion and Applying Principles and Concepts in Practice moves occur with far less frequency than we might expect. Assuming that such low-frequency pairings are dispreferred, those points where either a Presenting the Conclusion move or an Applying Principles and Concepts in Practice move

immediately precedes a Defining Terminology move are considered a potential problem for interactional coherence.

Applying this analysis to the essays, we find that all of the texts include at least one infrequent pairing of steps and that texts A, B, C, F and G also include at least one infrequent pairing of moves. These characteristics of the texts, together with the locations of the infrequent pairings of moves and steps in the texts, will be compared with the tutors' comments.

3.4 Summary of the applicability of the three methods of analysis

In applying the methods of analysis to the students' essays, there were few problems in applying Hoey's (1991) lexical analysis and topical structure analysis. However, regarding genre analysis, the lack of generic models of academic essays meant that first, we had to create new types of move and second, we needed to assume that low-frequency pairings of moves are dispreferred and problematic. Both of these are potentially controvertible and thus require validation. Furthermore, from the analyses of cohesion and interactional coherence, the methods used perhaps identified too many points in the texts as being potentially problematic. Nearly half of all the sentences were identified as being unbonded in some way using Hoey's lexical analysis, and all texts included at least one infrequent pairing of steps. Thus, while it was possible to apply the three methods of analysis to the students' essays, it is uncertain whether such an approach is valid. In order to check the validity of the analyses, if we assume that the tutors' comments on the essays are prompted by problems in the texts, we can compare the results of the application of the three methods with the tutors' comments. Since the findings from the three analyses of types of cohesion produce data of two kinds (texts which can be considered problematic for each type of connectedness, and the locations of points in the texts where problems with connectedness occur), this comparison can be conducted both at the level of text and at those points in the texts which could be problematic. Before we conduct such a comparison, we need to examine the tutors' comments.

4 The tutors' comments

The findings from the three methods of analysing connectedness are theoretically based and do not examine how a reader may react to cohesion and coherence in texts. In this study, we are assuming that the tutors' comments on the texts are indicative of their reactions to what they read. Analysing the tutors' comments, therefore, may allow us to gain insights into how readers react to issues of connectedness in the texts.

The data in this study was collected naturalistically. The texts were written as part of a Masters level course and the two tutors marked and commented on the texts for the benefit of the students. The two tutors were Thai, but both had undertaken extensive postgraduate study in the UK and had an excellent command of English. They had taught the course cooperatively for several years, and they set the assignment to check the students' understanding of and ability to apply the theories covered in the course.

On completion, the students' essays were handed in to the tutors. One tutor first marked and commented on the texts, and then passed them on to the second tutor who checked the marks and added additional comments. The points stimulating comments on the texts were those points where the texts needed clarification, where further support or justification of arguments was needed, and which were simply wrong. Because of this, the comments were predominantly in-text comments written at specific points in the texts. We can classify the tutors' comments into comments on the local use of language such as grammar and comments at the discourse level on content and organisation (termed 'discourse comments'). Comments on content are identified either when the tutors ask for clarification or additional information (e.g. "How? Justify your point") or when they evaluate the correctness of the content (e.g. "Not only ESP, CLT as well"). Comments on organisation are identified either when the tutors question the location of the content in the text (e.g. "This should be explained in the ideas of sociolinguistics") or when they highlight the sequencing or repetition of the content (e.g. "When you explain things, keep one paragraph for one idea only so that you don't repeat the same idea over and over again"). On average, there were 39.75 comments per text. Most of these concerned linguistic accuracy, but there were 84 comments (or 10.50 per text on average) focusing on the organisation and content of the students' texts. These 84 comments are compared to the findings from the three analyses of connectedness.

Two main ways of identifying whether the texts are problematic in terms of the tutors' comments need to be investigated. First, with regard to connectedness, texts with higher proportions of discourse comments are likely to be more problematic. Second, we can examine the average number of words stimulating a tutor discourse comment. Texts in which fewer words lead to such comments could be considered problematic. Both of these approaches are shown in Table 5.

