

Motivating Finite Adverbial Subordinate Clause Placement in Argumentative English Essays:

Preposed and Postposed Adverbials in New York Times Editorials

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Abstract

Finite adverbial subordinate clauses can be placed before their main clauses (preposed), in the middle of their main clauses, or after their main clauses (postposed). This study found that the positioning and punctuation of adverbials in argumentative essays is determined primarily by the semantic type of the finite adverbial subordinate clause. Temporal and Conditional adverbials have a prominent tendency to be preposed vis-à-vis their main clauses, and have a salient tendency to have subjects that are coreferential to the subjects of their main clauses when preposed. Causal adverbials have an extremely strong tendency to be postposed, and have a strong tendency to have non-coreferential subjects; that is, causal clauses tend to compare two different variables. Although neither concession adverbials nor manner adverbials seem to have a salient tendency to be preposed or postposed, it was found that concession adverbials are categorically less integrated with their main clauses, sometimes to the point of being completely detached from the main clause altogether.

Keywords: Finite Adverbial Subordinate Clauses, Academic Writing, Postposed, Preposed

0. Introduction

This study examines the positioning of finite adverbial subordinate clauses in a specific genre of formal expository writing: New York Times editorials. The positioning and semantics of finite adverbial subordinate clauses have been studied in many different genres: in everyday English conversations (Chafe 1984; Diessel & Hetterle 2011), in detective novels (Ramsay 1987), in student essays (Chafe 1984), and in completely made-up sentences (Noordman & de Blijzer 2000). However, as of yet, no study has examined finite adverbial subordinate clauses in professional expository English writing. There are

numerous reasons why such a study is worthwhile: writing researchers have claimed that sophisticated and proficient writing includes many structurally elaborate sentences, which usually strongly implied or explicitly specified that great writing included longer sentences, longer “t-units” (a main clause and all the associated dependent clauses), and the frequent use of subordinate clauses (Chafe 1982; Brown & Yule 1983; Hughes 1996); both Hyland (2002) and Johns (1997) explicitly link subordination to structural elaboration in academic writing. That is, many of the ivory-tower mavens of the academic writing world insist that urbane writing entails recurrent usage of multi-clausal sentences—and woe to the student who writes otherwise!

However, recent research has called this perennial, but now dubious, idea into question. Corpus linguists, like Biber & Gray (2010), have demonstrated that many forms of academic writing are neither elaborated nor replete with subordinated clauses, nor are they saturated with multi-clausal monstrosities reminiscent of some bad memory from high school British literature class (I’m talking about you Dickens!). Indeed, research into register variation has demonstrated that subordination is a more common feature of spoken English than written English; that is to say, one of the register characteristics most commonly associated with formal English academic writing—adverbial subordinate clauses—is actually more often a trait of spoken English, which has historically been maligned as the less sophisticated version of the two genres (Biber & Gray 2010). In essence, years of stereotype are slowly being overturned by recent research; academic writing register styles prevalent before the advent of the telegraph are not necessarily the same as those used today (and nobody in Prussia is likely to read this). In other words, the importance of adverbials in academic writing seems to be overblown.

However, adverbials *are* a component of academic writing and expository essays—they’re just not as prevalent as the standard stereotype suggests. Even Biber & Gray (2010) find that adverbials are a common feature of academic writing, but far from a ubiquitous one. That is to say, writers need to make some use of adverbials, although they are not the culminating feature of a complex essay. But adverbials have one characteristic that makes them tricky to use: they can be preposed or postposed vis-à-vis the main clause of the sentence. For example, sentences (1) and (2) have exactly the same clausal structure, and both relate exactly the same information, but that does not mean they are used the same way—and indeed this paper will argue that they are used in different contexts:

- (1) When Steve Jobs died, the last American who knew what they were doing disappeared.
- (2) The last American who knew what they were doing disappeared when Steve Jobs died.

Both of the sentences above contain a main clause, with an embedded clause, and an adverbial at either the end or the beginning of the sentence itself. However, in sentence (1), the adverbial precedes the main clause—it is preposed. In sentence (2), the adverbial follows the main clause—it is postposed. Writers commonly prepose and postpose adverbials, but the motivation for such placements is still very much unclear. This study attempts to explicate the reasons for, and the motivations as to why writers, in particular editorial writers, prepose or postpose adverbials. As yet, the author knows of no research that has focused on only this genre of English writing, and hopes that this research will fill that hole in the literature.

1. Previous Studies

Although there are a number of exceptions, it is not too much to say that most previous studies focused on the preposing and postposing of only one type of finite adverbial subordinate clause, and thus the findings were necessarily limited. As a result, the permutations of all finite adverbial subordinate clause placements have not been discovered as yet. The conclusions of those studies are reviewed in section 2.2, but before entering into any discussion of finite adverbial subordinate clauses, it is essential to define exactly what “finite adverbial subordinate clause” means; section 2.1 classifies the category “finite adverbial subordinate clause” and states exactly how that term will be used in this study.

