

## **TWO CENTURIES OF PROGRESS IN TECHNICAL COMMUNICATION**

**BRADFORD R. CONNATSER**

*WriteNow Communication*

### **ABSTRACT**

A common aphorism in the halls of education is that the writing skills of Americans decline over time. Compared to the “golden age of letters,” so the argument goes, each subsequent generation of writers is worse than the last. Although contemporary readers and educators commiserate over encounters with bad writing, a fair comparison of 18th century American exemplars to modern American exemplars reveals a significant advance in clarity, an advance that technical communicators can be proud of. To demonstrate the advances in expository writing over the past two centuries, the author compares what the authors of the U.S. Constitution did with their limited resources to what modern professional communicators do with their abundance of resources. Many of the communication problems that were pervasive when the U.S. Constitution was created have since been remedied by insights emerging from the fields of linguistics, human factors, and cognitive psychology, among others.

### **INTRODUCTION**

“Writing is easy,” said Mark Twain. “All you have to do is cross out the wrong words.” If only it were that easy! Professional writers—especially writers in journalism and technical communication—struggle to understand their audiences, craft clear and interesting sentences, and communicate their ideas (and the ideas of their clients) with a high degree of accuracy. However, if there is a consensus among teachers of writers, it is that each new generation of writers is less capable than the last, with fingers pointing at the deficiencies of public education and the

mentally numbing effect of video games and electronic communication, among other factors.

During my three years of teaching English and technical communication at the college level, I heard from my colleagues that our abilities to clearly and effectively communicate our ideas atrophy as we greedily assimilate technology into our lives. We read less and surf the Net more. We converse less and listen to our earphones more. We write fewer letters and send more (often malformed) e-mails. The digital implements of modernity have replaced the *crude* instruments of writing that belong to an era long since passed. So goes their argument.

Our inevitable descent into the undisciplined ease of modern communication is evident all around us. Just look at the assembly instructions for any contraption that you purchase nowadays. Too often, these instructions are opaque—that is, their meanings are obscured by unclear diction, syntax, or punctuation. The opacity of such instructions engenders great frustration and invites failure. Or consider an e-mail written in haste and replete with grammatical and mechanical errors—slop. But those examples implicate our worst writers—those who do not really care about good writing to begin with—not the professional expository writer who proudly publishes her words to the world.

And what about the beauty of expression that seems to have succumbed to expediency? There was a time when people wrote elegant and uplifting prose, beautiful to read. Long, flowing dissertations and essays on important topics, characterized by demonstrations of enormous vocabularies and nest upon nest of interpolated phrases. Ponderous treatises on politics, law, philosophy, ethics, and society that make modern readers swoon with appreciation for the great rhetorical prowess of their authors.

To be sure, people don't write like they used to, and in some ways, that's a good thing.

### ARE WE REALLY GETTING WORSE?

While studying animal law, I read many foundational legal works, books that explain the fundamental concepts of the U.S. system of government, concepts such as *liberty, right, property, privilege, and consent*. I read the ancient authors such as Plato and Aristotle, whose non-English works have been translated into English using modern terms and constructions. I also read the English authors such as Hobbes, Bentham, Paine, Smith, Hamilton, Madison, Locke, and Mill in their original English tongue, and I pored over the Constitution of the United States of America. I was interested in content, but being a professional writer and editor, I was continually distracted by a singular observation as I examined these fundamental works: We have become much clearer writers since the 18th century.

Such an observation based on a reading of the U.S. Constitution is certainly iconoclastic and may even seem heretical, especially when it comes from a citizen of the United States. Who can gainsay the rhetorical accomplishments of the

authors of the U.S. Constitution? George Mason, Edmund Randolph, George Washington, Elbridge Gerry, and, of course, James Madison.<sup>1</sup> They were, after all, the superlative commentators of their time. Highly educated, insightful, and by all means righteous in their purpose, they penned for us and our posterity one of the most influential, respected, and enduring documents in human history. However, here I look at the U.S. Constitution purely as an artifact of expository writing and thus as a starting point for a discussion about progress in our field.

To appreciate what we in the field of expository writing in general, and technical communication in particular, have accomplished over the entire period of American English—from the founding of the United States of America to today—I compare what the authors of the U.S. Constitution did with their resources with what we professional communicators do with our modern resources. Today, we are rich in resources, and we generally agree about what constitutes good writing. In fact, much of our progress in achieving clarity can be attributed to the evolution of prescriptions that guide expository writing, such as guidance on using punctuation. On the other hand, in the 18th century, there were fewer prescriptions in general and there was practically no guidance on punctuation. As expressed by Webster in America’s first major<sup>2</sup> grammar, “the doctrine of punctuation must necessarily be imperfect, and not reducible to precise rules” [1, p. 114]—a statement that we would flatly reject today. Eighteenth century writers indeed applied punctuation arbitrarily, capriciously using terminal punctuation, colons, semicolons, and commas. Today, we have an abundance of guidance—grammar books galore, eloquent style guides, and robust dictionaries, which are used regularly (and sometimes religiously) by professional writers and editors.

In this article, I fix the beginning of American English at the latter half of the 18th century because that is the period when the language of the colonists in America began to separate from British English and when America formed its identity. I analyze one work that I consider emblematic of that period, the Constitution of the United States (and its first ten amendments, the Bill of Rights), and I compare the ability of the writers of that time to clearly express their ideas to our ability to do the same in light of what we now know about the reading process, human factors, cognitive psychology, and technical discourse. However, I want to emphasize that in no way is this comparison a critique of the U.S. Constitution itself, which I consider a sacred document. For reasons that I explain shortly, examining the composition of the U.S. Constitution is illustrative. The point of this comparison is to demonstrate that the collective knowledge, resources, and tools

<sup>1</sup>Thomas Jefferson was busy serving as ambassador to France during the U.S. Constitutional Convention and did not directly contribute to the drafting of the U.S. Constitution.

