BRADDOCK REVISITED: THE FREQUENCY AND PLACEMENT OF TOPIC SENTENCES IN ACADEMIC WRITING

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Abstract

It has been more than thirty years since Richard Braddock published the notable article in which he examined the manner that professional writers utilize topic sentences. He found in his corpus that expository paragraphs seldom began with topic sentences. Consequently, Braddock (1974) admonished teachers to stop instructing their students that most professional writers begin their paragraphs with topic sentences. The purpose of this study is to replicate Braddock's study using a corpus made up of articles selected from a particular area of written discourse, American history. Braddock's model, with a few exceptions, is used in the evaluation of this material. Braddock's conclusion, that only 13% of expository paragraphs begin with a topic sentence, has been widely cited to support the notion that teachers need to reassess the manner in which they teach reading and writing skills. Results of this study indicate that, in this corpus, a major topic sentence is at the initial position of the respective discourse block unit in approximately two-thirds of the cases. Thus, certain conclusions which have been drawn from Braddock's study need to be re-considered.

Introduction

The idea that writers begin each paragraph with a topic sentence is an old one. The first systematic description of paragraph theory was put forward by Alexander Bain in 1866. The third of Bain's six rules called for a statement of topic in the initial sentence of the paragraph. Later scholars noted that the topic sentence could appear in another part of the paragraph or even be implied (Rogers, 1965). Furthermore, in his notable study, Braddock (1974) found that only 13% of the expository paragraphs in his study began with a topic sentence. Braddock's study has

been widely cited to support the view that reading and writing instruction needs to be modified to account for this fact. For example, as Donlan (1980) noted, most students have been taught that the topic sentence should be at the beginning of a paragraph. Moreover, he found that most students expected to find the main idea at the beginning of the paragraph, and when the students did not find it there, they were unlikely to find the main idea at all. The obvious implication to be drawn from the reported findings of these studies is that a gap exists between what students are taught and what actually exists in reality. If students are taught to look for topic sentences at the beginning of paragraphs, and topic sentences seldom occur there, then it is no surprise that students might tend to have reading difficulties (and, for that matter, writing difficulties as well).

In a modified replication of Braddock's study, Baumann and Serra (1984), using a corpus composed of children's social studies texts, essentially confirmed Braddock's findings. Only 27% of paragraphs were found to have begun with an explicit main idea.

In a later study, however, Popken (1987) called into question Braddock's conclusions. He pointed out that Braddock's homogeneous corpus had been widely over-generalized to be indicative of all types of academic writing. In response, Popken conducted a study, which he viewed as being corrective to Braddock's study, on the role of topic sentences in written discourse. The corpus of his study was divided into seven major discourse disciplines: literature, history, sociology, psychology, engineering, physics, and biochemistry. He identified the problem inherent in using the paragraph as the discourse unit to be studied due to its varying nature. For instance, when short, paragraphs do not always have a topic idea, and the number of short paragraphs that a particular article contains is determined by the style of the writer. To summarize Popken's key point, a topic idea which is introduced in one paragraph can clearly have influence over the paragraph (or paragraphs) which follow. Results of the Popken study

indicate that the vast majority of paragraphs (78% across disciplines) are directly influenced by either a major or minor topic sentence.

The purpose of this study is to determine whether assertions made in response to Braddock's study, that the "traditional" topic sentence seldom occurs in professional academic writing, is indeed the case, or whether Popken's call for a reassessment of Braddock's conclusions is in order.

Methods

This present study is an attempt to replicate Braddock's (1974) study in which the analysis and frequency of topic sentences in academic writing was examined. For the most part Braddock's methods are used, although some modifications have been made.

Braddock segmented each of his essays into T-units. The term T-unit (Hunt, 1965) was initially defined as the "minimal terminable unit." Specifically, Hunt's T-unit is, "…one main clause expanded at any of many different points by structure that are modifiers…Short main clauses may be expanded by incorporating into them…subordinate clauses…" (p. 141). Braddock slightly modified Hunt's definition of the T-unit. Consider Braddock's (1974) example, broken down into clauses: "The depression destroyed the coalfield's prosperity, / but the Second World War revived it, / and for a few years the boom returned / and the miner was again a useful and honored citizen (p. 290)." Braddock designated clauses three and four to be one T-unit since the phrase "for a few years" was judged to apply to both clauses. Thus, according to Braddock, this example is composed of three T-units. In addition, Braddock did not consider subordinate clauses to be separate T-units. In an attempt to reduce subjectivity, this study defines a T-unit in the following manner:

(1) Each independent clause is a T-unit. The following example is composed of two T-units.