1.1 Distinguishing Finite Adverbial Subordinate Clauses from Other Types of Subordinate Clauses

Adverbial subordinate clauses are only one type of subordinate clause. Other than adverbial subordinate clauses, relative clauses and complement clauses share space in this grammatical category. Complement clauses function as core arguments of a verb of a superordinate clause that requires them (Celce-Murcia & Larsen-Freeman 1999). They are usually obligatory constituents of the main clause and thus they cannot be omitted or erased. In contrast, adverbials are adjuncts functioning as adverbial or sentential modifiers. Since adjuncts are not in any way obligatory (i.e., information required to fill in all the argument slots demanded by the verb of the clause), adverbials can always be

removed without impeding the completion of the clausal structure. This helps distinguish the clausal structure of sentences (3) and (4), which nominally have clauses that appear to be exactly the same—but structurally they are not:

- (3) This is because iPhones are fiendishly cool. (Complement clause)
- (4) He wants a new iPhone4S because iPhones are fiendishly cool. (Adverbial)

However, the other type of subordinate clause is the relative clause. Like adverbials, relative clauses are optional in the sense that they are not required to complete a clause, and therefore deleteable. But while adverbials modify a whole clause or a verb phrase, relative clauses modify nouns or noun phrases (Celce-Murcia & Larsen Freeman 1999). Furthermore, an adverbial subordinator heads adverbials, but relative clauses are headed by a relative pronoun, which can be deleted in cases of object pronominalization, that is coreferential to the head noun which it modifies. This helps to distinguish the clause structure of the following sentences (5) and (6):

- (5) Since iPhones are fiendishly cool, George wants one. (Adverbial)
- (6) George, who thinks about Apple products far too often, wants an iPhone. (Relative clause)

Furthermore, adverbial subordinate clauses can be subdivided into three categories: 1) finite adverbials; 2) nonfinite adverbials, which can include participial and infinitival constructions; and 3) adverbial phrases, which by definition are not actually clausal. An example of each follows below:

- (7) After George got the iPhone4S, he was happy for two days. (Finite adverbial)
- (8) After getting the iPhone4S, George was happy for two days. (Nonfinite adverbial)
- (9) After the purchase of the iPhone4S, George was happy for two days. (Adverbial phrase)

This study concerns itself only with finite adverbial subordinate clauses, and will use the term *adverbial* for the rest of the paper, but what is actually being referred to is *finite adverbial subordinate clauses*.

Yet, even further subdivisions are possible, and indeed necessary. Not all adverbials do the same thing, nor do they have the same purpose, although the semantic border between certain polysemous subordinate coordinators can be rather porous (Dancygier & Sweetser 2000; Konig & Siemund 2000). In fact, adverbials are actually a rather heterogeneous group: adverbials can express conditional, temporal, causal, purpose, concession, and manner meanings.

- (10) If Apple creates an iTV, George will buy one. (conditional)
- (11) When the iTV comes out, George will buy one. (temporal)
- (12) Because it will be a revolutionary way to waste more time, George will buy an iTV. (causal)
- (13) He turned on the iTV so that he could watch *The Game of Thrones*. (purpose)
- (14) Although it is a figment of his imagination, George is sure Apple will make an iTV. (concession)
- (15) As Google reported it sensationally, Santorum is now a neologism for rectal effluvia. (manner)

In conclusion, adverbials are a heterogeneous class of clauses that perform very different functions. In fact, scholars have found that certain types of adverbials seem to be preposed or postposed with varying frequency, and that is the topic to which we next turn.

1.2 Finite Adverbial Subordinate Clause Placement

As mentioned in the introduction, adverbials can be positioned either before or after the main clause. Adverbials positioned before the main clause are called preposed, and those positioned after the main clause are called postposed. As to why writers prepose or postpose adverbials, scholars are divided among competing theories—but each explanation probably has more than a grain of truth to it. In general, writing researchers claim that adverbial positioning is affected by referential constraints, cognitive processing considerations, overall contextual pragmatics, and even universal linguistic characteristics. Each is discussed below.

