Good Writing Style

Professional Communications

From *The Elements of Style* by Oliver Strunk and E. B. White
and
*Eats, Shoots & Leaves* by Lynne Truss
and
*Writing for Computer Science* by Justin Zobel
How to Write Good

1. Avoid Alliteration. Always.
2. Prepositions are not words to end sentences with.
3. Avoid clichés like the plague. They’re old hat.
4. Comparisons are as bad as clichés.
5. Be more or less specific.
6. Writers should never generalize.

Seven: Be consistent.

8. Don’t be redundant and don’t use more words than necessary because it’s highly superfluous.
9. Who needs rhetorical questions?
10. Exaggeration is a billion times worse than understatement.
“Taste and common sense are more important than any rules; you put in stops to help your readers to understand you, not to please grammarians.”

Ernest Gowers

*The Complete Plain Words*
“The Art of Pointing”

Consider the difference between the following two interpretations of a Biblical passage (Luke 23:43):

“Verily, I say unto thee, this day thou shalt be with me in Paradise.”

“Verily I say unto thee this day, thou shalt be with me in Paradise.”
Don’t let worry kill you. Let the Church help.
Thursday night – potluck supper. Prayer and medication to follow.
Remember in prayer the many who are sick of our church and community.
For those of you who have children and don’t know it, we have a nursery downstairs.
The rosebud on the altar this morning is to announce the birth of David Alan Belzer, the sin of Rev. and Mrs. Julius Belzer.

From http://cartoonstudio.wordpress.com/2009/07/01/church-bulletin-board-typos/
Typos Seen on Church Bulletins

• This afternoon there will be a meeting in the South and North ends of the church. Children will be baptized at both ends.
• Tuesday at 4pm there will be an ice cream social. All ladies giving milk will please come early.
• Pastor is on vacation. Massages can be given to church secretary.
• Thursday at 5pm there will be a meeting of the Little Mothers Club. All wishing to become Little Mothers please see the minister in his private study.
• This being Easter Sunday, we will ask Mrs. Lewis to come forward and lay an egg on the altar.

From http://cartoonstudio.wordpress.com/2009/07/01/church-bulletin-board-typos/
Apostrophes

• Charles's friend or Charles’ friend
• ... the students’ poems ...
• ... the witch's malice ...
• ... one's rights ...
• ... somebody else's umbrella
• It's a wise dog that scratches its own fleas.
• The dog went into its house.
Commas

• Use the minimum number of commas to avoid ambiguity, but don’t omit necessary commas
  – Incorrect:
    
    When using disk tree algorithms were found to be particularly poor.
  
  – Correct:
    
    When using disk, tree algorithms were found to be particularly poor.
Commas

• Do not use commas with restrictive forms:
  – Billy the Kid
  – The novelist Jane Austen
  – William the Conqueror
  – The poet Sappho
  – James Wright Jr.
  – People who live in glass houses shouldn't throw stones.
Commas

• Use a comma before “but”, but not before “and” (except when “and” connects a list):
  – I have heard the arguments, but I am still unconvinced.
  – He has several years of experience and is thoroughly competent.
Semicolons and Colons

• A semicolon is used to separate a long sentence or to set off part of a sentence for emphasis:
  – *In theory, the algorithm would be more efficient with an array; in practice a tree is preferable.*
  – *In theory, the algorithm would be more efficient with an array, but in practice a tree is preferable.*
Semicolons and Colons

• A colon is used to join related statements or to introduce a list
  – Incorrect:
    \[\text{Huffman coding requires: accumulation of distinct symbols, construction of the tree, and compression of the data.}\]
  – Correct:
    \[\text{Huffman coding requires three phases: accumulation of distinct symbols, construction of the tree, and compression of the data.}\]
Semicolons and Colons

• Consider:
  – Tom locked himself in the shed. England lost to Argentina.
  – Tom locked himself in the shed; England lost to Argentina.
  – Tom locked himself in the shed: England lost to Argentina.
Dashes

• Use a dash to set off an abrupt break or interruption or to announce a long appositive or summary
  – *His first thought on getting out of bed — if he had any thought at all — was to get back in again.*
  – *The rear axle began to make a noise — a grinding, chattering, teeth-gritting rasp.*