The deep snowfall exposed us to constant danger, / and we had to be very careful not to lose our way in the forest.

(2) An adverbial clause is a T-unit. Example two is composed of two T-units.

Although it rained all day, / the football game went on as scheduled.

(3) Relative clauses are not considered to be T-units due to their adjectival nature.

This example is composed of only one T-unit.

I bought the new car which was advertised on TV.

(4) Complementary noun clauses which follow reported speech verbs (say, think, imagine, etc.) are not considered to be separated T-units. The following example is composed of one T-unit.

Our teacher strongly demanded that there be no whispering during the exam.

(5) T-units may be embedded. Example five, which contains a conditional clause, is composed of two T-units.

The last thing you should do {if you want to stay healthy}is to go outside in this inclement weather.

(6) Very short direct quotes which are not complete sentences are not considered to be T-units. This example contains no T-units.

John! John! Run away! Run away!

Following these guidelines made the process of breaking the text into T-units a reasonably consistent, non-subjective one.

A second modification of Braddock's study involved the procedure used to outline essays in order to identify topic sentences. Braddock read through each section of paragraphs which seemed to be related, then selected or reconstructed topic sentences. In this study, each essay is outlined using discourse block analysis. Discourse blocks were identified in the

following manner: (1) Each essay was carefully read and the thesis statement (controlling idea) was identified. (2) The essay was carefully re-read and the main points which supported the thesis idea were identified. Each main point was considered to be the topic idea of a particular discourse block. (3) In addition to the "main point" discourse blocks, or body blocks, an introductory and a concluding block were identified for each essay. Thus, in this manner, discourse blocks were determined, and discourse block topic sentences, sentences within a particular discourse block which express the main idea of the entire block, were located.

Due to the transient nature of the paragraph, discourse block analysis, rather than merely determining the topic sentence of each paragraph, was determined to be a more objective way to analyze the organization of the text. Paragraphs are problematic because they are shaped by the stylistic preference of their authors. For example, in some cases, paragraphs are longer because the author includes the main supporting points within one paragraph. In others cases, paragraphs are shorter because the author chooses to split off the main supporting points into separate paragraphs. However, each of these two cases represent only on discourse block unit. The point is that the inherent problem with using the paragraph as a base unit of analysis is that the author's style, rather than the written discourse itself, has a direct bearing upon the results of such analysis.

Procedure

Braddock (1974) selected a corpus consisting of a total of twenty-five essays from *The Atlantic*, *The New Yorker*, *The Reporter*, and *The Saturday Evening Review*. This study utilizes a corpus of twenty-five essays which were randomly selected from *The American Heritage* and *American History Illustrated*. First, sixty relatively recent (1990-1996), short (one to two pages) and medium-length (three to seven pages) articles were selected, thirty from each magazine. (For

the sake of time, lengthy articles were bypassed.) Then, twenty five of those articles were randomly selected. Appendix A summarizes the corpus information used in this study.

After the corpus had been selected and photocopied, each of the twenty-five articles were divided into T-units. First, the paragraphs in each essay were numbered. Next, T-units were indicated by using a vertical slash mark (unless embedded). Embedded T-units were set off by use of brackets. Finally, the number of T-units in each paragraph was tallied and recorded. The number 3.6 at the beginning of a paragraph would indicate that the third paragraph of an essay contained six T-units.

After the number of paragraphs and T-units was determined, each essay was carefully read several times and outlined using discourse block analysis. In the study, only the introductory discourse block, the concluding discourse block, and a representative discourse block taken from the body were analyzed. In cases where the thesis statement was located in the body of the essay, the discourse block in the body which contained the thesis statement was chosen for analysis. Subsequently, the T-unit(s) which contained the main idea of the discourse block was located. The following example from *American History Illustrated* illustrates how this was done.

