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The introduction to the research article from a discourse perspective

Thomas Miller

- 1 This paper will try to show that the very constraints imposed by the editing process allow the reader to move efficiently through a text. Constraints for the writer provide freedom for the reader. In fact, perhaps we need to rethink the sharp distinction we hold between writer and reader. Texts are read countless times before they are published. The writers themselves re-read what they have written to check for clarity, correctness and perspective. They show articles to colleagues for suggestions before submitting them for publication. The editors of the journals in turn suggest changes which push the substance and form of the article closer to the expectations and background knowledge of the discourse community which reads the journal. All of these changes, from writer massaging material while switching from reader to writer and back again, to the editor, who has a clearer view of the expectations of the reader are designed to make the article more reader sensitive.¹ These constraints allow us to recognize genres. Newspaper articles have headlines and subheadings, menus have categories of food with accompanying lists while research articles have introductions, descriptions of method, results and discussions.
- 2 These constraints allow physicists, for example, to read articles in physics journals much the same way that we read newspapers (Bazerman 1985). Physicists 'window shop' for potential problems to explore. They read selectively, skimming the abstract, the headings, seeding the news as they jump back and forth or skip sections depending on their interests or as one section raises questions about earlier ones (Bazerman 1985: 11). They are able to do this because the constraints imposed by the rewriting and editing process mentioned above ensure the certain information will be found in certain parts of the passage.
- 3 In analyzing how scientists succeed in reading in the manner described by Bazerman, Atkinson (1991) described the conventions as guideposts through a text. Macro-rhetorical-spatial conventions such as introductions, methods and results sections, titles, headlines, or chapter breaks divide the information for the reader and can be considered

as the “design coherence or architectural structure of the text” (Atkinson 1991: 65). The reader realizes that the physical break and the new heading mean a different type of information will be introduced. The architecture of the text works in a similar manner to various rooms in a house each of which have different purposes.

- 4 Within each section on the other hand, the purpose is to integrate material rather than separate it like the beams of a house. Sections may be organized by ‘top-level organization principles’ such as the problem solution structure or comparative and contrast. Within each top-level organization principle the author uses phrasal-clausal material to define the structure in the manner or bricks and mortar.
- 5 This paper will focus on the research article, which is one of the genres that students will face most frequently in their studies and which professionals must master to become members of the discourse community. We will focus on one of the macro-structural-spacial sections —the introduction— not only because this has been the section of the research article which has received the most attention in the literature but because an understanding of the working of the introduction can set the scene for the reader and allow the writer to communicate more effectively. If the reader understands how the introduction works he or she will access the appropriate schema and look for relevant information to interpret the text.
- 6 We will assume that one of the best ways of demonstrating understanding of a text is an ability to form a working summary. Therefore if we can find a theory which provides a useful summary, we may have a sharper awareness of how information in a text is packaged and how to help our students identify that information. We will begin with Swales’ analytical approach described in *Genre Analysis* (1990), which provides a schema for introductions. We will then see how a summary derived from this approach corresponds to one produced by Rhetorical Structure Theory (1988), which focuses on the relations between propositions. Finally we look at a theory which produces summaries based on collocation introduced in Hoey’s (1992) bonding theory. The fact that the three theories converge suggests how different levels of text structure contribute to signalling meaning.

Swales’ Introduction Analysis

- 7 Swales has identified three moves and steps for each move within the introduction of the scientific research article (see Table 1).

Table 1. Swales’ moves and steps

Move 1 Establishing a territory Step 1 Claiming centrality and/or Step 2 Making topic generalizations and/or Step 3 Reviewing items of previous research	Declining rhetorical effort
--	-----------------------------

Move 2 Establishing a niche Step 1A Counter-claiming or Step 1b Indicating a gap or Step 1C Question-raising or Step 1D Continuing a tradition	Weakening knowledge claims
Move 3 Occupying the niche Step 1A Outlining purposes or Step 1B Announcing present research Step 2 Announcing principal findings Step 3 Indicating RA structure	Increasing explicitness