Table 5
Evaluations of texts based on tutors' comments

From Table 5, with low proportions of discourse comments and high average numbers of words stimulating discourse comments, it appears that texts A and E could be considered unproblematic. On the other hand, text H with a high proportion of discourse comments and a low number of words stimulating comments may be problematic.

5 Text-level comparisons of connectedness and tutors' comments

In this section, we will compare whether the texts are considered problematic or not with the tutors' comments.

From the three analyses of connectedness above, we found that:

- For cohesion, texts B, C, G and H could be problematic;
- For propositional coherence, texts B, D and H could be problematic;
- For interactional coherence, texts A, B, C, F and G could be problematic.

From the analysis of the tutors' comments, texts A and E appeared unproblematic, while text H could be problematic. These findings concerning the comments match the findings from the analyses of cohesion and propositional coherence, suggesting that the analyses of cohesion and propositional coherence could be consistent with the tutors' comments. The findings from the analysis of interactional coherence with text A identified as problematic and text H not identified as problematic, on the other hand, seems to stand in contrast to the tutors' comments.

Another way of checking for consistency between the findings concerning connectedness and the tutors' comments is to examine the relationships between, on the one hand, the two ways of evaluating the texts based on tutors' comments (proportions of discourse comments and number of words stimulating discourse comments) and, on the other, each of the three types of connectedness. To do this, each type of connectedness can be rated 1 or 0 depending on whether it is considered problematic for a given text, and then point biserial correlation can be used to compare these dichotomous values with percentages of discourse comments and average numbers of words stimulating a discourse comment. Table 6 shows such comparisons.

Table 6
Correlation coefficients comparing characteristics of texts based on tutors' comments and the three types of connectedness

From Table 6, we can see that cohesion has a positive significant relationship with the percentages of discourse comments and a weak negative relationships with the average numbers of words stimulating a discourse comment. Similarly, propositional coherence has non-significant relationships in the same directions. Both of these types of relationships follow the expectations set up earlier. For interactional coherence, on the other hand, there is no real relationship with the average numbers of words stimulating comments and, contrary to expectations, a negative non-significant relationship with the percentages of discourse comments. These findings suggest that, at least at the level of text, interactional coherence is not an issue underpinning tutors' comments.

6 Comment-level comparisons of connectedness and tutors' comments

While comparing the findings from the analyses of connectedness with the tutors' comments at the level of text provides some insights into the relationship between the two, it may be more productive to examine the actual comments themselves. There are two ways of doing this. First, we can examine the locations in the texts of the comments and compare these to the locations identified as potentially problematic in

the analyses. Second, where the two locations match, we can look at the content of the comments to see if it implies anything about the aspect of connectedness identified as problematic at that point.

Considering only comments which can be linked to a specific location in the texts, for all 8 texts there are 77 comments in total. Some of these comments match locations identified as potentially problematic. An example of some matches between comments and problematic points for assignment G is given in Table 7.

Table 7
Example of matches between comments and problematic points

Continuing the comparison for all texts, we find that the locations of tutors' comments match with at least one point considered problematic from the perspective of cohesion in all texts. However, coherence breaks match the locations of comments only in text H, and low-frequency pairs of moves match the locations of comments only in text G (although low-frequency pairs of steps also match in two other texts).

To find out the proportions of matches of locations of comments and problematic points for all texts, we need to calculate both the proportion of comments which match points identified as problematic by one analysis and the proportion of points identified as problematic by one analysis which match the locations of comments. These proportions are shown in Table 8.

Table 8
Proportions of matches of location between comments and problematic points

Generally, the proportions of matches between comments and problematic points in Table 8 are disappointingly low. While there is some evidence that problems of cohesion may stimulate tutors' comments, the low proportion of problematic points of cohesion matching comments shows that this is not the case for the vast majority of cohesion problems. For the two types of coherence, especially propositional coherence, it appears that coherence problems do not stimulate comments.

Turning next to the content of the comments, for those points where the comments match points identified as problematic from the analyses (discounting those comments where the content is not clear enough), we can examine the content of the comments to see if they reflect the aspect of connectedness which was identified as problematic.