<sup>2</sup>Before Webster completed his American grammar in 1785, Samuel Johnson, Thomas Byerly, and Abel Curtis published grammars in America (in 1765, 1773, and 1779, respectively). However, these grammars were neither widely used nor influential.

available to modern expository writers are more efficacious than those available to the authors of the U.S. Constitution, and therefore we are able to produce clearer prose today.

Based upon discussions with friends and colleagues, I anticipate an argument against using *any* 18th century writing to track progress in technical communication. The argument goes something like this: Eighteenth century American writers relied on the prevailing standards and conventions of their time. Therefore, what they wrote was perfectly fine for their contemporary audiences and should not be judged by current standards and conventions.

However, this argument unreasonably constrains the definition of *good writing*. It is similar to saying that “spear” tackling in football (leading with the helmet) was good sportsmanship because the old rules allowed it, even though the new rules don’t. If good writing is simply the adherence to contemporary standards and conventions, then there is little room or need for improvement, and the efforts of professional writers, scholars, and teachers to improve writing through innovations or recognitions of faulty guidance are in vain. The labors of legendary grammarians such as Fowler, Strunk, and Whrite would have no effect on good writing, and their intellectual enterprises in analyzing traditions in writing would be fanciful at best. The only improvements in writing would arise from linguistic accidents, changes that creep into our standards and conventions from shifts in common usage.

The Great Vowel Shift, the slow but persistent transformation of irregular verbs to regular verbs, and the introduction of new words (both technical and vernacular) are all examples of such linguistic accidents, and their effect on today’s English are not in dispute. However, accidental change is not how standards of English usage and expository writing evolve. According to Fisher, a scholar of Standard English, “language is standardized by government and business rather than by literary usage” [2, p. 9]. Standardized spelling, new forms of punctuation, new ways to organize prose, new rules of grammar and mechanics, elimination of ineffective rules, proscriptions against sexist language, and guidance on how to reconcile prescriptive (normative) grammar with “organic” grammar are all examples of purposeful attempts to change the standards and conventions of writing that would never have occurred had we accepted the status quo [3].

To accept the argument against evaluating temporally remote writings from a modern perspective is to deny the need for progress at all. Yet who can deny that American-English grammar of the 18th century greatly changed in the intervening years because of just such evaluation? Our standards and conventions—not the talents of writers—have greatly improved, not by accident but by the intentional and sometimes concerted efforts of professionals from many disciplines. It is this continuing evolution of our rules of grammar, mechanics, and style that this article celebrates.

### CASE STUDY: THE U.S. CONSTITUTION

The U.S. Constitution is an excellent candidate for a comparative analysis for three reasons:

- First, it is a seminal document in American history, “American” because it is post Revolution, one of the first representative documents in American history. One might say that it is concurrent with the birth of America, seeing as how it defines her. It represents some of the greatest writers of that golden age of letters, the most capable minds.
- Second, because there was so much at stake in drafting the U.S. Constitution, its authors were pressed into precision. One would imagine that the authors of the U.S. Constitution brought all of their erudition to bear upon the task—this would be the best work of their lives. After all, 55 of our brightest forefathers slaved over it for seven months, from February 21, 1787, to September 17, 1787. Therefore, it should be one of the brightest stars in the constellation of expository writing.
- Third, the authors had at their disposal a means by which they could conform the words of the U.S. Constitution to a grammar of *American English*, one of the first of its kind, written by the American-born Noah Webster. Because of his dissatisfaction with British textbooks of the day, Webster wrote *A Grammatical Institute of the English Language* between 1783 and 1785, a work in three volumes: a spelling book, a grammar book, and a reader. Thus the authors had the opportunity to bend their varieties of English toward a unified code of composition. Webster’s grammar addresses both grammar and mechanics, although he excerpted most of his discussion of punctuation from Robert Lowth, an English contemporary of Webster’s whose 1762 *A Short Introduction to English Grammar* greatly influenced American grammarians and writers.

Of course, one must ask: Is the U.S. Constitution a form of expository writing in general? And can that writing be compared to the type of writing that we now call technical communication? Any dictionary answers the first question about the meaning of *exposition*. The online version of *The American Heritage® Dictionary of the English Language* defines *exposition* as “a statement or rhetorical discourse intended to give information about or an explanation of difficult material” ([www.yourdictionary.com](http://www.yourdictionary.com)). Yes, then, we can rightly categorize the U.S. Constitution as expository writing, but categorizing it as *technical communication* is a bit more difficult.

Although some would argue that the term *technical communication* defies definition [4], some sort of working definition is necessary here to rightly categorize the U.S. Constitution as a form of technical communication. In its broadest sense, technical communication is “the process of translating what an

expert knows for an audience with a need to know” [5]. It is, to oversimplify, writing whose main purpose is to instruct rather than to entertain. The authors were undoubtedly the preeminent subject-matter experts of their day, and the members of their intended audience—those who need their knowledge—are the citizens of the United States of America, especially those citizens who take it upon themselves to serve in our government, legislate, enforce our laws, and adjudicate grievances.