Swales 1990: 141

- 8 The introduction becomes more explicit as it progresses. In move 1 the author establishes territory, defining the subject to be dealt with. One can boldly assert the centrality of the subject at hand or merely review previous research and by implication delimit the topic. However, if much research has already been conducted on a particular topic, one has to justify the present study. If much research has already been devoted to one topic, how can one justify yet another paper? One establishes a niche by showing the limitations of previous studies. One thus creates research space by showing how the present study will fill a gap in the previous knowledge. There is a scale of strength of claim. One can make a very strong claim by contradicting previous research or by indicating that past research has not covered a particular issue. One could make a much weaker claim by merely continuing a tradition. In the final move the writer describes how he or she will occupy the niche by outlining the purposes of the paper or indicating the paper's structure. If all steps are included, there is a strong tendency for them to be in the order described above.
- 9 Although Swales' analysis was based on scientific introductions, one can see that it works well for many humanities introductions as well. Using Swales' approach we will analyze an introduction from an article from *the Journal of Second Language Writing* (see table 2 and appendix 1).

Table 2

Move 1 Establishing territory Step 2 Generalization(s)	1. Many ESL learners come to the learning task already literate in their first language.
Step 3 Review of previous research	3. Much has been written about the difference between the forms and the functions of first and second language literacy.

Step 1 Generalization(s)	4. These studies focus on products, on what learners already know about writing/reading that may affect their second language acquisition efforts.
Move 2 Establishing a niche Step 1B Indicating a Gap	5. However, little attention has been paid to the process of literacy acquisition, to what second language learners have learned about LEARNING to read and write in their L1 that may affect how they approach literacy acquisition in ESL writing classrooms.
Move 3 Occupying the Niche Step 1B Announcing present research	6. In this paper I will examine L1 writing development in two contexts: Japanese and Chinese primary and secondary educational settings.
Step 3 Indicating RA Structure	8. Using this perspective, I will examine three aspects of literacy acquisition that affect the ways in which Japanese and Chinese students learn to read and write:

- 10 The analysis above focuses on the writer's strategies vis-a-vis the discourse community. In the introduction analyzed above, Ms. Carson suggests the importance of the topic to be dealt with by emphasizing the number of students potentially affected by the results of the study (1). In the review of the literature (3) the writer not only shows that she has done her homework and can therefore recognize a significant contribution to the literature but once again emphasizes the quantity of research conducted on the topic at hand. With the second generalization (4), which is actually a criticism, the writer creates expectations that a gap in the research will be introduced. The gap (5) begins with 'however,' which is a fairly strong knowledge claim. The introduction becomes more explicit as sentence 6 indicates in general what will be studied and where while sentence 8 more specifically states exactly what will be studied.²
- 11 Since these moves and steps tend to reoccur in the hundreds of articles Swales has analyzed, writers, editors and ultimately readers must be using them as 'signposts' throughout the text. One can form a workable summary of introductions by including the moves and steps mentioned above. Thus sentences 1, 3, 4, 5, 6 and 8 form a coherent summary. If we add a 4th move justification, then sentences 9 and 12 would be included. As we will see in the next section, the summary corresponds to summaries created by different approaches.

Rhetorical Structure Theory

- 12 In Rhetorical Structure Theory, Mann and Thompson focus on the relations between clauses. Using our building metaphor above, these relations could be considered the beams of the text. According to Mann and Thompson, as much meaning is contained in the relationships between clauses as in the clauses themselves. If one recognizes the basic relations between clauses, one can construct many inferences. For example, if one recognizes that there is a problem/solution relationship between the sentences below, one can construct many inferences. Each inference depends on the inference above it:

I'm hungry. Let's go to the Fuji Gardens.

1. Our going to Fuji Gardens is a (partial) solution to my problem of being hungry.

2. I cannot eat here.
 3. I want to be somewhere where I can eat.
 4. I want to go somewhere where I can eat.
 5. The Fuji Gardens is an eating establishment.
 6. The Fuji Gardens is open.
 7. The Fuji Gardens serves Japanese food.
 8. I like Japanese food.
 9. I do not mind eating raw fish.
 10. I am partial to Japanese beer.
 11. I can use chopsticks. (Mann Thompson 1986: 68)
- 13 One can infer that the speaker cannot eat here (2) because, otherwise, there would be no motivation for going to Fuji Gardens as a solution to the problem of being hungry (1). If one cannot eat here (3), then one would logically want to go where one could eat (4). If one wants to eat, then the Fuji Gardens must be an eating establishment (5). However, there would be no logical reason to suggest going there if it was not open (6).
- 14 Mann and Thompson list 22 basic relations upon which inferences such as those in 1–11 above can be made (see table 3).