Starting by looking at those points where cohesion is considered problematic, there are 16 points matching the locations of comments. 3 of these are fully unbonded, 8 are pre-unbonded, and 5 are post-unbonded. The comments at some of these points appear to indicate some problem with organisation, possibly cohesion. For example:

> "What?" (Text G; fully unbonded sentence)
>
> "The two areas that you mention also influence language teaching. How do the two areas above relate to the three areas you mention later. Are they not the same?" (Text F, pre-unbonded sentence)
>
> "What is this? An example?" (Text D, post-unbonded sentence)

However, others of the comments matching cohesion problems do not seem to concern cohesion. For example:

> "If an English teacher needs to teach that, he needs to teach the specialized content as well. Thus, is it possible?" (Text H, pre-unbonded sentence)

Overall, the content of 50% of the comments matching cohesion problems appears to be at least partly related to cohesion.

For propositional coherence, there are only 2 points at which coherence breaks match tutors' comments. These comments are:

> "How are these considered as 'register'?" (Text H)
>
> "This is not the content of the specialized fields." (Text H)

Although it is impossible to draw any conclusions from such limited data, both of these comments appear to concern the appropriacy, and possibly the propositional coherence, of the content of the essay.

Regarding interactional coherence, again there is a scarcity of matches with only 4 of the points considered problematic matching comments. Only one of these comments (25% of these points) appears to be relevant to interactional coherence:

> "You should mention what teachers should think about later. Since you mention components of speech events, you should try to clarify each one first. Then, how a teacher should apply it comes later." (Text G)

Other matching comments, however, seem to concern content more than functions. For example:

> "This is not the same as learners' needs" (Text B)

Generally, the findings comparing connectedness and the tutors' comments at the level of comment are disappointing. The proportions of matches between problematic points and comments are low, and this paucity of data means that it is difficult to draw conclusions concerning the content of the comments.

7 Discussion

The main findings from this study can be summarised as follows:

- Concerning cohesion, problematic texts have a higher proportion of discourse comments than non-problematic texts, but do not have noticeably more frequent comments.
- Relationships between, on the one hand, whether a text is problematic in terms of propositional coherence and, on the other, proportion of discourse comments and frequency of comments are non-significant.
- Regarding interactional coherence, the relationships are also non-significant, but the weak relationship with proportion of discourse comments is in the direction opposite to our expectations.
- There are no real relationships between the individual comments and the points identified as problematic in terms of connectedness.

Overall, therefore, the results of this study are somewhat disappointing and do not provide validation for applying the methods of analysing connectedness to the genre of academic assignments written by non-native speakers.

There are several possible explanations for the general lack of relationships between tutors' comments and connectedness. First, the constructs of connectedness, coherence and cohesion that we are using could be inappropriate. Second, the methods of

analysing connectedness may not be applicable. Third, the assumptions underpinning the research may be open to question. We will examine each of these possible explanations in more detail.

Concerning the constructs of connectedness, coherence and cohesion used in this study, there are several potentially problematic issues. First, we assume that connectedness is the sum of cohesion, propositional coherence and interactional coherence, where it may be more than the sum of its parts. Indeed, the interactions between these three aspects of connectedness may be crucial, but they are treated separately in this study. Second, for cohesion, we focus on lexical cohesion and ignore conjunctions which may be of particular importance for the type of expository writing analysed. Third, for both types of coherence, we assume that they are identifiable solely from the texts, whereas coherence may be better conceived of as existing in the interactions between the reader and the text. Fourth, interactional coherence may not be an important issue in written language, especially in academic writing (Kern, 2000). It is therefore unclear whether the constructs of connectedness, cohesion and coherence used in this study play a significant role in how readers process the texts.

Even if the constructs analysed are appropriate, the methods of analysis may not be valid. Although we found that it is possible to apply the methods to the texts, there are some potential problems with the results of such applications. Using Hoey's (1991) lexical analysis, we found that nearly half of all the sentences were unbonded in some way. If unbonded sentences indicate problems with cohesion which stimulate tutors' comments, we would then expect the tutors to comment on every other sentence in the assignments, which is unrealistic.