Because the drafters had the recent revolution and birthing of a new nation on their minds, I doubt that much thought was given to the writing process (if the concept of “writing process” was even available at that time). They certainly didn’t draw the communication triangle on a chalkboard. Subject, purpose, and audience were as self-evident to these men as the rights declared so evocatively in the Declaration of Independence. The fundamental declarations within the U.S. Constitution were inspired by a desire to right the many wrongs inflicted upon the colonists, the “long train of abuses and usurpations” attributed to the king of Great Britain, George III. And to this end, the authors of the U.S. Constitution used the language of their peers, not in a “process of translating” what they knew for a less knowledgeable audience, but in an act of conveying highly organized information to equally educated minds. Although we can today rightly categorize the U.S. Constitution as a form of technical communication according to Barnum and Carliner’s definition [5], the intentional act of the authors in their day was not an act essentially of technical communication as we practice it today.

So how does the language of the U.S. Constitution of the United States compare to today’s exemplars of contemporary communication?<sup>3</sup> To be sure, it is a powerful manifesto, even beautiful and lyrical in places. But as a vessel of arguably the most important ideas ever collected, it flatly demonstrates this: We have learned a lot about clear technical communication since 1787.

### **Ambiguity and Opacity**

Although a thesaurus or dictionary may define *ambiguous* as being synonymous with *unclear*, I want to distinguish between those two terms because there are instances of *virtuous* ambiguity in the U.S. Constitution, whereas there are no instances of *virtuous* opacity. The term *ambiguous* means that a word or group of words is open to more than one interpretation. Many examples of ambiguous language exist in the U.S. Constitution. In fact, most of our celebrated rights are couched in broad and majestic language, such as “equal protection under the laws,” “due process,” and protection against “cruel and unusual punishment.” (My favorite ambiguous refrain is “from time to time.”) These terms have an elastic

<sup>3</sup>I suggest that just about any book published by Microsoft is an exemplar of contemporary technical communication, including its popular style guide, *The Microsoft Manual of Style for Technical Publications*.

quality, which is necessary for those who believe in a living U.S. Constitution. That is, these terms can be interpreted in the context of current events and exigencies, enabling our rights to expand in certain times (such as during peace and prosperity) and contract in others (such as during war against terrorism). Such ambiguity—whether or not it was intended by the authors—is considered a virtue by many U.S. Constitutional scholars.

Opacity, on the other hand, is an accidental—never virtuous—consequence of uninformed linguistic choices. Opacity retards and may even prevent *any* interpretation. Although I discovered no passages within the U.S. Constitution that were so composed as to *prevent* interpretation, there are many passages that were so composed as to *retard* interpretation. That is, many passages are so unclear that meaning results only from necessarily *studying* and *parsing* instead of merely *reading*. These passages have to be studied to be understood because they conflict with what we have come to discover as principles of clear communication.

### An Example of Opacity

A passage that illustrates opaque language, as opposed to ambiguous language, comes early in the U.S. Constitution. Article 1, Section 2, Clause 2 states, “No person shall be a Representative who shall not have attained the Age of twenty five Years, and been seven Years a Citizen of the United States, and who shall not, when elected, be an Inhabitant of the State in which he shall be chosen.” There’s a lot going on in this rather long sentence. However complex it may be, it is not ambiguous. The meaning, even though arriving at that meaning may be difficult, is unequivocal: To be elected as a representative in Congress, you must satisfy the following three requirements:

- You are at least 25 years old.
- You have been a citizen of the United States for at least seven years.
- You are an inhabitant of the state in which you will be elected *or* will be an inhabitant in that state by the time that you are elected.

However, the passage is *unclear*. It does conflict with some minor prescriptions of English composition that have evolved since 1787, such as its inclusion of sexist language (the consistent use of male pronouns) and arbitrary capitalization of words, but those clashes do not contribute to the opacity of the sentence. On the other hand, the sentence also conflicts with some fundamental prescriptions of good technical communication, which does result in opacity:

- Don’t use double negatives.
- Avoid long sentences.
- Make items in a series parallel.
- Use bullets (or at least semicolons) to separate complex items in a list, especially when those items contain internal punctuation.
- Avoid elegant variation.

Let's look at these conflicts one at a time.

### *Double Negatives*

The most egregious conflict is the use of a double negative, upon which the entire meaning of the passage hinges. Here, I emphasize the negative terms by italicizing them: “*No* person shall be a Representative who shall *not* have . . . and who shall *not* . . .” The reader's brain has to perform linguistic gymnastics to correctly interpret the intended meaning of the sentence, concluding that the negative constructions result in a positive meaning (a *must* rather than a *must not*).

### *Long Sentences*

The sentence may be *unnecessarily* long. I emphasize the word *unnecessarily* because a sentence may be long and yet also be clear because it is well-composed. For example, “The House That Jack Built,” a well-known nursery rhyme, concludes with a 71-word sentence with 13 relative clauses. Although this nursery rhyme would rate a low score by most readability formulas, it nevertheless remains in the canon of pre-school treasures. The point is this: Length in and of itself is not problematic. However, our sample from the U.S. Constitution is unnecessarily long not because of the number of words that it contains (45 words) but because it could easily be chunked into a bullet list introduced by a very short clause or recast for better parallelism. To include so much complex material in a single linear sentence is a linguistic choice that tends to retard the formation of meaning in the reader's mind. These hyperextended sentences, which are typical of 18th century expository writing, encompass all sorts of difficult structures.

### *Unparallel Items*

Although there are three distinct qualifications listed in the sentence, they are not parallel, which may result in some confusion. The three qualifications are:

- You must be at least 25 years old.
- You must have been a citizen of the United States for at least seven years.
- You must be an inhabitant of the state in which you will be elected by the time that you are elected.