1.2.1 Coreferential Subjectivity

Ramsay (1987), having analyzed “if” conditional adverbials and “when” temporal adverbials in a single detective novel, concluded that adverbial placement vis-à-vis the main clause is highly correlated to the degree the subject of the adverbial refers to the subject of the main clause. Ramsay discovered that in both conditional adverbials and temporal adverbials of the varieties she examined, the adverbials have an extremely strong and salient tendency to be postposed when the subject of the adverbial and the main clause are the same, or at least coreferential in the case of anaphoric pronominalization. That is, the referential scope of the subjects of preposed and postposed adverbials are quite different: postposed adverbials tend to have subjects which refer only back to the immediately preceding main clause, but preposed adverbials have subjects which often refer farther back into the preceding text. In other

words, preposed adverbials serve to connect the information presented in the main clause to the preceding text, while postposed adverbials tend to serve as comments on only the information in the immediately preceding main clause.

However, the results of Ramsay's study should be taken with a grain of salt. Ramsay's study does suffer from a number of defects. All of the samples are drawn from a single source—a rather bland detective novel—that was written by a single author. As this study will show, Ramsay's findings seem to be a reflection of the author's stylistic predilections, not more general writing conventions. In other words, Ramsay's conclusions demonstrate the writing style of a single author, not a characteristic of the English language as a whole.

1.2.2 Processing

Other scholars make no mention at all to scope or referential distance. In fact, one group of scholars claim that variance in linguistic order is a reflection of cognitive processing constraints. Noordman & de Blijzer (2000) contend that the ease of information processing is the only true consideration when two grammatical formats are possible, and to a degree, Cristofaro (2003) agrees with them. That is, the position occupied by preposed and postposed adverbials is a reflection of how one position is more facilitative of information processing. Although this is probably true to some extent, it does not explain why certain types of adverbials are preposed more than others. For example, this idea does not explain why conditional adverbials are preposed far more frequently than causal adverbials. Noticing that very fact, Diessel (2005) claimed that only conditional and concessive adverbial positioning seems to be determined by processing concerns. Later, Diessel (2008) amended his earlier claim to include temporal adverbials as well. Lastly, Diessel (2005) also argues that while the ease of information processing is a major consideration in adverbial placement, discourse pragmatics and semantics also seem to play a role as well.

Furthermore, Diessel (2008) claims that the iconicity principle, which stipulates that information is sequenced in the temporal order in which events occurred, explains the behavior of many temporal adverbials as well. That is, adverbials that represent events or information prior to the events or information present in the main clause tend to appear before the main clause. Inversely, adverbials that represent events or information subsequent to the events or information in the main clause tend to appear after the main clause. Diessel (2008) cites the tendency of temporal adverbials headed by either “after” and “before” to appear more frequently in preposed or postposed positions as

evidence of this claim.

1.2.3 Pragmatics

Many scholars claim that adverbials can perform a pragmatic function: postposed adverbials provide given or background (Given/Old) information and preposed adverbials tend to provide foreground (New/Unknown) information (Haiman 1978; Thompson; 1987; Matthiessen & Thompson 1988; Fukuda 1993). These scholars argue that preposed and postposed adverbials actually perform radically different roles, especially in the case of preposed adverbials, although grammatically they look exactly the same. Further, preposed adverbials tend to act as discourse topics (Haiman 1978; Traugott 2000), setting the stage for everything that follows. Postposed adverbials, on the other hand, do not seem to act as discourse topics.

Other scholars, like Ford (1987) and Diessel & Hetterle (2011), claim that adverbials are strategically deployed in interaction for certain effects. Specifically, causal adverbials are often deployed for two certain types of effects: 1) in response to a statement the hearer does not accept, and 2) provides a reason for a potentially problematic statement. However, because expository writing does not entail the instantaneous give-and-take of face-to-face interaction, it is unclear how much of these findings are actually applicable to research on adverbials in written genres.

1.2.4 Universal Linguistic Characteristics

In a recent and novel series of studies, Diessel (2001) and Diessel & Hetterle (2011) claim that the positioning of adverbials is strongly correlated to the type of language the adverbial appears in. If the language is a SOV language, adverbials have a much stronger tendency, bordering on a categorical tendency in some languages, to be preposed vis-à-vis the main clause. In contrast, SVO languages tend to be much more lenient and permissive with adverbial placements: adverbials can be preposed and postposed, although there is a strong preference for conditional adverbials to be preposed, and causal and purpose adverbials to be postposed. That is, language typology strongly influences the degree to which a language allows the proposing and postposing of adverbials.

2. Data & Methodology

This section has three purposes. First, in section 3.1, the corpus will be described. Second, in section 3.2, the conditions under which adverbials were included or excluded from the corpus will be explained. Last, in section 3.3, the way in which the adverbials

that were included in the corpus were coded will be enumerated.