Table 3

Subject Matter	Presentational
Elaboration	
Circumstance	
Solutionhood	
Background (increases ability)	
Volitional Cause	Motivation (increases desire)
Volitional Result	Antithesis (increases positive regard)
Non-Volit.Cause	Antithesis (increases positive regard)
Non-Volit.Result Purpose	Enablement (increases ability)
Condition	Evidence (increases belief)
Otherwise	Justify (increases acceptance)
Interpretation	Concession (increases positive regard)
Evaluation	
Restatement	
Summary	
Sequence	
Contrast	

Mann Thompson 1988: 250

- 15 It is not only the relationships between the adjacent sentences which help create the meaning of the text but also that between larger blocks. These blocks may in turn have relations with sentences higher in the structure. Let us examine the introduction to highlight the relations between clauses:

Table 4

		solutionhood							
1-5				6-12					
concession				elaboration		justify			
1-4		5-5a		6				7-8a	
		restatement						9-12	
		5 5a							
background		evaluation		background				concession	
1-2a		3		4		7-8		8a	
								9-11a	
								12	
		elaboration		justify		non-volitional			
						cause			
1		2-2a		7-7a		8		9-11	
								11a	
circumstance				justify				elaboration	
elaboration									
2		2a		7		7a		9	
								10	
								11	

- 16 The overall relationship according to this analysis is of problem/solution. Clauses 1-5 indicate a gap in previous research that the present paper will try to fill. Clauses 1-4 depend on clause 5, which is the key sentence in the problem portion of the text (nucleus according to Mann and Thompson). One could re-phrase the material as a concession: Although much research has been conducted, little attention has been paid... Clauses 1-2a provide background to clause 3, which introduces relevant research, while clause 4 evaluates the research. Clauses 2 and 2a give additional information about the students introduced in clause 1. Clause 2 provides the circumstance within which one can interpret clause 2a. As can be seen, there is a hierarchy of relationships, which contribute to the meaning of the text as a whole.
- 17 One can produce a workable summary by including only those clauses which have several satellites. If one includes only clauses which have two or more dependent attachments one has the following 1, 3, 5, 6, 8, 9, 11a, 12. Notice that up to sentence 9, one has almost the identical summary as in Swales' analysis. One could object however, that since we are familiar with Swales approach, we will read the introduction in the same manner and thus form an identical summary. In order to provide validation, we must find a theory with a more objective approach to forming summaries.

Bonding Theory

- 18 Bonding theory focuses on semantic relations to understand coherence. In our architecture metaphor, bonding theory looks at the bricks of our structure to see what the surface, i.e. the words, tells us about the relations of coherence in the text. Links are created between sentences if they share synonyms, or have a synonyms/antonyms relationship, or have the same basic word form (write - writer), etc. Sentences with three or more links are bonded. Hoey has found that bonded sentences are coherent even if separated by hundreds of pages. In other words, a reader will usually be able to construct a coherent text out of any two sentences from the same or even different texts if they have at least three links. The first step is to list the links between sentences (see table 5).

Table 5

1.	many	ESL learners language	literate first		task		
2.	much	learning language	writing native	English	varying		
3.		students language	literacy first, L1	difference		effort	material
4.		learners language	writing second		products	reading affect	acquisition studies
5.	little	ESL learners language	literacy second		process	read affect	acquisition classroom
6.			writing L1				paper
7.			writing		reading		acquisition
8.		students	literacy		read	affect	acquisition
9.			literacy				
10.				differences			
11.				English differ			literature
12.	ESL learn		write				classroom

5.	Japanese	Chinese	educational	I	paper examine	development	context
7.					viewed	development contexts	practices
8.	Japanese	Chinese	schooling	I	examine	considerations	context
9.	Japanese	China	educational	I			describe both
10.							
11.		China	educational	I		describe	practices
12.	Japanese	Chinese	pedagogical		considerations		two

- 19 There are four links between sentence 1 and sentence 2 (**learning**, **language**, **first** - which is a synonym in this passage with **native** and **literature** - see appendix 2). One can count the number of links and put it in a chart form (see chart 1).