• Consider:
  – *He was – I still can’t believe this – trying to climb in the window.*
  – *He was (I still can’t believe this) trying to climb in the window.*
Hyphenation

• Many compound words, such as *website*, were originally written as two separate words, *web site*

• When the combination became common enough, it was hyphenated, as in *web-site*

• Eventually the hyphen was dropped to give the final form, *website*
Hyphenation

• Consider:
  – extra-marital sex versus extra marital sex
  – re-formed rock band versus reformed rock band
  – fine tooth-comb versus fine-tooth comb
  – de-ice instead of deice
  – He has a two- and three-year old at home
  – 18th-century novel and seven-o’clock train
Capitalization

• Only proper names are capitalized
• If a name is in common use, it should be in lower-case
  – Incorrect
    
        ... the Extensible Hashing method ...
  – Correct
    
        ... the extensible hashing method ...
Capitalization

• In technical writing it is usual to capitalize names that refer to specific entities in the document

  The proof proceeds from Theorem 3.1 ...

  As shown in Figure 4 ...

  The full analysis is given in Section 2 ...
Punctuation in Quotations

• Place a punctuation mark within a quotation only if it was used in the original text (such as when a complete sentence is being quoted)

_Crosley (2000) argues that “open sets are of insufficient power”, but Davies (2002) disagrees: “If a concept is interesting, open sets can express it.”_
Punctuation in Citations

• Citations should not be considered part of the text of the sentence
  – Incorrect:
    • *In [2] such cases are shown to be rare.*
    • *In (Wilson, 1984) such cases are shown to be rare.*
  – Correct:
    • *Such cases have been shown to be rare [2].*
    • *Such cases have been shown to be rare (Wilson, 1984).*
    • *Wilson [2] has shown that such cases are rare.*
    • *Wilson (1984) has shown that such cases are rare.*
Punctuation in Citations

• To avoid ambiguity, the citation should be close to the material that it relates to

  – Incorrect:

    The original algorithm has asymptotic complexity $O(n^2)$ but low memory usage, so it is not entirely superseded by Ahlberg’s approach, which although of complexity $O(n \log n)$, requires a large in-memory array (Ahlberg 1996, Keele 1989).

  – Correct:

    The original algorithm has asymptotic complexity $O(n^2)$ but low memory usage (Keele 1989). Thus, it is not entirely superseded by Ahlberg’s approach (Ahlberg 1996), which although of complexity $O(n \log n)$, requires a large in-memory array.
Pronouns

• Examples of correct usage:
  – *Will Jane or he be hired, do you think?*
  – *The culprit, it turned out, was he.*
  – *We heavy eaters would rather walk than ride.*
  – *Who knocks?*
  – *Give this work to whoever looks idle.*
  – *The ranger offered Shirley and him some advice on campsites.*
  – *They came to meet the Baldwins and us.*
  – *Let's talk it over between us, then, you and me.*
  – *Whom should I ask?*
Pronouns

• Incorrect:
  Virgil Soames is the candidate whom we think will win.

• Correct:
  Virgil Soames is the candidate who we think will win.

[We think he will win.]
Pronouns

• Incorrect:
  Virgil Soames is the candidate who we hope to elect.

• Correct:
  Virgil Soames is the candidate whom we hope to elect.

  [We hope to elect him.]
Pronouns

• Incorrect:
  \[ \textit{Sandy writes better than me.} \]

• Correct:
  \[ \textit{Sandy writes better than I.} \]
Pronouns

• Which is correct?
  
  *I think Tom admires Jessica more than me.*
  
  *I think Tom admires Jessica more than I.*

• Which is correct?
  
  *Sara loves cake more than me.*
  
  *Sara loves cake more than I.*
Pronouns

• Consider:

   *Do you mind me asking a question?*

• This means:

   *Do you mind me (as opposed to other members of the group) asking a question?*
Pronouns

• Consider:

  *Do you mind my asking a question?*

• This means:

  *Do you mind a question being asked at all?*
Who is the Subject?

• Revise:

Walking slowly down the road, he saw a woman accompanied by three children.

• Better:

He saw a woman, accompanied by three children, walking slowly down the road.
Who is the Subject?