2.1 The Corpus

The corpus comprises 57 New York Times editorials that were all collected at random from late October 2011 to late January 2012. The breakdown of editorial authors is as follows: David Brooks—America’s last intelligent conservative (8 editorials), Gail Collins—she puts the sibilant hiss into “English” (4 editorials), Joe Nocera (6 editorials), Paul Krugman (5 editorials), Roger Cohen (3 editorials), Maureen Dowd—she’s the one that said Newt Gingrich “ejaculates ideas” (8 editorials), Frank Bruni (8 editorials), Nicholas Kristof (4 editorials), Thomas Friedman (6 editorials), Ross Douthat (2 editorials), William Galston (1 editorial), Peter Singer (1 editorial), and the New York Times editorial staff (1 editorial). The political stance of each author ranges from the very liberal to the libertarian and the moderately conservative, but all the authors represent the pinnacle of American word-smithing, orthographic wit, and polished expository prose. Without putting too fine a point to it, one can assume that if adverbials are a component of sophisticated writing, then the corpus will reflect that characteristic.

2.2 Specifying Finite Adverbial Subordinate Clauses in the Corpus

Not all finite adverbial subordinate clauses in the corpus were included in the analysis. Specifically, this study excluded four types of adverbials from the corpus: 1) adverbials without an explicit main clause, 2) adverbials posed in the middle of the main clause, 3) completely anaphoric adverbials, and 4) adverbials divided from their main clause with a period. Each exclusion is justified below.

First, it is extremely difficult to adduce any relationship between an adverbial and a main clause if there is no main clause, so adverbials without an associated main clause are removed from the corpus. An example of adverbials without an explicit main clause appears below:

“There were several critical moments where I said to Newt, *‘If we can just get to the debates, if we can just get to September,’* Callista told the Christian Broadcasting Network” (Dowd 2011d).

Although both of the italicized clauses qualify as adverbials according to the definition presented in section 2.1, no main clause appears in the text, and the reader has to supply one himself or herself. This study does not consider lone finite adverbials to be true adverbials and thus excludes them from the corpus. There were, however, only three examples of adverbials without explicit main clauses, all from quotations, in the entire corpus, so it is hard to believe that this exclusion greatly affects the results.

Furthermore, finite adverbial subordinate clauses posed in the middle of the main clause were also excluded from the corpus. For example,

“And its prognosis, *if we continue on the current path*, is grim” (Nocera 2011a).

Like the clauses excluded from the corpus above, the italicized adverbial has all the characteristics of a finite adverbial. However, adverbials posed in the middle of their associated main clause were excluded from the corpus because there are only two examples in the entire corpus and thus it is difficult to make meaningful generalizations from such a small corpus—*other than that they are rare*.

Completely anaphoric adverbials were also excluded from the corpus. Anaphoric adverbials were excluded from the corpus tally because anaphoric adverbials are by definition coreferential to a previous clause. For example,

“By now you may have guessed that I’m talking about Jon Corzine. *If so*, you probably know that his inspiring story has an unhappy ending” (Douthat 2011a).

One of the purposes of this study is to ascertain if positioning affects the degree to which adverbials are coreferential with what comes before. Anaphoric adverbials are automatically already that, so there is no need to adduce if they are coreferential with what comes before them. Accordingly, anaphoric adverbials are removed from the corpus; however, there are only two anaphoric adverbials in the corpus, so it is unlikely that this exclusion warped the results in any way.

Lastly, adverbials divided from their main clause with a period were also excluded. That is, if the adverbial composed its own sentence (*technically a sentence fragment*) in the text next to its logical main clause, the adverbial was excluded. For example,

“He’s hoping the race drags on to February and caucus states like Maine and Nevada, where a candidate with a small-but-dedicated following has an advantage. *Even if that following appears to be composed largely of slightly abrasive young men with high IQs who smoke and wear hunter caps with ear flaps*”

(Collins 2012c).

In the above example, the clause that begins with *even if* qualifies as an adverbial in every way, but it is not part of the sentence of which the main clause is a part. There were only three examples of this phenomenon in the corpus though, so this exclusion will not heavily affect the conclusions. It is interesting to note that all three examples were concession adverbials, and we will return to these three examples in passing when we discuss one of the categorical behaviors of concession adverbials.

There is one type of adverbial that was completely ignored and removed from the

corpus: purpose adverbials. No purpose adverbials were identified because a multitude of studies have demonstrated that purpose adverbials are nearly categorically postposed in written English (Diessel 2001, 2005). This study, therefore, excludes purpose adverbials from the analysis because they are well attested in the literature.

2.3 Coding Adverbials

All adverbials not excluded under the criterion listed in section 3.2 were tallied and coded for five features: 1) preposed or postposed vis-à-vis the main clause; 2) the presence or lack of punctuation, defined as either a comma or an em-dash, between the adverbial and the main clause; 3) the semantic type of the adverbial; 4) the presence or lack of coreferential subject nouns or noun phrases between the adverbial and its main clause; and 5) position of sentences with adverbials in a paragraph: first sentence in a paragraph, or subsequent.