Chart 1

	1									
2	4	2								
3	5	3	3							
4	3	4	4	4						
5	4	5	7	8	5					
6	2	3	3	3	3	6				
7	1	1	2	3	4	3	7			
8	2	2	3	5	6	7	6	8		
9	1	0	1	0	1	5	1	5	9	
10	0	0	1	0	0	0	0	0	10	
11	1	1	1	2	2	3	0	5	5	0
12	2	3	4	3	4	6	2	5	3	0

- 20 Following sentence 1 down, one can see that there are four links between 1 and 2 as mentioned earlier, five links between sentence 1 and 3 and so on.

- 21 Hoey compares sentences to oeuvres. A work that is very important will be quoted by other authors just as a sentence that is important in the text will have links to many other sentences. One can create a workable summary by choosing an arbitrary number of links of three and over and combining those sentences. If one looks at links of five or more for example, one can focus on areas of heavy collocation and thus by implication great coherence. The sentences which have five or more links to the most sentences are 8 and 5. Sentence eight has five or more links with 5, 6, 7, 9, 11, 12. Sentence five has five or more links with 2, 3, 4, and 8. By combining these linked sentences, one has a summary very similar to that produced by Swan's and Mann and Thompson's approaches:

Table 6

Swales	1 3 4 5 6 8 9 12 ³
Mann & Thompson	1 3 5 6 8 9 11a 12
Hoey (sent 5)	2 3 4 5 8
(sent 8)	5 6 7 8 9 11 12

Conclusion

- 22 As can be seen from the analyses above, different approaches arrive at similar results. Swales' theory corresponds closest to traditional schema theory in which one searches for the prototypal script to interpret a text. Understanding occurs when the reader identifies a real-world frame in which to interpret the text. If students can be taught to identify the gap for example, they will be well on their way to Mann and Thompson's theory focuses on the relations between propositions. The hierarchy of relations contributes as much to the meaning of the text as the words themselves. Finally, Hoey's bonding theory shows us how the individual building blocks contribute to the organization of the text. Perhaps the reader subconsciously takes all of these relationships into account when comprehending a text. If we as reading teachers can become more aware of the intertwined relationships that create textuality, we may be better able to locate sources of reader incomprehension and identify appropriate remedies.

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APPENDIXES

Appendix 1

APPENDIX 2		
1 learning-learning language-language		
2 first-native literature-writing		
many-much learners-students languages-languages	2 learners-students language-language write-written native-first	
3 literate-literacy first-first write-written		
learners-learners first-second task-effort language-language literate-writing	learning-learners language-language native-second writing-writing	3 students-learners language-language second-second literacy-writing
1 many-little learning-learning	2 learners-learners language-language native-second writing-writing	3 such-little students-learners language-language second-second literacy-writing
5 literate-literacy first-second ESL-ESL	writing-writing	literacy-writing
6 literate-writing	writing-writing	literacy-literacy
7		
8 learners-student literate-literacy	2 learning-students writing-literacy	3 student-students literacy-literacy
9 literate-literacy		literacy-literacy
10	varying-differences	difference-difference
11	English-English learning-differ	difference-difference material-literature
ESL-ESL 12 learners-learn literate-write	learning-learners writing-write	students-learn literacy-write