However, the first two items are part of the same relative clause (“who shall not have”), whereas the third item is in a separate relative clause. This lack of parallelism, along with the comma after “twenty five Years,” causes a potentially faulty reading. The comma indicates a new item in the series (even though that item grammatically belongs with the previous item). Now, if the three items are assumed to be parallel, which is exactly what I assumed when I first read the passage, then the passage can be easily misread as meaning that “No person shall be a Representative who shall have . . . been seven Years a Citizen of the United



States”—not at all the intended meaning. (The omission of the qualifier “at least” before “seven Years” is another source of potential misreading.) Only by *studying* the passage can one fully understand its meaning.

### *Bullets*

The use of bullets relates to the two previous problems: the length of the sentence and the parallelism of the items listed in it. The series of items in the passage is complex and requires some sort of linguistic organization to facilitate reading. If items in a series contain commas and you use commas to separate those items, then you can imagine the potential for confusion. And that is what is going on in the sentence from Article 1, Section 2, Clause 2. The use of semicolons would help to delineate items in the series. An even better way to delineate the items is to place them in a bullet list, although I’m sure that some would argue that bullet lists would degrade the elegance of our U.S. Constitution. By breaking the sentences into smaller chunks, a bullet list would also decrease the intimidation factor of the long sentences.

### *Elegant Variation*

Using different terms to refer to the same concept introduces another source of potential misreading. Remember that society in America depends upon the words in our U.S. Constitution and the judicial interpretation of those words, and therefore I argue that those words cannot be over-analyzed. Each word should have been chosen to convey a specific, intended meaning, and consistency of usage is therefore vitally important. In this context of the need for consistency, any variation in terminology simply for the sake of elegance (thus the term *elegant variation*) is untenable.

The following excerpt of our example passage demonstrates a use of elegant variation that is not only unnecessary but also introduces a source of misreading: “. . . who shall not, when *elected*, be an Inhabitant of the State in which he shall be *chosen*.” The term *elect* means to select by *vote* for an office or for membership, whereas *choose* means to select from a number of possible alternatives. The difference is substantial: *elect* necessarily implies voting, whereas *choose* does not. Therefore, to *choose* can be confused with the concept of selecting by a legislature, which is exactly the concept that Article 1, Section 3, Clause 1 conveys when it uses the term *chosen*: “The Senate of the United States shall be composed of two Senators from each State, *chosen* by the Legislature thereof . . .” Here, the term *chosen* means that senators are *selected* by the legislators of their states, not elected by the citizens. (The 17th Amendment to the U.S. Constitution modified this U.S. Constitutional declaration by placing the *election* of senators in the hands of the people.)

John Locke, whose treatise on government inspired much of the ideology and language of the U.S. Constitution, differentiated between the concept of *electing*

and the concept of legislative *selection* [6, p. 69], but he used *chosen* and *elected* interchangeably. This infelicity of diction may have found its way into the vocabulary of the authors of the U.S. Constitution.

The reason that this elegant variation in Article 1, Section 2, Clause 2 does not rise to the more noble “virtuous ambiguity” is that it is unequivocal *in its context*. Because the terms *elected* and *chosen* are used in the same context and refer to the same thing in that context and because Clause 1 specifies that representatives are *chosen* “by the People of the several States,” the meaning of the terms *elected* and *chosen* is constrained.

However, this constraint does not mean that using the term *chosen* is clear. It certainly is not. Instantaneous confusion can occur during normal reading. If we consider that the U.S. Constitution requires *careful* reading, the reader must also assume a certain precision on the part of the authors. This assumption—that the authors used words consistently—is false and results in opacity.

### **Communication Weaknesses of the U.S. Constitution: Parsing Required**

The U.S. Constitution and its Bill of Rights dramatically illustrate our progress in clearly communicating technical concepts. Certain utilities of modern written communication were simply not available to the authors of the U.S. Constitution, such as our recently acquired (but certainly incomplete) understanding of the reading process. The fields of cognitive psychology and human factors didn’t exist in 1787, and, therefore, many of the concepts emerging from those disciplines and others were not available to the authors. They did not have a wide selection of style guides, grammars, writing encyclopedias, Web-based user groups, college writing courses, and dictionaries, from picket size to the 20-volume *Oxford English Dictionary* (which was not published until 1884, and then only in part). The authors of the U.S. Constitution relied wholly on their traditions, scarcely available prescriptions of grammar, their broad reading experiences, and their art—a facility with majestic words that we admire from afar these days.

Nevertheless, we may gain a greater appreciation for the accomplishments of our profession by tracing our progress in clear communication from the time of the drafting of the U.S. Constitution to today. While in the section above I pointed out some particular problems with a single passage, in this section I discuss the systemic problems with the composition of the U.S. Constitution,<sup>4</sup> including an opacity that is indicative of the writing of the 18th century in general. I discuss five communication problems that were pervasive at the time of the drafting of the U.S. Constitution but have since been remedied via modern

<sup>4</sup>I often abbreviate Article, Section, and Clause designations by using Arabic numerals separated by periods. Thus, Article 1, Section 2, Clause 2 would be abbreviated at “1.2.2.” A full copy of the U.S. Constitution and its Amendments can be downloaded at <http://www.archives.gov>.

prescriptions: parataxis, elegant variation, faulty parallelism, failure to chunk, and the lack of subjects and objects.

### *Parataxis*

*Parataxis* is joining together groups of words with punctuation but without a conjunctive. If you have read expository writing of the 18th century, then you may have noted the maddening and seemingly arbitrary insertion of commas (a form of *interpolated material*). Writers of the 18th century used punctuation arbitrarily—especially commas—for a good reason: They had very little guidance.