• Revise:

  On arriving in Chicago, his friends met him at the station.

• Better:

  On arriving in Chicago, he was met at the station by his friends.
Who is the Subject?

• Revise:
  
  Being in a dilapidated condition, I was able to buy the house very cheaply.

• Better:
  
  I was able to buy the house very cheaply because it was in a dilapidated condition.
Who is the Subject?

• Revise:
  
  Wondering irresolutely what to do next, the clock struck twelve.

• Better:
  
  The clock struck twelve while he wondered irresolutely what to do next.
Use the Active Voice

• Revise:

  The following theorem can now be proved.

• Better:

  We can now prove the following theorem.
Use the Active Voice

• Revise:

Tree structures can be utilized for dynamic storage of terms.

• Better:

Terms can be stored in dynamic tree structures.
Use the Active Voice

• Revise:

  *Local packet transmission was performed to test error rates.*

• Better:

  *Local packet transmission tested error rates.*
The Royal “We”

- The use of “we” can allow some kinds of statements to be simplified
  - *We show ...* instead of *This paper shows that ...*

- In some cases the use of “we” is wrong
  - Incorrect:
    - *When we conducted the experiment it showed that the conjecture was correct.*
  
  - Correct:
    - *The experiment showed that the conjecture was correct.*
Be Concrete, Not Vague

• Revise:
  Amelioration can lead to large savings.

• Better:
  Amelioration led to savings of 12% - 13% in our experiments.

• Revise:
  The status of the system is such that a number of components are now able to be operated.

• Better:
  Several of the system’s components are now working.
Be Concrete, Not Vague

• Revise:

  *With respect to the relative costs, the features of main memory mean that with regard to systems today, disk has greater associated expense for the elapsed time requirements of tasks involving access to stored data.*

• Better:

  *Main memory can be accessed more quickly than disk.*
Avoid Ambiguity

• Revise:  
  *The compiler did not accept the program because it contained errors.*

• Better:  
  *The program did not compile.*

• Revise:  
  *In addition to skiplists, we used trees. They are superior because they are slow in some circumstances, but have lower asymptotic costs.*

• Better:  
  *In addition to skiplists, we used trees. Skiplists are superior because, although slow in some circumstances, they have lower asymptotic costs.*
Tense

• In technical and scientific writing, most of the text is in the present or past tense
  – Present tense is used for eternal truths and for statements about the text itself:
    
    *The algorithm has complexity $O(n)$.*
    
    *Related issues are discussed below.*
  
  – Past tense is used for describing work and outcomes:
    
    *The hypothesis was tested with the following experiment.*
  
  – Sometimes present and past tense are used together:
    
    *Although theory suggests that the Klein algorithm has asymptotic complexity $O(n^2)$, our experiments showed a trend of $O(n)$.*
Parallel Construction

• Revise:
  
  *Access is fast, but at the expense of slow update.*

• Better:

  *Access is fast, but update is slow.*
Parallel Construction

• Revise:

   *For real-time response there should be sufficient memory, parallel disk arrays should be used, and fast processors.*

• Better:

   *Real-time response requires sufficient memory, parallel disk arrays, and fast processors.*
Parallel Construction

• Revise:

The performance gains are the result of tuning the low-level code used for data access and improved interface design.

• Better:

The performance gains are the result of tuning the low-level code used for data access and of improving interface design.
Choice of Words

• Use short, direct words rather than long, circumlocutionary ones
  – begin rather than initiate
  – first and second rather firstly and secondly
  – part rather than component
  – use rather than utilize
Choice of Words

• Overuse of qualifiers results in text that is lame

• Revise:
  \(\text{It is perhaps possible that the algorithm might fail on unusual input.}\)

• Better:
  \(\text{The algorithm might fail on unusual input.}\)

• Revise:
  \(\text{We are planning to consider possible options for extending our results.}\)

• Better:
  \(\text{We are considering how to extend our results.}\)
Choice of Words

• Revise:
  
  *There is very little advantage to the networked approach.*

• Better:
  
  *There is little advantage to the networked approach.*

• Revise:
  
  *The standard method is simply too slow.*

• Better:
  
  *The standard method is too slow.*

• Other words to eliminate:
  
  *totally, completely, truly, highly, usually, accordingly, certainly, necessarily, somewhat*
Choice of Words

• Do not make excessive claims about your own work
  – Unacceptable:
    
    Our method is an ideal solution to these problems.
    