Appendix 2

APPENDIX 2		
1 learning-learning language-language flow-effect language-writing		
2 learning-learning language-language flow-effect language-writing	3 learning-learning language-language writing-writing writing-writing	4 learning-learning language-language writing-writing writing-writing
5 learning-learning language-language writing-writing writing-writing	6 learning-learning language-language writing-writing writing-writing	7 learning-learning language-language writing-writing writing-writing
8 learning-learning language-language writing-writing writing-writing	9 learning-learning language-language writing-writing writing-writing	10 learning-learning language-language writing-writing writing-writing
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56 learning-learning language-language writing-writing writing-writing	57 learning-learning language-language writing-writing writing-writing	58 learning-learning language-language writing-writing writing-writing
59 learning-learning language-language writing-writing writing-writing	60 learning-learning language-language writing-writing writing-writing	61 learning-learning language-language writing-writing writing-writing
62 learning-learning language-language writing-writing writing-writing	63 learning-learning language-language writing-writing writing-writing	64 learning-learning language-language writing-writing writing-writing
65 learning-learning language-language writing-writing writing-writing	66 learning-learning language-language writing-writing writing-writing	67 learning-learning language-language writing-writing writing-writing
68 learning-learning language-language writing-writing writing-writing	69 learning-learning language-language writing-writing writing-writing	70 learning-learning language-language writing-writing writing-writing
71 learning-learning language-language writing-writing writing-writing	72 learning-learning language-language writing-writing writing-writing	73 learning-learning language-language writing-writing writing-writing
74 learning-learning language-language writing-writing writing-writing	75 learning-learning language-language writing-writing writing-writing	76 learning-learning language-language writing-writing writing-writing
77 learning-learning language-language writing-writing writing-writing	78 learning-learning language-language writing-writing writing-writing	79 learning-learning language-language writing-writing writing-writing
80 learning-learning language-language writing-writing writing-writing	81 learning-learning language-language writing-writing writing-writing	82 learning-learning language-language writing-writing writing-writing
83 learning-learning language-language writing-writing writing-writing	84 learning-learning language-language writing-writing writing-writing	85 learning-learning language-language writing-writing writing-writing
86 learning-learning language-language writing-writing writing-writing	87 learning-learning language-language writing-writing writing-writing	88 learning-learning language-language writing-writing writing-writing
89 learning-learning language-language writing-writing writing-writing	90 learning-learning language-language writing-writing writing-writing	91 learning-learning language-language writing-writing writing-writing
92 learning-learning language-language writing-writing writing-writing	93 learning-learning language-language writing-writing writing-writing	94 learning-learning language-language writing-writing writing-writing
95 learning-learning language-language writing-writing writing-writing	96 learning-learning language-language writing-writing writing-writing	97 learning-learning language-language writing-writing writing-writing
98 learning-learning language-language writing-writing writing-writing	99 learning-learning language-language writing-writing writing-writing	100 learning-learning language-language writing-writing writing-writing

NOTES

1. In fact Hinds (1987) labels some cultures as writer responsible and others as reader responsible. In the U.S. for example, it is the writers' task to shape the text in a way to avoid misunderstanding. In cultures such as Japan, on the other hand, it is the reader's responsibility to figure out the writer's intent.
2. One could also argue for a Move 4 - Justify, which is often found in human sciences. Thus sentence 16 justifies the whole research in terms of its 'real world' benefits.
3. These last two would not be included in Swales' analysis, which does not have a justification move.

ABSTRACTS

This paper will analyse an introduction to a research article using three approaches to discourse analysis: Swales' (1990) Genre Analysis, Hoey's (1991) bonding theory and Mann and Thompson's (1986) rhetorical structure theory. Swales looks for writer strategies; Hoey focuses on collocation, while Mann and Thompson look for relations among propositions. However, all three produce similar summaries although focusing on different aspects of textuality. Pedagogical applications of the analysis will be discussed.

Cette communication a pour but d'analyser une introduction à un article de recherche en utilisant trois approches à l'analyse du discours : l'analyse de genre de Swales (1990), la théorie des mots de Hoey (1991) et la théorie de la structure rhétorique de Mann et Thomson (1986). Swales fait des recherches sur les stratégies de l'écrivain ; Hoey se centre sur la collocation, tandis que Mann et Thompson cherchent des relations parmi les propositions. Cependant, tous les trois produisent des résumés similaires bien qu'étudiant différents aspects de la textualité. Les applications pédagogiques de l'analyse sont discutées.

INDEX

Mots-clés: discours, genre, introduction

Keywords: discourse, genre, introduction

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