Today we will discuss a new topic in writing: style. We will learn how to write sentences clearly in the next few lectures.

We first asked why writing can be unclear. Williams in his book [1] gives four reasons.

1. To fool readers that unclear style equals deep thinking.
2. The author does not know how to write better.
3. The author himself does not understand what he is writing.
4. The author just writes for himself rather than taking readers into account.

Williams also suggests us to write ideas down first and then fix them afterwards. Tom tends to take style into consideration in his first draft. Good writing style will become second nature to you if you obey it enough times. For example, having spent two full days fixing bad line breaks in the first edition of CLR, Tom now always puts a tilde between vertex and $v$ when writing in \LaTeX so that they always appear in the same line.

1 Three types of rules

In Lesson 2 of Williams’s book [1], he distinguishes among correctness, choice, and obedience. In his opinion, correctness is a matter not of choice but of obedience. You should avoid improper words, such as irregardless. Williams introduces three kinds of rules:

1. Real rules: they account for the fundamental structure of English, such as grammar. For example, double negatives do not convey clear meaning in English.

2. Folklore: rules invented by grammarians that they think we should observe. The problem is that if you violate these rules, some readers will object. One example is using while instead of although. Tom disagrees with this usage. He thinks while has a temporal meaning and should be used only when a temporal component exists.

3. Elegant options: rules that readers do not notice if you break them but do notice if you observe them. Williams advises to use whom in the right circumstance, not end a sentence with preposition, use like for as or as if, not use hopefully for I hope, and not modify absolute words with very or more.

2 Principles of clarity

Tom next introduced Williams’s principle of clarity [1]:

Match the important actions in your sentences to verbs.
Make the characters in your story be their subjects.

Nominalization, which means changing a verb into a noun, causes obscure meanings and we should try to avoid it. For example, consider this sentence:

Prior to entry of data into the CPU taking place, there is an interception of the data by the cache, resulting in data storage within the cache.

What are the actions here? They’re in the nouns entry, interception, and storage. What are the characters? They are data, CPU, and cache—but they’re not the subjects in the sentence. Let’s turn the actions into their corresponding verbs (enter, intercept, and store) and make the characters their subjects:

Before data enters the CPU, the cache intercepts and stores it.

Notice that the sentence is shorter and more direct.

Ways of changing a verb into a noun include adding -tion, -ment, -ence or -ing at the end of a verb. Some verbs themselves can also be used as nouns, such as request and review. Using verbs instead of nouns also avoids unnecessary prepositions. For example, request information versus make a request of information. Actions can also hide in adjectives, such as applicable. Some adjectives are also nouns, such as repeat.

Tom also expressed his dislike of all forms of is and suggested us to find other verbs that carry more meaning than is.

3 How to revise sentences

Williams provides three steps to correct sentences: diagnose, analyze, and revise [1]. To diagnose, read the first seven or eight words and see if a verb shows up. To analyze, determine the characters and actions of the sentence. Pay special attention to nominalization. To revise, turn nominalizations into verbs and make subjects the characters of the verbs. Also, rewrite the sentence with conjunctions (such as because, if, when, although, why, how, whether, that) to make the sentence more clear. We learned Williams’s principle of clarity through thinking and diagnosing the following examples of poorly written sentences.

1. Sentence:

   An experimental analysis of the rate-limiting components of the system could yield a significant increase in throughput.

Here, analysis and increase are used as nouns. Rewrite the sentence as

   We could speed up the system if we found its bottlenecks.

   Actions are stronger in verb form.

2. Sentence:

   The slow speed of disk rotation relative to the propagation of electrical signals results in the exhibiting of high latency by disk I/O operations.

Again, actions are used as nouns. The cause-and-effect relationship is not clear. Rewrite as
Disk I/O operations exhibit high latency because disks rotate more slowly than electrical signals propagate.

We accept the nominalization of words that are frequently used, such as operation or performance in the computer-science community. As to cause and effect, cause can be given after effect.

3. Sentence:

The performance of our system is better than previous systems.

A nominalization is a subject of a very weak verb, such as be, seems, has. Here we have the noun performance and the weak verb is. Rewrite as

Our system performs better than previous systems.

The corrected version is shorter and more direct.

4. Sentence:

We performed an analysis of the data.

A nominalization follows an empty verb. Rewrite as

We analyzed the data.

5. Sentence:

The decrease in performance was due to an increase in cache misses.

One nominalization is the subject of an empty verb and the second nominalization follows. Rewrite as

Performance decreased because cache misses increased.

We accept the nominalization performance.

6. Sentence:

There is no requirement that the parameter be positive.

A nominalization follows there is, there are. Also, the actor is missing. Rewrite as one of

The parameter is not required to be positive.
We do not require the parameter to be positive.
The parameter need not be positive.

The last of these three sentences avoids the “we” crutch while also avoiding is.

7. Sentence:

We did an analysis of the differences between the systems.

Nominalizations are joined by prepositions. Rewrite as
We analyzed how the systems differ.

8. Sentence:

A rewriting of the method will result in improvements in the cleanliness of our handling of special cases.

Too many prepositions, and it’s not clear what causes what. Rewrite as

If we rewrite the method, we can handle more special cases cleanly.

Students pointed out that perhaps more should be in front of cleanly rather than special.

9. Sentence:

The simplicity of our system resulted in our greater speed, despite the greater size of other systems.

The logic is unclear when linking nominalizations by prepositions such as of, in, on. We should directly link verbs through conjunctions such as although, if, because. This sentence compares our system with other systems and wants to show that our system is surprisingly fast but small. Rewrite as

Although other systems are larger, ours is faster because it is simpler.

10. Sentence, where the numbers indicate the order of when each event happens:

Determination with respect to the cleaning up of the data when its conditioning is poor upon arrival for operation resides in a filter.

This sentence does not describe events in the correct order. Also the main verb resides appears at the end. Rewrite as

When data arrive and are so ill-conditioned that we cannot operate on them, a filter determines whether to clean up the data.

Note that technically, data is the plural form, but it is OK to use it as a singular.

References