Webster freely admits that punctuation was “imperfect, and not reducible to precise rules” in his day [1, p. 114]. Punctuation was used primarily to indicate pauses in speech (or “rests” in reading). Webster discusses four primary punctuation marks—the period, colon, semicolon, and comma—and assigns a pause duration (“proportional quantity of time”) to each one [1, p. 114]:

- Period: 6 units
- Colon: 4 units
- Semicolon: 2 units
- Comma: 1 unit

Other forms of punctuation “denote a different modulation of the voice in correspondence with the sense” [1, p. 119]. The interrogative point and exclamation point “mark an elevation of the voice,” whereas the parenthesis “marks a moderate depression of the voice, with a pause greater than a comma” [1, p. 120]. Webster does not address the em-dash, hyphen, apostrophe, quotation mark, asterisk, or any other form of punctuation that he himself uses in his grammar.

Today, writers are instructed to use punctuation to indicate syntactic structures rather than phonological ones. Although the authors of the U.S. Constitution considered punctuation as pauses or rests, we see them as meaningful separators. Additionally, we have developed precise rules to conform the beneficial use of punctuation, as well as proscriptions against bootless uses. “Don’t place a comma between a subject and its verb or between a verb and its object” is a universally accepted prescription nowadays. Because the authors of the U.S. Constitution had no such guidance on the use of commas, they violated this rule repeatedly. An even more troubling type of intervening punctuation is punctuation whose function the reader cannot determine at all, so it not only becomes a nuisance but also prevents the fluid processing of written words.

When we read fluently, we store information picked up by the eye in short-term memory. But our short-term memories are limited (I discuss this limitation in “Failure to Chunk” below). To properly process written words, groups of words must be collapsed into a single meaning, which takes up a single unit of memory. This process is called *phrase collapsing*.

The problem with interpolated material in general and intervening commas in particular is that they prevent phrases from being closed. The individual words in the unclosed phrases take up memory, and the reader is forced to read, re-read, and perhaps study to parse a sentence in order to create meaning.

The U.S. Constitution is replete with intervening commas. Notable examples are 1.5.4, 1.8.16, 3.1, and 3.3.1. However, the example that I explicate here comes from the Bill of Rights, specifically the 2nd Amendment, which states:

A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.

Before I set about to show how parataxis strangles this sentence, I must explain its savior: hypotaxis. Whereas parataxis is the joining together of phrases without the benefit of meaningful connectives, hypotaxis is the joining together of phrases with connectives that declare the nature of linguistic relationships, usually in the form of dependent clauses. In hypotaxis, the meaning that commas cannot convey is clearly conveyed through meaningful conjunctions—coordinating conjunctions, subordinating conjunctions, conjunctive adverbs, and so on. They make explicit what commas weakly imply.

In a paratactic construction, the reader is left to guess about the nature of the relationship between phrases conjoined by commas. Thus, the example from the 2nd Amendment presents a problem to the reader: What are the relationships between the four elements that are separated by three commas? On first reading, the passage can be construed in at least the following two ways:

1. Two things shall not be infringed: a) A well regulated Militia (because it is necessary to the security of a free State) *and* b) the right of the people to keep and bear Arms.
2. *Because* a well regulated Militia is necessary to the security of a free State, the right of the people to keep and bear Arms shall not be infringed.

Gun advocates, such as the National Rifle Association, prefer the first (paratactic) interpretation because it does not tie the right of the people to keep and bear arms to maintaining a well regulated militia. However, studying the passage results in only one reasonable interpretation: the second (hypotactic) one. Whereas the original passage incorporates commas to join elements, the second interpretation subordinates one element to another and expresses the nature of their relationship: One element causes the need for the other element. That is, the *because* clause answers the question: Why do people need to keep and bear arms? Hypotaxis saves the 2nd Amendment from the quagmire of commas so characteristic of 18th century paratactic constructions. Since the 18th century, American writers have moved steadily away from parataxis to hypotaxis. (In fact, one may reasonably argue that journalists have overcompensated by waging a war against the comma.)

*Elegant Variation*

*Elegant variation* is a term coined by Henry W. Fowler for an attempt to use synonyms to animate prose, emphasizing “prettiness” over clarity [7], although here I use the term to include accidental variations. Elegant variation is a type of imprecision that invites confusion in technical documents. In creative writing, the author and reader may prefer synonyms to the dullness of repetition, but in technical documents, consistency is a virtue. Although keeping track of your diction is work, it is work that pays off for the reader—the more that the author works, the less that the reader has to. This reader-oriented approach is a staple of our modern discipline of technical communication.

People who deride a dedication to consistency often inappropriately quote a now-famous epigram written by Emerson, who opined that “a foolish consistency is the hobgoblin of little minds, adored by little statesmen and philosophers and divines” [8, p. 35]. But Emerson was talking about declaring philosophical opinions, not principles of writing. Consistency of usage is essential to clear technical communication. Although elegant variation is desirable in many forms of writing that we read for enjoyment, it is detrimental to technical documents, such as expository essays, philosophical treatises, textbooks, statutes, and constitutions.

In technical contexts, the meanings of concepts are interrelated. That is, the reader’s understanding of one concept may depend on her understanding of one or several other concepts. This is nowhere more true than in the U.S. Constitution, wherein the articles and sections fit together like pieces of a puzzle. A word used to refer to a concept in one context should be transferable to refer to the same concept in a different context.