Introductory Discourse Block:

1.4   The middle of the last century was a remarkable period in U.S. history. / America was a disjunct nation with well-established cities on the eastern seaboard and frontier towns on the Pacific Coast. / Gold had been discovered at Sutter's Mill near Sacramento, California. / The announcement of this find set the country Wild with excitement, leading to rapid settlement of California by pioneers from every state and territory, as well as adventurers from nations around the globe. /

2.6   Prospectors and merchants made fortunes in gold fields, / and a safe and expeditious method of transporting travelers and their gold between the East and West coasts was sorely needed. / The Panama Route soon became the preferred crossing. / Every two weeks, side-wheel steamships left New York and San Francisco for the Isthmus of Panama, / where a narrow-gauge railroad linked the Caribbean and Pacific

ports. / For two decades following the discovery of the precious metal, thousands of passengers, enormous amounts of mail, and tons of gold annually traveled this route / (Herdendorf, 1991).

After T-units were marked and tallied, essays were analyzed using discourse bloc analysis as follows (see Table One):

Table One - Discourse Block Analysis Method

DB1 (Intro)				Summary of T-units
Para 1				
Sent 1	T X			The mid 1850's was a remarkable period
Sent 2	A	X		America was disjunct – east/west coast (background info)
Sent 3	B	X		Gold discovered at Sutter's Mill
Sent 4	B1		X	This produced rapid settlement
Para 2				
Sent 1	B2	X		Prospectors and merchants get rich
Sent 1	B3	X		A way of transport needed
Sent 2	B3a		X	Panama route was the ticket
Sent 3	B3a1			X Steamships left NY and SF for Panama
Sent 3	B3a2			X Railroad crossed Panama (link)
Sent 4	B3a3			X For two decades it was the route

DB1 (Intro) indicates that this is the introductory discourse block of the essay. Para 1 and Para 2 indicate that this discourse block is composed of two paragraphs. The Roman numerals listed underneath each paragraph identify the sentence in which the T-unit occurs. "T" stands for the broad topic of the discourse block; it is represented by an "X" in the left-most position. The more specific the information, the farther to the right the "X" falls. Thus, using this method, topic T-units of discourse blocks were identified in a consistent manner. Appendix B summarizes the results of this discourse block analysis.

Results

Since the introductory, concluding, and a representative body block from each of the twenty-five essays were analyzed, one would expect to find that a total of seventy-five discourse block were analyzed in total; however, only seventy-three blocks were analyzed. This is due to the fact that one of the essays contained neither an introductory nor a concluding block. It was merely a story told on chronological order. Most noteworthy is the fact that 95% of the discourse blocks analyzed contained an explicit (non-implied) topic sentence.

When considering all discourse blocks, 66% contained the topic idea at the beginning of the discourse block. In 18% of the discourse blocks, the topic idea was in the middle of the block, and 11% of the time, the topic idea occurred at the end of the discourse block. Table Two displays this data.

Table Two - Topic Sentence Placement

Topic Idea	Intro	Body	Conclusion	Total
Beginning	15	20.5	12	47.5 (66%)
Middle	5	2.5	6	13.5 (18%)
End	3	2	3	8 (11%)
Implied	1	0	3	4 (5%)
	24	25	24	73 (100%)

Discussion

At first glance, this date appears to be incompatible with Braddock's results as well as those of Baumann and Serra. After all, 95% of all discourse blocks analyzed in this study were

found to contain explicit topic sentences, and 66% of all discourse blocks were found to begin with explicit topic sentences. Braddock (1974) indicated that only 13% of all paragraphs in his study opened with topic sentences, and that only 55% of all paragraphs contained explicit topic sentences. Similarly, Baumann and Serra (1984) found that only 27% of all paragraphs in their study began with explicit main ideas, and that only 44% of all paragraphs contained explicit main ideas. However, a closer examination of these two studies is necessary due to the possibility that the presence of very short paragraphs might tend to skew the results of these studies.

In his study, Popken (1987) identified the "skewing" nature of very short paragraphs when examining the relationship between major and minor topic sentences. It was noted that frequently in two block arrangements, although the second paragraph had no explicit topic sentence, it clearly fell under the domain of the topic sentence in the preceding paragraph. This phenomenon would seem to be especially common in cases where paragraphs are very short. In summation, it was determined that, across the seven discipline examined in Popken's study, 78% of all paragraphs were influenced by topic sentences. For the area of history, this was found to be true 87% of the time. It is noteworthy that Popken's figure, 87% of paragraphs in history texts are influenced by topic sentences, corresponds well with this study's finding that 95% of discourse block units contain an explicit topic idea.