For topical structure analysis, although a previous study has shown that findings from this method correlate well with raters' scores in the TOEFL Test of Written English (Schneider and Connor, 1990), the method has been criticised. In a study aiming to identify topics and text segmentation, Watson Todd (2003) compared six methods of analysis, including topical structure analysis, with an unprincipled control analysis and found that, unlike the other five methods, there was little difference between topical structure analysis and the control analysis. The use of topical structure analysis to analyse propositional coherence is therefore potentially suspect.

The use of genre analysis to analyse interactional coherence is perhaps the most problematic of the three methods of analysis used and may be the reason for the contrary findings concerning interactional coherence. A first concern is whether genre analysis really analyses interactional coherence, since the moves identified in a genre analysis may not be the same as the functions underlying interactional coherence. A second issue is whether a genre approach is applicable to texts which may not have a clear generic structure, as appears to be the case with the texts analysed in this study (cf. the genre analysis of literature reviews conducted by Shaw, 1995). Furthermore, the use of dispreferred sequences of moves to identify problematic points in the discourse may not be valid. Dispreferred sequences can be regarded as marked (Levinson, 1983), but do not necessarily indicate a coherence problem in the discourse.

Potentially the most important reason for the disappointing results in this study, however, concerns the assumptions underpinning the research, namely, that discourse-level features prompt comments on organisation and content and that these comments are written next to the features prompting them. It may be the case, however, that, while a certain feature in the text prompts a comment, the comment may be written next to another sentence near the one containing the feature prompting the comment. If this were the case, it could explain the disappointing comment-level findings. More seriously for our analysis, the markers may be more concerned with characteristics of the texts other than connectedness. For the texts analysed in this study, the markers could be focusing on, say, the actual content and the form of argumentation more than on the connectedness. Although these three characteristics may be inter-related, our analysis focusing only on connectedness might not match the markers' concerns.

Another key but questionable assumption is that the comments on the essays are an indication of the quality of the texts. While tutors may add corrective comments at problematic points in texts, they may also add comments promoting further reflection at exemplary points. Therefore, the relationship between comments and quality of texts is unclear. Typically, quality is indicated by grades. Taking the grades for the eight essays and converting them into numbers following the standard practice for generating grade point averages allows us to see if the comments do relate to the

quality measurements assigned by the tutors through grades. Comparing the comments and the grades using the correlation coefficient, we find that there are no significant relationships both between percentage of discourse comments and grades (r = 0.09) and between average number of words stimulating a comment and grades (r = 0.43). It should also be noted that, unlike Liu and Braine (2005) who found a relationship between cohesion and writing quality, no significant relationships were found between the results of the analyses and the grades for the assignment, although a fairly strong non-significant relationship was found between the number of fully unbonded sentences and grades (r = -0.57). It would therefore appear that neither the comments made by tutors nor the results of the analyses of cohesion and coherence are related to the quality of the students' work. While the lack of any relationship between quality of work and analyses of connectedness might be expected given the problems already discussed in this section, the lack of relationship between the tutors' comments and the grades is more surprising, and suggests that more research is needed into the nature of comments given on academic essays and the processes tutors go through in giving comments.

While it is not possible to identify which of the possible explanations for the findings are relevant to this study, they do have some interesting implications. The explanations concerning the constructs of connectedness and methods of analysis have implications for researchers, and the explanations concerning comments have implications for teachers.

If the constructs of and methods of analysing connectedness used in this study are not valid, researchers conducting research into cohesion and coherence may need to take a critical approach to the focuses and methods used in their research. For instance, in an article on teaching coherence, Lee (2002) provides a clear and detailed discussion of the construct of coherence from several different perspectives, but accepts topical structure analysis as an incontrovertible indicator of coherence. The findings from this study suggest that such an uncritical acceptance of topical structure analysis may not be appropriate.