One theory of discourse that reveals the true significance of consistent diction is the theme/rheme theory (see [9]). In theme/rheme, a topic is clearly stated (theme), and commentary on that topic follows immediately (rheme). A new topic is introduced in the rheme, which is then carried forward into the next theme. In this way, terms are *given* in one context and used to discuss something *new* in another (thus the term *given/new* is often used to describe this method of discourse, but that term is usually assigned to speech/hearing rather than writing/reading). This transfer of concepts depends upon a strict consistency of diction. Elegant variation corrupts the apparent interrelationships between concepts during fluid reading. Although meaning can be teased out by concentrated parsing, fluid reading is nevertheless inhibited.

Another important reason for consistent diction is the problem of translating a work from one language to another, an important lesson that we have learned since the 18th century. Although translation of the U.S. Constitution was not at all a concern of the authors, we have learned that just about anything written in English is subject to translation. Today, in fact, translation is such a great concern of corporate America (the standard bearer of Standard English) that in the 1960s, the

Caterpillar Tractor Company developed Simplified English to prevent elegant variation from confounding the translation process. Called “Caterpillar Fundamental English,” it limited the vocabulary of writers to 800 words or so. Because synonyms are eliminated, elegant variation is entirely prevented.

Throughout the U.S. Constitution, the authors used the terms *choose*, *elect*, and *select* interchangeably when talking about three different concepts: 1) the ascension to public office through public voting (voting by the citizens or by electors); 2) the ascension to public office through legislative agreement; and 3) the ascension to public office by executive appointment. To solidify the distinction between these three concepts, it is better to use a single, separate term for each concept. For example, the term *elect* should be limited to discussion of concept (1), *select* for concept (2), and *choose* for concept (3). Other instances of elegant variation include (emphasis added):

- 1.2.3 and 1.9.4: *enumeration* and *census*:  
**1.2.3:** “The actual *Enumeration* shall be made within three Years after the first Meeting of the Congress of the United States. . . .”  
**1.9.4:** “No Capitation, or other direct, Tax shall be laid, unless in Proportion to the *Census* or *Enumeration* herein before directed to be taken.”
- 1.3.6 and 1.3.7: *person* and *party*:  
**1.3.6:** “. . . no *Person* shall be convicted without the Concurrence of two thirds of the Members present.”  
**1.3.7:** “. . . the *Party* convicted shall nevertheless be liable and subject to Indictment, Trial, Judgment and Punishment, according to Law.”
- 1.4.1: *prescription* and *regulation*:  
 “The Times, Places and Manner of holding Elections for Senators and Representatives, shall be *prescribed* in each State by the Legislature thereof; but the Congress may at any time by Law make or alter such *Regulations*. . . .”

### *Faulty Parallelism*

Eighteenth century writers liked to make lists just as much as we do. Readers differentiate items in a series—whether they are clauses, phrases, or simply single words—by the punctuation marks that separate them and by their parallelism. A list of three elements expressed as two prepositional phrases and a clause does not conform to the concept of group membership.

Group membership is an elementary concept. Some argue that we interpret the world through categories (see [10]). Therefore, recognizing group membership is important to understanding. Spotting something that “just doesn’t belong” in a group can trip the reader up. *Running to the store, buy a carton of eggs, and omelets*, although logically related, are not grammatically parallel and therefore do not fully constitute a group of *actions*. On the other hand, *running to the store,*

*buying a carton of eggs*, and *fixing omelets* are parallel in construction and easily enough interpreted as belonging to the same group of actions.

Parallelism is important for fluid reading. When people read, they unconsciously make predictions about the functions and meanings of words before they actually read those words. Looking forward is the lynchpin of fluid reading. When a linguistic construction denies the reader's predictions about how succeeding words function in a sentence, the reader experiences what linguists call a *garden-path sentence*. In a physical garden path, the traveler walks along the path until it ends; then, she must return the way she came. In a figurative garden-path sentence, a reader is taken "up the garden path" to a dead end, only to have to retrace her steps to figure out what went wrong with her predictions. How did the misreading occur? What does this sentence really mean? Ensuring the parallelism of items in a series helps to ensure accurate reader predictions.

The U.S. Constitution includes both types of non-parallel lists: grammatically faulty and mechanically faulty. Article 1, Section 2, Clause 2 (already discussed) and Article 1, Section 3, Clause 3 are both prime examples of grammatically faulty lists (see discussion under "Ambiguity and Opacity"). The 6th Amendment, quoted below, is an example of a list that is both grammatically and mechanically faulty:

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the Assistance of Counsel for his defence.

There are five items in this list, all of which modify "right." First, let's look at the list grammatically. When we read "right," we expect something like a prepositional phrase beginning with "to" or an infinitive phrase beginning with "to," and that's what we get. However, the first item is a prepositional phrase, whereas the next four are infinitive phrases. The first item in the list should match the infinitive form of the other items in the list: "to have . . .," as in "the right to have a speedy and public trial."

Now, let's look at the question of mechanics—a much more egregious problem here than the grammatical one. The first and second items are separated by a comma and a coordinating conjunction, as are the fourth and fifth items. However, the second and third items, as well as the third and fourth items, are separated by a semicolon. This inconsistent use of a separator results in opacity. On first reading, this Amendment is intimidating and difficult to follow, and the faulty punctuation contributes to this difficulty.

*Failure to Chunk*

The U.S. Constitution is essentially a collection of lists. It delineates powers and limitations of powers in linear text. A problem arises when commas are used to separate items in a list when one or more of those items contain commas, as does our original example (Article 1, Section 2, Clause 2).

Of course, one may argue that because the U.S. Constitution was handwritten (primarily penned in the flowing script of Gouverneur Morris of New York), it did not lend itself to chunking the way that modern typeset documents do. However, the U.S. Constitution does contain elements of chunking, although it was not systematically employed by Morris. For example, the long list of powers delegated to Congress in Article 1, Section 8 is chunked into infinitive phrases separated by both new paragraphs and semicolons. This isolated employment of a quasi-bullet list indicates that a primitive concept of chunking was available to the authors but was not applied in other cases where comprehension would be enhanced by bulleting.