Braddock (1974) found that 63% of major topic ideas (roughly equivalent to discourse block topic ideas of this study) were explicit. More revealing are Baddock's results when considering only paragraphs of greater than four T-units in length. (It should be noted that paragraphs composed of five T-units or less are indeed quite short.) For paragraphs in excess of

four T-units in length, he found that 62% contained explicit topic ideas in the first or second T-unit of the paragraph, 12% were in the last T-unit, and 26% occurred elsewhere in the paragraph.

A close examination of Baumann and Serra's (1984) findings yields similar results. Although only 44% of the paragraphs were found to contain explicit main ideas, it should be noted that their corpus of children's social studies texts contained very short paragraphs. In fact, the mean number of T-units per paragraph was only 4.0. Thus, the Baumann and Serra corpus would seem to be especially susceptible to the short-paragraph skewing phenomenon. When considering only the paragraphs that did contain explicit topic sentences, 62% of the main ideas were found to occur in the first sentence, 13% in the final sentences, and 23% occurred elsewhere in the paragraph. Table Three presents a comparison of results across studies.

Topic Placement	Smith (Discourse Block Units)	Braddock (Para > 4 T-units)	Baumann & Serra (Paragraphs with TS)
Table Two – Explicit Topic Idea Comparison Across Studies			
beginning	69%	62%	62%
middle	20%	26%	25%
end	11%	12%	13%
	100%	100%	100%

As Table Two clearly indicates, this careful comparison across studies yields similar results. Explicit topic ideas were found to be located at the beginning of discourse units roughly two-thirds of the time. At this point, the alert reader may suggest that Table Two is of questionable value due to the fact that it is being used to compare different entities across studies: discourse block units, paragraphs composed of more than four T-units, and paragraphs with

explicit topic sentences. While this may appear to be comparing apples, oranges, and pears, that is not quite the case. The important point to be drawn from this comparison is quite simple: regardless of which unit of discourse is used, explicit topic ideas were found to occur in the initial position approximately two-thirds of the time. The obvious follow-up question is, "How often are topic sentences/ideas explicit?"

The frequency of explicit topic ideas in paragraphs is dependent upon the stylistic "whim" of the particular author as he or she decides when and how to begin new paragraphs. As stated previously, using the paragraph as a base unit of discourse analysis is problematic due to the fact that the presence of extremely short paragraphs can tend to skew the results because the short paragraphs frequently do not contain an explicit topic sentence. Nevertheless, they do usually fall under the domain of the topic sentence of a preceding paragraph. In his study, Popken (1987) found that, across disciplines, the 78% of the paragraphs in his study were influenced by topic sentences. It is noteworthy that the mean number of paragraphs influenced by topic sentences is somewhat lower for the hard sciences (engineering, physics, and biochemistry – 64%) than that of the humanities (history, literature, and sociology – 88%); yet, in both cases, the majority of paragraphs were influenced by a topic sentence (p. 220). Thus, Baumann and Serra's (1984) finding for their corpus of children's socials studies texts, that only 44% of paragraphs contained explicit topic ideas, is somewhat misleading because many of those paragraphs were likely influenced by a topic sentence. Likewise, Braddock's (1974) report that only 55% of topic sentences were explicit is misleading for the same reason. The point to be emphasized is that it would appear that explicit, initial position topic sentences did exert a great deal of influence upon the essays which composed the corpuses of these studies.