If, on the other hand, the tutors are not considering connectedness when commenting on the essays, there may be a need to raise awareness of the potentially important roles

that cohesion and coherence play in writing. Lee's (2002) study of teaching coherence to students may provide a model for such awareness raising. Research has shown that specific comments related to points in a text are more useful than general comments (e.g. Low Pik Ching, 1991; Watson Todd et al., 2001), and a greater awareness of the usefulness and manifestations of connectedness may allow tutors to give specific comments on cohesion and coherence for the benefit of students' writing.

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Table 1

Density of linkage in each text

Text	Number of sentences	Total possible pairs of sentences (A)	Total number of linked pairs of sentences (B)	Density of linkage (B/A)
A	92	4186	2741	0.65
B	43	903	651	0.72
C	102	5151	1889	0.37
D	75	2775	1539	0.55
E	62	1891	1112	0.59
F	69	2346	1374	0.59
G	91	4095	2448	0.60
H	94	4371	1706	0.39

Table 2

Frequencies of unbonded sentences

Text	No. of sentences	% of sentences which are fully unbonded	% of sentences which are pre-unbonded	% of sentences which are post-unbonded	% of sentences for all types of unbondedness
A	92	14.13	8.70	8.70	31.52
B	43	23.26	11.63	18.60	53.49
C	102	16.67	19.61	8.82	45.10
D	75	14.67	10.67	13.33	38.67
E	62	16.13	16.13	16.13	48.39
F	69	14.49	15.94	11.59	42.03
G	91	28.57	13.19	3.30	45.05
H	94	11.70	21.28	9.57	42.55
All	628	17.20	14.97	10.35	42.52

Table 3

Frequencies of types of progression

Text	Sequential progression	Parallel progression	Other progression	Coherence break	Total
A	27	25	37	5	94
B	11	21	18	4	54
C	29	27	52	5	113
D	15	32	25	4	76
E	23	19	29	2	73
F	23	23	37	3	86
G	23	27	39	5	94
H	32	23	45	8	108
Total	183	197	282	36	698
Percentage	26.22	28.22	40.40	5.16	100.00

Table 4

Frequencies of coherence breaks

Text	Total number of progressions	Number of coherence breaks	Percentage of coherence breaks
A	94	5	5.32
B	54	4	7.41
C	113	5	4.42
D	76	4	5.26
E	73	2	2.74
F	86	3	3.49
G	94	5	5.32
H	108	8	7.41

Table 5

Evaluations of texts based on tutors' comments

Text	Total number of comments	Discourse comments	Percentage of discourse comments	Number of words	Average number of words stimulating a discourse comment
A	72	8	11.11	2253	281.63
B	21	7	33.33	1157	165.29
C	18	6	33.33	2141	356.83
D	38	13	34.21	1588	122.15
E	17	3	17.65	1337	445.67
F	77	15	19.48	1683	112.20
G	35	11	31.43	1479	134.45
H	40	21	52.50	2495	118.81
Average	39.75	10.50	29.13	1766.63	217.13

Table 6

Correlation coefficients comparing characteristics of texts based on tutors' comments and the three types of connectedness

	Percentage of discourse comments		Average number of words stimulating a discourse comment	
	r_{pbi}	p-value	r_{pbi}	p-value
Cohesion	0.66	$p<0.05$	-0.18	not significant
Propositional coherence	0.34	not significant	-0.53	not significant
Interactional coherence	-0.34	not significant	-0.07	not significant

Table 7

Example of matches between comments and problematic points

Location of comment (sentence number)	Type of connectedness identified as problematic	Nature of problem
17	Interactional coherence	Low-frequency pair of moves
20	Interactional coherence	Low-frequency pair of moves
32	Interactional coherence	Low-frequency pair of moves
48	-	
51	Cohesion	Fully unbonded sentence
61	-	
67	-	
69	Cohesion	Fully unbonded sentence
76	Cohesion	Post-unbonded sentence
87	Cohesion	Post-unbonded sentence

Table 8

Proportions of matches of location between comments and problematic points

Type of connectedness	Percentage of comments matching problematic points	Percentage of problematic points matching comments
Cohesion	26.19	8.24
Propositional coherence	2.38	5.56
Interactional coherence	5.95	33.33