But why is chunking so important for fluid reading? You may have heard of “the magic number seven, plus or minus two.” It’s the reason that we have seven-digit phone numbers—a well-known type of chunking. A research psychologist named George Miller reviewed many experiments on short-term memory and found an interesting common thread: most of these experiments indicated a limit of seven *chunks* of information, on average, that our short-term memories are able to keep in an active state [11]. Although Miller’s precise conclusions are subject to debate, we can agree in principle that there is a limit to what we can retain in short-term memory when we concentrate and try to remember things. However, when we read, our goal is not to *memorize* but to *make sense*. Therefore, we have to leave a little space for processing in our short-term memories.

One way to accommodate the reader’s limited storage space is to chunk information. *Chunking* is the process of dividing information in a phrase, sentence, or any collection of words into manageable and meaningful elements (chunks). All sorts of information can be chunked. For example, long telephone numbers are chunked into smaller groups of numbers separated by hyphens. Linear text in modern technical documents is chunked by conventions such as chapter titles, section titles, and heads, each of which “prepares” the reader’s memory. Another common method of chunking is to break items in a series into a parallel bullet list. Each item in the bullet list is discrete and can therefore be transformed into a single chunk of information.

The U.S. Constitution could certainly benefit from our current knowledge of information mapping, which incorporates the concept of chunking. A significant improvement would come in the form of bullet lists where commas and semicolons now separate complex items in series. Article 1, Section 10, Clause 3 is a prime example of a list that would benefit from some sort of chunking:



No State shall, without the Consent of Congress, lay any Duty of Tonnage, keep Troops, or Ships of War in time of Peace, enter into any Agreement or Compact with another State, or with a foreign Power, or engage in War, unless actually invaded, or in such imminent Danger as will not admit of delay.

The elements in the list contain commas, and yet the elements are separated by commas, an invitation to misreading. The authors' options for differentiating the items—besides using commas—included the use of semicolons, numbers (or letters) in parentheses, a bullet list, or indenting. Below are versions of Article 1, Section 10, Clause 3 revised by using these four methods of chunking.

*Semicolons* — No State shall, without the Consent of Congress, lay any Duty of Tonnage; keep Troops, or Ships of War in time of Peace; enter into any Agreement or Compact with another State, or with a foreign Power; or engage in War, unless actually invaded, or in such imminent Danger as will not admit of delay.

*Numbers or Letters* — No State shall, without the Consent of Congress, 1) lay any Duty of Tonnage, 2) keep Troops, or Ships of War in time of Peace, 3) enter into any Agreement or Compact with another State, or with a foreign Power, or 4) engage in War, unless actually invaded, or in such imminent Danger as will not admit of delay.

*Bullet List* — No State shall, without the consent of Congress:

- Lay any Duty of Tonnage
- Keep Troops, or Ships of War in time of Peace
- Enter into any Agreement or Compact with another State, or with a foreign Power
- Engage in War, unless actually invaded, or in such imminent Danger as will not admit of delay.

*Indenting* —

No State shall, without the Consent of Congress,  
 lay any Duty of Tonnage,  
 keep Troops, or Ships of War in time of Peace,  
 enter into any Agreement or Compact with another State, or with a foreign  
 Power, or  
 engage in War, unless actually invaded, or in such imminent Danger as will  
 not admit of delay.

Any of these methods of list making is an improvement over linear sentences, but today, technical communicators favor the bullet list, which was certainly not a convention in the 18th century.

*Lack of Subjects and Objects*

Many times, subjects and objects can be inferred. For example, in the previous sentence, I omitted the subject because the context clearly indicates that I am talking about *readers*—that is, many times, readers can infer subjects and objects. In this case, the passive voice is acceptable. However, in a document as critical as the U.S. Constitution, one would think that every subject and every object that is not readily inferable would be specified. One would be wrong.

Today, undereducated English teachers hand out proscriptions against the passive voice like candy on Halloween. It's tradition. However, research on passive versus active voice is contradictory or inconclusive. For example, Spyridakis and Isakson point out four studies on the effect of passive voice on reader response—two showed that active voice did facilitate recall, and two showed that it did not [12].

Some modern authorities of style suggest the proper use of the passive voice in certain circumstances, including:

- The object (receiver of the action) is actually the topic of the sentence.
- The action is more important than the actor.
- The actor is unknown.
- The actor is insignificant.
- The actor is known, but the repetition of the actor would distract the reader from the intended focus.

However, when there is no clear reason to omit the agent in a sentence, then there is no good reason to prefer the passive construction over the active. The same can be said of omitting the object of a verb or nominalized verb.

Examples of passive constructions that would be improved by indicating the agent include:

- 1.5.1: “. . . a smaller Number [of House or Senate members] . . . may be authorized to compel the Attendance of absent Members. . .” Authorized by whom? Or what? In this case, Congress has the authority to authorize itself, which is a strange way of putting it. The intended meaning is that congress may compel absent members to attend a session.
- 1.5.1: “. . . for any Speech or Debate in either House, they [senators and representatives] shall not be questioned in any other Place [than their respective houses].” The meaning of this example is a mystery because obviously senators and representatives can be (and often are) questioned in places other than their respective houses. One needs only to turn on any Sunday morning talk show to see a parade of politicians lapping up questions

that, on first reading, would seem to be prohibited by the U.S. Constitution. The meaning of this passage depends on who is doing the questioning.