In brief, Popken's call for a reassessment of Braddock's conclusion regarding the topic sentence is in order. Braddock's finding, that only 13% of paragraphs in expository academic writing begin with topic sentences, is misleading. The paragraph, due to its variable nature, is not an especially suitable unit for discourse analysis. Specifically, the presence of extremely short paragraphs, which often fall under the domain of a previous topic sentence, tend to skew the results of paragraph-based discourse data. In other words, the role of topic sentence influence is not represented in Braddock's statistic. This can lead the reader to assume that the initial position topic sentence plays a very minor role in written academic discourse. This fact is significant because, as Glatthorn (1980) states, "Several studies, most notably Braddock's 1974 research, conclude that most paragraphs written by professional writers do not contain [explicit] topic sentences and very few begin with topic sentences. From this…finding, several so-called experts of writing *leap* to the conclusion that we should not teach writers to use topic sentences" (p. 47, emphasis mine). Additionally, in a 1980 study, Moore and Readence cite Braddock and state, "…clear topic sentences are rare (Braddock, 1974). In fact, most of then only exist in reading materials: seldom do they occur in general prose" (p. 589). These are specific examples of the type of misapplication of Braddock's study which occur when a particular statistic - only 13% of paragraphs in expository writing begin with an explicit topic sentence – is taken out of context. In fact, results from this study, composed of a corpus made up of American history journal articles, find that 95% of all discourse block units contained an explicit topic idea, and approximately two-thirds of the time those ideas were at the beginning of the discourse block. In addition, careful examination of the results of others studies – Braddock (1974), and Baumann and Serra (1984) – when viewed through the insight provided by Popken (1987), suggest the same general idea: Although further study is needed, it would appear that the demise of the

explicit, initial position discourse unit topic sentence has been greatly exaggerated. Rather than indicating that initial position topic sentences play only a very minor role in written academic discourse, Braddock's widely cited study statistic primarily suggests that for the particular corpus he analyzed, the writer's tended to frequently use very short paragraphs. In short, we should take great caution not to over-generalize or misapply the results of Braddock's study.

Implications

Results of this study suggest that when teaching reading skills, it is appropriate to train students to look for the main idea of a paragraph at the beginning of a paragraph. Additionally, they should be taught that the topic sentence might be located at the end of the paragraph when the author uses inductive rather than deductive logic. Furthermore, a simple way to show how a topic sentence might occur in the middle of a paragraph is by demonstrating how a topic sentence readily follows background information which appears at the beginning of the paragraph. In some instances the main idea is expressed twice in a paragraph. This occurs when the topic sentence expressed in the opening sentence of the paragraph is fully developed with main supporting points and examples, often offset by transitions. Then the main idea is restated in the final sentence of the paragraph, serving as a conclusion of sorts for the paragraph. More difficult and less often encountered structures, such as implied main ideas and split topic sentences, can be taught later.

Such conventional wisdom is good as far as it goes; however, it is inadequate in helping students gain a growing understanding of how the paragraph functions within the greater text as a whole. How does the student understand a reading which is composed of many short paragraphs, and selecting the topic sentence of each paragraph is problematic? The role of major

topic sentences easily can be taught through the use of appropriate examples. This should be done early in the learning process. Consider the following example.

> A lightning strokes sudden release of energy explosively heats the air, producing the compressions we hear as **thunder**. When heard at a distance of about 100m (330ft) or less from the discharge channel, thunder consists of one loud bang, or "clap." When heard at a distance of 1km (0.62 mi) from the discharge channel, thunder generally consists of a rumbling sound punctuated by several large claps. In general, thunder cannot be heard at distances of more than 25km (16mi) from the discharge channel.
> Because lightning strokes generally occur near the storm center, the resultant thunder provides a method of approximating the distance to the storm. Light travels at approximately 300,000 km/s (186,000 mi/sec), and the lightning flash is seen instantaneously. Sound, however, travels at approximately 1/3 km /s (1/5 mi/s), so a time lapse occurs between seeing the lightning flash and hearing the thunder. This phenomenon can also be observed by watching someone at a distance fire a gun or hit a baseball. The report of the gun or the "crack" of the bat is heard after the smoke or flash from the gun is observed Or the baseball is well on its way
> By counting the second between seeing the light and hearing the thunder (by saying one-thousand one, one-thousand two, etc.), you can estimate your distance from the lightning stroke or the storm. For example, if 5 s is elapsed, then the distance would be approximately 1.k km (1 mi) away…(Johnson, 2001, p. 154).