3. Results

In total, 294 adverbials were identified in the corpus. 83% of the adverbials in the corpus appear with punctuation, overwhelmingly a comma but sometimes an em-dash; only 17% appear without any punctuation between the adverbial and the main clause. Indeed, if the adverbial was not set off from the main clause by a comma, the adverbial had an extremely strong tendency to be postposed. Furthermore, overall, adverbials have a slight tendency to be preposed in the corpus: 60% of the adverbials are preposed; 40% of them are postposed. Accordingly, the unmarked (read: most frequent) positioning of an adverbial in the corpus is preposed with a comma. Indeed, as table 1 below shows, 59% of all the adverbials in the corpus are preposed with a comma.

TABLE 1: Overall Tendencies in Adverbial Distribution in the Corpus

	Preposed Adverbial	Postposed Adverbial
Not punctuated	3 (1%)	49 (16%)
Punctuated (comma or em-dash)	172 (59%)	69 (24%)

However, the overall tendencies of adverbials as a group fade away when the adverbials are divided into subordinate categories based on semantic type. In all, there were 109 temporal adverbials, 91 conditional adverbials, 39 causal adverbials, 29 concession clauses, and 26 manner adverbials in the corpus. The overall distribution of adverbials in the corpus was 37% temporal, 31% conditional, 13% causal, 10% concession, and 9% manner. Temporal and conditional adverbials were used far more than any other adverbials, and they accounted for two-thirds of all the adverbials present in the corpus.

This overall distribution of adverbials, as shown in table 2, is consistent with the findings of other studies (Ramsay 1987; Ford 1993; Diessel 2001, 2005, 2008).

TABLE 2: Distribution of Adverbials according to Semantic Type in the Corpus

Temporal	Conditional	Causal	Concession	Manner
109 (37%)	91 (31%)	39 (13%)	29 (10%)	27 (9%)

Overall, adverbials have a strong tendency to be preposed in expository writing; however, upon further analysis, it was discovered that the overall tendency to be preposed is mostly a reflection of the tendencies of two types of adverbials: 70% of the temporal adverbials were preposed; 74% of the conditional adverbials were preposed. In other words, both temporal and conditional clauses have a strong tendency to be preposed. Other adverbials, in contrast, behave very differently. For instance, causal adverbials have an extremely strong tendency to be postposed: 85% of all causal adverbials are postposed. However, concession and manner adverbials resist this dichotomy: concession adverbials are nearly evenly divided between preposed adverbials (55%) and postposed adverbials (45%); manner adverbials are also evenly divided between preposed adverbials (46%) and postposed adverbials (54%). That is, as table 3 below demonstrates, the tendency to be preposed or postposed differs according to the type of adverbial.

TABLE 3: Preposed and Postposed Adverbials according to Semantic Type

Temporal	Conditional	Causal	Concession	Manner
Preposed: 76 (69%)	Preposed: 67 (73%)	Preposed: 6 (15%)	Preposed: 16 (55%)	Preposed: 12 (46%)
Postposed: 33 (31%)	Postposed: 24 (27%)	Postposed: 33 (85%)	Postposed: 13 (45%)	Postposed: 14 (54%)

Certain adverbials had a stronger tendency to be punctuated or not: 100% of the concession adverbials appeared with punctuation, usually in the form of a comma; that is, concession adverbials always appear with either a comma or an em-dash between the adverbial and the main clause. Other types of adverbials are not as categorical, yet still strongly lean to one side of the dichotomy: 85% of the conditional adverbials appeared with a comma; 82% of the temporal adverbials appeared with a comma; 81% of the manner adverbials appeared with a comma; even the type of adverbial that appeared with commas the least, the causal adverbials, appeared with commas 67% of the time. That is, as table 4 below demonstrates, adverbials frequently appear with commas.

TABLE 4: Punctuated and Unpunctuated Adverbials according to Semantic Type

Temporal	Conditional	Causal	Concession	Manner
Punctuation: 82%	Punctuation: 85%	Punctuation: 67%	Punctuation: 100%	Punctuation: 81%
None: 18%	None: 15%	None: 33%	None: 0%	None: 19%

However, when the characteristics of preposed/postposed adverbial and punctuated/unpunctuated adverbial are combined and cross-referenced, very stark patterns start to emerge. Temporal adverbials have a strong tendency to be both preposed and punctuated. Likewise, conditional clauses have an extremely strong tendency to appear preposed and punctuated. Causal clauses are strongly inclined to be postposed, with a slight tendency to appear with punctuation. Concession adverbials are categorically marked off from the main clause with a comma or an em-dash, but tend to equally appear as preposed and postposed clauses vis-à-vis the main clause. Lastly, manner adverbials have a slight tendency to appear as postposed clauses with punctuation. That is, as table 5 below shows, certain kinds of adverbials tend to be preposed or postposed, as well as appear with or without punctuation. The most common tendency for each semantic type of adverbial is in bold.