Examples of omitted objects of nominalized verbs include:

- 1.2.5: “The House of Representatives . . . shall have the sole Power of Impeachment.” Impeachment of whom? We don’t find out until much later that impeachment is limited to “The President, Vice President and all civil Officers of the United States” (Article 3, Section 2, Clause 3).
- 1.8.11: “[Congress shall have the Power To] make Rules concerning Captures on Land and Water.” One understands from the context that “Captures” refers to “captured enemies” during war (prisoners of war).

## CONCLUSION

Much of what is considered majestic and beautiful in the language of 18th-century expository writers would today be considered deadwood, what Richard Lanham calls “lard factor” [13]. The U.S. Constitution is a document that was designed to be read so that readers can learn to do something (run our government). “Reading to learn to do,” as described by Redish [14], places a high premium on clarity, and deadwood may frustrate that goal.

Our professionally written documents are clearer now because we have so much guidance and agreement, whereas authors in the 18th century were not as constrained, and their usage tended to vary widely not only from author to author but also within a single author’s work. This irregular application of English grammar and mechanics during the 18th century confounds the reading process. The use of punctuation, for example, was arbitrary in many cases, which retards fluid reading.

Today, English usage is much more standard (although, I admit, not wholly so). We are not smarter these days, but we are more knowledgeable about the reading process and the way that readers use the information that they take in. The fields of technical communication, linguistics, human factors, and cognitive psychology (among others) inform the modern writer, greatly improving the clarity of professionally written expository documents. An unbiased comparative study of 18th century prose and modern prose simply does not support complaints about the demise of writing skills in America. Certainly, we can all dredge up examples of bad technical writing by modern authors, but a fair comparison of 18th century exemplars to modern exemplars reveals a significant advance in clarity, an advance that technical communicators can be proud of.

## REFERENCES

1. N. Webster, *A Grammatical Institute of the English Language: Part II*, Facsimile, Delmar, Scholars’ Facsimiles & Reprints, New York, New York [1800], 1980.

2. J. H. Fisher, *The Emergence of Standard English*, The University Press of Kentucky, Lexington, Kentucky, 1996.
3. B. Connatser, Reconsidering Some Prescriptive Rules of Grammar and Composition, *Technical Communication*, 51:2, pp. 264-275, 2004.
4. J. Allen, The Case Against Defining Technical Writing, *Journal of Business and Technical Communication*, 4, pp. 68-77, 1990.
5. C. M. Barnum and S. Carliner, *Techniques for Technical Communicators*, Allyn and Bacon, Needham Heights, Massachusetts, 1993.
6. J. Locke, *Second Treatise of Government*, Hackett Publishing, Indianapolis, Indiana, 1980.
7. H. Fowler, *A Dictionary of Modern English Usage*, 2nd rev., Oxford University Press, Oxford, England, 1983.
8. R. W. Emerson, Self-Reliance, in *Essays: First and Second Series*, Vintage Books, New York, New York, 1990.
9. M. Halliday, *An Introduction to Functional Grammar*, 2nd ed., Edward Arnold, London, England, 1994.
10. G. Lakoff, *Women, Fire, and Dangerous Things*, University of Chicago Press, Chicago, Illinois, 1990.
11. G. Miller, The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information, *The Psychological Review*, 63, pp. 81-97, 1956.
12. J. H. Spyridakis and C. S. Isakson, The Influence of Text Factors on Readers, *Proceedings of the 45th Annual Conference of the Society for Technical Communication*, 1998.
13. R. Lanham, *Revising Prose*, 3rd ed., Macmillan, New York, New York, 1992.
14. J. Redish, Reading to Learn to Do, *The Technical Writing Teacher*, 15, pp. 223-233, 1988.

### Other Articles On Communication By This Author

- Connatser, B. R. Transforming Tribal Knowledge into Written Instructions, *Intercom*, April 2006.
- Connatser, B. R. Coping with Wordslaughter and the 'Good Enough' Syndrome, *Intercom*, January 2004.
- Connatser, B. R. Reconsidering Some Prescriptive Rules of Grammar and Composition, *Technical Communication*, 51:2, May 2004.
- Connatser, B. R. The Great Pyramid War in *Writing a Professional Life: Stories of Technical Communicators On and Off the Job*, Allyn and Bacon, Boston, 2000.
- Connatser, B. R. Conducting Reading Research in Technical Communication, *Reader: Essays in Reader-Oriented Theory, Criticism, and Pedagogy*, 42(Fall), 1999.
- Connatser, B. R. Last Rites for Readability Formulas, *Journal of Technical Writing and Communication*, 29:3, 1999.
- Connatser, B. R. The Evolution of the Speech Instinct in Silent Reading: Implications for Technical Communication, *Journal of Technical Writing and Communication*, 27:3, 1997.
- Connatser, B. R. A Phonological Reading Model for Technical Communicators, *Journal of Technical Writing and Communication*, 27:1, 1997.
- Connatser, B. R. The Things Our Readers Do, *Intercom*, December 1996.

- Connatser, B. R. Photography Basics for Technical Communicators: Part 1: Equipping a Communication Department, *Intercom*, April 1996.
- Connatser, B. R. Photography Basics for Technical Communicators: Part 2: Taking Technical Photographs, *Intercom*, May 1996.
- Connatser, B. R. Setting the Context for Understanding, *Technical Communication*, 41:2, 1994.

Direct reprint requests to:

Bradford R. Connatser  
843 Sterchi Park Way  
Knoxville, TN 37912  
e-mail: [bconnatser@comcast.net](mailto:bconnatser@comcast.net)