These three paragraphs are taken from an article about thunderstorms. Clearly, while individual paragraph analysis has its place, the student will grasp the meaning much more quickly if he or she can understand that these three paragraphs form a unit (a discourse block) which focuses on the sound associated with thunder. The first sentence of paragraph one expresses a general main idea which covers all three paragraphs: lightning produces thunder. The topic sentence of paragraph two is the first sentence of that paragraph as well. Note that it is more specific that the first sentence of paragraph one as it discusses the manner in which we can approximate the distance to the storm based on the sound. Furthermore, paragraph three is even yet more specific, clearly falling under the domain of the preceding paragraph to the extent that there is little point in attempting to determine its topic sentence. Examples such as these help

readers understand the role of topic sentence influence when it extends beyond the paragraph level.

In conclusion, two points are to be noted. If the goal is to develop skilled readers, then it is entirely appropriate to teach readers to look for main ideas at the beginning of paragraph since they are frequently located there. Additionally, it is critical that this instruction be coupled with helping the students learn to look at paragraphs not merely as isolated entities which follow rigid standards, but as units which function in relation to the paragraphs which precede and follow them. In helping students understand the structure and organization of the text, we produce more skilled readers.

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Appendix A

Summary of Corpus Information

Essay #	Author (year)	Magazine	# of Para.	# of T-units	T-units /Para.
1	Weisberger (1996)	Amer. Herit.	14	97	6.93
2	Bracken (1996)	Amer. Hist. I.	33	143	4.33
3	Ward (1992)	Amer. Herit	22	96	4.36
4	Wiener (1991)	Amer. Hist. I.	57	306	5.37
5	Smith (1994)	Amer. Herit	13	106	8.15
6	Ward (1994)	Amer. Herit	12	116	7.00
7	Gordon (1994)	Amer. Herit	21	104	4.95
8	Smith (1994)	Amer. Herit	13	98	7.54
9	----- (1992)	Amer. Hist. I.	9	39	4.33
10	Kornhauser (1992)	Amer. Hist. I.	17	57	3.35
11	Soltysiak (1992)	Amer. Hist. I.	59	253	4.29
12	----- (1992)	Amer. Hist. I.	9	31	3.44
13	Davis (1992)	Amer. Hist. I.	42	149	3.55
14	Wood (1992)	Amer. Hist. I.	67	294	4.39
15	Gordon (1994)	Amer. Herit	21	104	4.95
16	Weisberger (1996)	Amer. Herit	17	89	5.24
17	Herdendorf (1991)	Amer. Hist. I.	51	195	3.82
18	Gustaistis (1991)	Amer. Hist. I.	12	69	5.75
19	McGinty (1991)	Amer. Hist. I.	52	237	4.56
20	Cory (1991)	Amer. Hist. I.	35	286	8.17
21	Lewis (1990)	Amer. Hist. I.	18	110	6.11
22	Weisberger (19940	Amer. Herit	16	95	5.94
23	----- (1994)	Amer. Hist. I.	16	65	4.06
24	----- (1990)	Amer. Hist. I.	17	64	3.76
25	Bellico (1990)	Amer. Hist. I.	32	122	3.81

Appendix B

Summary of Discourse Block Analysis (73 Blocks)

	Intro Block	Body Block	Concl Block	Total	Percent
T	23	25	21	69	95%
A	24	25	24	73	100%
A1	11	11	8	30	
A1a	3	4	1	8	
A1b	2	3	1	6	
A2	7	10	5	22	
A2a	1	5	3	9	
A21a	0	3	0	3	
A21b	0	2	0	2	
A3	3	4	2	9	
A3a	0	4	0	4	
A3b	0	1	0	1	
B	19	22	17	58	79%
B1	7	7	4	18	
B1a	0	2	2	4	
B2	2	6	2	10	
C	13	1	11	43	59%
C1	5	6	5	16	
C1a	2	1	1	4	
C2	2	4	4	10	
C3	2	2	1	5	
C4	1	2	0	3	
D	10	14	4	28	38%
D1	14	8	1	13	
D2	3	4	1	8	
D3	1	3	1	5	
D4	0	2	1	3	
E	6	6	3	15	21%
E1	2	5	1	8	
E2	1	3	1	5	
E3	1	1	0	2	
F	5	4	2	11	15%
F1	4	2	0	6	
F2	2	0	0	2	
F3	2	0	0	2	
G	2	3	0	5	7%
H	2	2	0	4	5%