TABLE 5: Preposed/Postposed & Unpunctuated/Punctuated Adverbials according to Semantic Type

	Temporal		Conditional		Causal		Concession		Manner	
	Pre-	Post-	Pre-	Post-	Pre-	Post-	Pre-	Post-	Pre-	Post-
No Punctuation	2	18	1	13	0	13	0	0	0	5
	2%	17%	1%	14%	0%	33%	0%	0%	0%	19%
Punctuation	74	15	66	11	6	20	16	13	12	9
	68%	13%	73%	12%	15%	51%	55%	45%	46%	35%

Lastly, certain adverbials have a much greater tendency to have subjects that are coreferential to the subject nouns or subject noun phrases of their main clauses. Overall, preposed and punctuated adverbials had the highest tendency to have coreferential subjects (42%). Next, postposed and unpunctuated adverbials had coreferential subjects 33% of the time. Postposed and punctuated adverbials had coreferential subjects 23% of the time. Preposed and bound subjects were all coreferential, but because the sample size was so small, the finding was considered invalid.

TABLE 6: Coreferential Adverbial and Main Clause Subject Nouns or Noun Phrases

	Punctuated	Unpunctuated
Preposed Adverbial	73/172 (42%)	16/69 (23%)
Postposed Adverbial	3/3 (100%)	16/49 (33%)

However, the above tendencies are the result of certain semantic types of adverbials. Indeed, preposed conditional adverbial subjects are coreferential with the subject of their main clause 49% of the time. Preposed temporal adverbials are very similar: preposed temporal adverbial subjects are coreferential with the subjects of their main clause 41% of the time.

TABLE 7: Coreferential Subjects, Semantic Type of Adverbial, and Position

	Coreferential Subjects	Non-coreferential Subjects
Preposed Temporal Adverbial	31 (31/76=41%)	45 (45/76=59%)
Postposed Temporal Adverbial	9 (9/33=27%)	24 (24/33=73%)
Preposed Conditional Adverbial	33 (33/67=49%)	34 (34/67=51%)
Postposed Conditional Adverbial	6 (6/24=25%)	18 (18/24=75%)
Preposed Causal Adverbial	1 (1/6=17%)	5 (5/6=83%)
Postposed Causal Adverbial	11 (11/33=33%)	22 (22/33=67%)
Preposed Concession Adverbial	2 (2/16=13%)	14 (14/16=88%)
Postposed Concession Adverbial	4 (4/13=31%)	9 (9/13=69%)
Preposed Manner Adverbial	2 (2/12=17%)	10 (10/12=83%)
Postposed Manner Clause	2 (2/14=14%)	12 (12/14=86%)

(For calculation, rounding off was adopted, and therefore the total percentage may not be 100%)

Although no regular pattern seems to emerge from the previous data, the temporal adverbials do have a very strong pattern. As table 8 below demonstrates, certain temporal subordinators are used much more frequently than other kinds. The temporal subordinator “when” is the most frequently used temporal subordinator, and it has a salient tendency to appear with preposed clauses. Other temporal subordinating conjunctions are used so infrequently as to render any attempt to make meaningful generalizations about them superfluous.

TABLE 8: Temporal Subordinators/Temporal Subordinating Phrases and Positioning

	when	while	as	until	before	after	once	the first time
preposed	52	3	9	0	2	6	4	1
postposed	19	3	3	1	3	3	0	0

However, when a temporal adverbial has a coreferential subject, the temporal subordinator is overwhelmingly “when.” In fact 90% of all temporal adverbials that had a coreferential subject were headed with “when.” That is, when expository writers want to make a simultaneous temporal relationship between two clauses, the subject of both clauses tends to be the same as well.

TABLE 9: Temporal Adverbials with Coreferential Subjects

	When	As	While	The first time	After	Before
Coreferential Subjects	26	1	1	1	1	1

Most adverbials were embedded well within a paragraph; most editorial paragraphs do not start with sentences that contain adverbials. The paragraphs that did start with sentences that contain adverbials, however, had a distinct pattern: paragraph-initial sentences containing adverbials had adverbials that strongly tended to be preposed and punctuated (61%). This tendency is expressed in table 11 below. Both tables, taken together, illustrate that when adverbials are a component of the first sentence in a paragraph, the adverbial tends to initiate the paragraph.