    Our work is remarkable.

  – Claims about your own work should be fully supportable and unarguable
Misused Words

• Use *that* in preference to *which*
  – Revise: *There is one method which is acceptable.*
  – Better: *There is one method that is acceptable.*
  – Acceptable: *There are three options, of which only one is acceptable.*
Misused Words

- Use *less* for continuous quantities and *fewer* for discrete quantities
  - The algorithm used less memory.
  - There were fewer errors.

- Use *effect* to indicate the consequence of an action and use *affect* to indicate influence
  - The effect of an action is to affect an outcome.
Misused Words

- *Fast* is an adjective that means swift or able to move rapidly. *Quickly* is an adverb that means taking very little time to happen.
  - Incorrect:
    - *The process ran fast.*
  - Correct:
    - *The process is fast.*
    - *The process ran quickly.*
## Misused Words

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<tr>
<th><strong>Usual Usage</strong></th>
<th><strong>Other Usage</strong></th>
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Clichés and Idioms

• A cliché is an overused term or phrase; an idiom is a stock phrase whose meaning has little relationship to its words
• Many readers, especially those from other cultures, may misunderstand such phrases
• Avoid clichés and idioms in your writing at all costs:

  follow suit, up to scratch, reinvent the wheel, go through with a fine-tooth comb, flat out, cut and dried, bells and whistles, crop up, lose track, come to grips with, it turned out that, play up, vicious circle, as a matter of fact, tip of the iceberg, knotty problem, in the final analysis, every effort was made, . . .
Foreign Words

• Latin expressions and words should be italicized
  – *et cetera, etc.*
  – *et al.*
  – *circa*
  – *vice versa*
  – *a priori*
  – *a posteriori*
  – *alumnus, alumni, alumna, alumnae*
Technical Writing Style

• Economy
  – The length of a paper should reflect its content
  – Text should be taut (revision is necessary!)
    • Delete superfluous words, simplify sentence structure, and establish a logical flow
  – Every sentence should be necessary, but do not omit words that make the writing easier to understand
Technical Writing Style

• Tone
  – Have one idea per paragraph and one topic per section
  – Have a simple, logical organization
  – Use short words
  – Use short sentences with simple structure
  – Keep paragraphs short
  – Avoid buzzwords, clichés, and slang
Technical Writing Style

• Examples

  – Use an example whenever it adds clarification:

    • *In a semi-static model, each symbol has an associated probability representing its likelihood of occurrence. For example, if the symbols are characters in text, then a common character such as ‘e’ might have an associated probability of 12%.*

    • *Algorithms that involve bit manipulation cannot be efficiently implemented in these languages. For example, Huffman coding is impractical because it involves processing a stream one bit at a time.*
Technical Writing Style

• Analogies
  – What may seem perfectly alike or parallel to one person may seem entirely unalike to another
  – Avoid analogies such as these:
    • *Writing a program is like building a model with connector blocks*
    • *One-sided protocols are like signals in football*
Technical Writing Style

• Analogies
  – For an analogy to be useful, it should significantly reduce the work of understanding the concept being described:
    • **Contrasting look-ahead graph traversal with standard approaches, look-ahead uses a birds-eye view of the local neighborhood to avoid dead-ends, but at significant cost: it is necessary to feed the bird and wait for it to return after each observation.**
Technical Writing Style

• Straw men
  – A straw man is an indefensible hypothesis described for the sole purpose of criticizing it
    • For example, contrasting a new idea with some impossibly bad alternative, for the purpose of putting the new idea in a good light
    • Query languages have changed over the years. The first database systems did not use query languages; records were retrieved by getting them from filing cabinets, and queries were verbal, which led to many mistakes. Such mistakes are impossible with new query languages like QIL.
Technical Writing Style

• Straw men
  – Contrasts should be between the new and the current, not the new and the fictitious
  – Criticism based on results in old papers are unreasonable because it is likely that the state of the art has changed in the interim