TABLE 10: Paragraph-Initial Sentences Containing Adverbials

	Paragraph-Initial	Non-Paragraph-Initial
Preposed & Punctuated Adverbial	53 (61%)	119
Preposed & Unpunctuated Adverbial	0 (0%)	3
Postposed & Punctuated Adverbial	23 (26%)	26
Postposed & Unpunctuated Adverbial	11 (13%)	58

4. Discussion

In this section, we will examine previous research in the light of this study’s findings. In particular, this study’s results cast new light on claims made by Ramsay (1987). Furthermore, the data gleaned from this study seem to suggest two more possibilities about the behavior of adverbials unattested in any of the literature. In particular, the data demonstrates that the behavior of concession adverbials in expository writing is fairly systematic, and that the subordinator “even if” is polysemous

based on its position vis-à-vis its main clause.

The results of this study strongly refute one of the surprising findings in Ramsay (1987). Ramsay discovered that postposed conditional and temporal adverbials headed with either “if” or “when” strongly tended to have subjects that were coreferential with the subjects of their main clauses. That is, in Ramsay’s corpus, the subjects of postposed conditional and temporal adverbials were the same or anaphorically referential with the subject of the main clause. However, the adverbials in the corpus used in this study do not mimic this behavior. In fact, the majority of postposed adverbials in the corpus do not have coreferential subjects. Indeed, even the postposed conditional and temporal clause subjects were different much more than half of the time (73% and 75% respectively). On the other hand, Ramsay’s conclusions about preposed conditional and temporal adverbials apply equally well to this data: in both Ramsay’s data and the corpus for this study, preposed conditional and temporal adverbials headed by either “if” or “when” had coreferential subjects nearly half the time.

One of the major discoveries of the literature of the 1980s and 1990s concerning adverbials was that preposed adverbials are more highly integrated with previous information and discourse, and that postposed adverbials are only integrated with their immediately previous main clauses (cf. Thompson 1985; Ramsay 1987; Ford 1993). However, the results of this study call this stereotype into question. In fact, this finding seems to verify the findings of Verstraete (2004), who claimed that postposed adverbials are not as locally functioning as has been claimed by many other scholars. That is, under the assumption that coreferential subject nouns or noun phrases are indicative of clausal integration, this study seems to show that postposed adverbials are not any more integrated with their main clauses than preposed adverbials are.

Speaking of clausal integration, this study has discovered a categorical property of concession adverbials: they are not highly integrated with their main clauses, whether they are preposed or postposed. Indeed, concession adverbials are categorically punctuated. No concession clauses in the corpus are bound to their main clauses, if “bound” is defined as the lack of punctuation between the adverbial and the main clause. Even if that is not enough evidence to warrant the claim, the following should be: as mentioned briefly in section 3.2, some adverbials are divided from their main clauses by a period, and the adverbial becomes what is technically a sentence fragment. What is interesting is that all of the adverbials that were like this were all concession adverbials. That is, the ultimate form of clause non-integration—the presence of a period to divide a

sentence from another—was used only to mark off concession adverbials from their main clauses.

The data also suggests an interesting possibility about the subordinating phrase *even if*: when *even if* is deployed as part of a preposed adverbial, the adverbial expresses a conditional meaning; however, when *even if* is deployed as part of a postposed adverbial, the adverbial expresses a concessive meaning. The fact that *even if* can be used to express both conditional and concessive meanings is something that scholars have noted for years (Declerck & Reed 2001), but as far as this author knows, no scholar has claimed that the two of the meanings which the polysemous *even if* can express are determined via position vis-à-vis their main clause; that is, *even if* expresses different meanings depending on whether it is part of a preposed or a postposed adverbial. In the corpus, preposed adverbials headed with *even if* categorically expressed conditional meanings; postposed adverbials headed with *even if* categorically expressed concessive meanings. However, the small sample size of even if headed adverbials in the corpus makes this finding tentative.

Lastly, the data seems to indicate that the relationship between adverbials and paragraph beginnings is fairly determinative: when sentences containing adverbials are the first sentence in a paragraph, the adverbial strongly tends to be preposed and punctuated. An interesting correlate to this observation is the relationship between editorial beginnings and adverbials. If the first sentence in the entire editorial contained an adverbial, it was categorically preposed and punctuated. That is, editorials beginning with subordinating structures begin with preposed adverbials, which can be assumed to be used to set the stage for everything else that is to come in the editorial.

5. Pedagogical Implications

As Biber & Gray (2010) and the results of this study demonstrate, adverbials are not a major component of either research writing or editorial writing, but they are frequent enough in expository writing to warrant special comment. The results of this study do make it possible to formulate some pedagogical rules—pedagogical oversimplifications—to convey to writing students as to when it is more appropriate to prepose or postpose an adverbial.

Celce-Murcia & Larsen-Freeman (1999) state that postposed adverbials should not appear with a comma between the adverbial and the main clause unless the adverbial represents an “afterthought”, which they then unhelpfully leave undefined. Describing

“afterthoughts” in writing praxis can only be difficult, but the data in this study provides some answers as to how to render the idea of “afterthought-ness” more palpable to writing students. First, there is one semantic type of adverbial that categorically appears with punctuation, usually in the form of a comma, regardless of the subordinating conjunction or the position of the adverbial: concession adverbials. Concession adverbials always appear with punctuation; it is no pedagogical legerdemain to tell your students to *always* put a comma at the head of a postposed concession adverbial because postposed concession adverbials are *always* afterthoughts.

However, none of the above actually informs us as to how to teach students when and why to prepose or postpose adverbials. There are some adverbials about which teachers can make fairly categorical statements: conditional adverbials are categorically preposed and purpose clauses are categorically postposed. Other adverbials require a more nuanced approach, and we will call the nuanced approach “the adverbial algorithm.” Here is “the adverbial algorithm” as it applies to temporal, causal, concession, and manner adverbials: if the subject or theme of the temporal, causal, concession, or manner adverbial is the same as the subject or theme of the previous sentence, then the adverbial should be preposed; if not, it should be postposed. The adverbial algorithm’s three stages should be applied in succession, with a higher rule to be applied before a lower one. The algorithm appears below:

The Adverbial Algorithm:

- 1 Conditional adverbials should be preposed, and purpose adverbials should be postposed.
- 2 If the sentence is at the beginning of the paragraph, the adverbial should be preposed.
- 3 If the sentence is not at the beginning of a paragraph, then:
 - 3.1 If the subject or theme of the adverbial is the same as the subject or theme of the previous sentence, the adverbial should be preposed vis-à-vis its main clause.
 - 3.2 If the subject or theme of the adverbial is not the same as the subject or theme of the previous sentence, then the adverbial should be postposed vis-à-vis its main clause.

This algorithm is admittedly simplistic, but that is the entire point: students need something to determine where to place adverbials, and this algorithm will probably allow them to do exactly that. The adverbial algorithm helps explain why one choice of

the two choices given in each problem below is probably more natural. In the following problems (A, B, C, D), students are required to choose the more natural position of the adverbial. Although both are choices are grammatical, one choice is (much) more natural:

- A) Many proponents of the Death Penalty claim that it reduces the likelihood that criminals will commit murder. 1(If that is true, the countries with capital punishment will have lower murder rates than countries without capital punishment.) 2(The countries with capital punishment will have lower murder rates than countries without capital punishment if that is true.)
- B) The Japanese government should expand its network of nuclear energy plants. 1 (No viable alternative to nuclear power exists if people want to continue their current rates of power usage.) 2(If people want to continue their current rates of power usage, no viable alternative to nuclear power exists.)
- C) Proponents of abandoning nuclear energy claim that Germany has discovered a way to power the economy and reduce their dependence on nuclear power at the same time. However, 1(although the proponents of renewable energy are earnest, what they never mention is the fact that “renewable energy” can not actually provide the amount of energy that nuclear energy can at the same cost.) 2(what they never mention is the fact that “renewable energy” can not actually provide the amount of energy that nuclear energy can at the same cost although the proponents of renewable energy are earnest.)
- D) Many countries are slowly introducing military robots into their inventories. In particular, 1(the American military utilizes military robots because the American military can delegate extremely dangerous and tedious duties to the military robots.) 2(because the American military can delegate extremely dangerous and tedious duties to the military robots, the American military utilizes military robots.)

The adverbial algorithm can be used in order to adduce which of the two formats (preposed/postposed) is more natural. Rule 1 stipulates that choice 1 in problem A, and choice 2 in problem B are the more natural choices. Indeed these are the more natural choices. Rule 3.1 identifies choice 1 in problem C as the more natural choice, and Rule 3.2 marks choice 1 in problem D as the more natural choice. The Adverbial algorithm is, of course, a pedagogical illusion, but it can prove to be quite useful.

6. Conclusion

Adverbial placement is very sensitive to semantic type. That is, adverbials that represent certain types of semantic relationships tend to appear in one position or the other more readily. However, other factors are at work as well, and discourse considerations also seem to play a role: temporal adverbials and main clauses that express simultaneous relationships seem to also prefer similar clausal subjects. Furthermore, certain adverbials affect orthographic considerations: concession adverbials are always punctuated—*always*. In a word, adverbials have a complex relationship with semantics and positioning, coreferential subjectivity, and English orthography. Unfortunately, this study does not provide answers to most of those riddles. That is a subject for another time.

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