

Scientific and Professional Writing

(TECHSCICOM)

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Academese (*WILLIAMS*)

- ✓ a. Once upon a time, Little Red Riding Hood **was walking** through the woods on the way to Grandma's house, when Wolf **jumped** out from behind a tree and **frightened** her.

b. Once upon a time, a **walk** through the woods by Little Red Riding Hood to Grandma's house happened, when Wolf's **jump** out from behind a tree caused **fright** in her.

Here subjects are underlined; verbs are boldfaced; actions are italicized:

- a. The Federalists' argument that the destabilization of government **was** a consequence of popular democracy **was based** on their *belief* in the *tendency* of factions to *further* their self-interest at the expense of the common good.
- ✓ b. The Federalists *argued* that popular democracy *destabilized* government, because *they believed* that factions *tended* to *further* their self-interest at the expense of the common good.

Characters and Subjects (*WILLIAMS*)

To readers, the most important characters are "agents" or "doers," characters who initiate actions or are the source of conditions expressed by specific verbs and adjectives. Look at how sentences (a) and (b) represent agents (agents are boldfaced, subjects underlined, verbs italicized):

- a. **Our** lack of data *prevented* evaluation of **state** actions in targeting funds to **areas** in need of assistance.
- ✓ b. Because **we** lacked data, **we** *could not evaluate* whether the state *had targeted* funds to **areas** that needed assistance.

In (a), the less clear sentence, there are three characters: we in the form of our, state, and areas. Where do those characters appear? None of them is the subject of a verb; the subject of the verb prevented in (a) is an abstraction.

These two principles about characters as subjects and actions as verbs help you analyze and explain why readers judge a sentence to be clear or unclear. But just as important, those principles also suggest how you can revise it. (Again, note the emphasis on *revise*. Only after you have thoroughly assimilated them as habits of revision can these principles become part of your habits of drafting.)

Three Steps: Diagnosis, Analysis, Revision (*WILLIAMS*)

1. Diagnosis: If you want to predict whether a reader might think your prose is unclear, hard to read, do this:
 - a. Ignoring short introductory phrases, underline the first seven or eight words in each of your sentences.
 - b. Look for three characteristics:
 - Sentences begin not with characters, but with abstract nouns.
 - Sentences take more than six or seven words to get to the verb.
 - Verbs represent actions that are less specific than the abstractions around them.
2. Analysis: If you find such sentences, do this:
 - a. Find or invent a cast of characters.
 - b. Find nominalizations that name the action those characters perform.
3. Revision: Once you locate the characters and their actions, do this:
 - a. Change the nominalizations into verbs and adjectives.
 - b. Make the characters the subjects of those new verbs.
 - c. Rewrite the sentence with conjunctions like *because, if, when, although*.

Some Typical Patterns and Their Revisions (*WILLIAMS*)

A few common patterns of nominalization are easy to spot and revise.

1. A nominalization follows a verb with little specific meaning.
In these cases, the subject is probably already a character.

The agency *conducted* an **investigation** into the matter.

- Change the nominalization to the verb.
- Replace the empty verb with the new verb.

✓ The agency **investigated** the matter.

2. A nominalization follows *there is* or *there are*,

There is no need for further study of this problem.

- Change the nominalization to a verb.
- Find a new subject.

✓ *The engineering staff* **need** not **study** this problem further.

3. The nominalization is the subject of an empty verb:

The **intention** of the IRS *is* to audit the records.

- Change the nominalization to a verb.
- Find a character to be its subject:

✓ *The IRS* **intends** to audit the records.

4. Two or three nominalizations in a row are joined by prepositions:

There was first a **review** *of* the **evolution** *of* the dorsal fin.

- Turn the first nominalization into a verb.
- Either leave the second alone,
- Or turn it into a verb in a CLAUSE beginning with *how* or *why*:

✓ First, she **reviewed** the **evolution** of the dorsal fin.

✓ First, she **reviewed** *how* the dorsal fin **evolved**.

5. Often, one nominalization appears in a subject and a second in the COMPLEMENT of a verb or phrase like *be*, *seems*, *has the result of*, etc.:

Their **increase** in revenues was a result of their **expansion** of outlets.

You have to revise these sentences more extensively:

- Identify the nominalizations in the two halves:

Subject:	Their increase in revenues
Connecting verb or phrase:	was a result of
Complement:	their expansion of outlets.

- Make nominalizations verbs: increase → increase, expansion→expand.
- Find subjects for those verbs: **they** *increase*, **they** *expand*.
- Link the new clauses with a word that expresses their logical connection.

That connection will typically be some kind of causal relationship:

- To express simple cause: *because, since, when*
- To express conditional cause: *if, provided that, so long as*
- To contradict expected causes: *though, although, unless*

Their increase in revenues	→	✓ They increased revenues
was the result of	→	because
their expansion in outlets.	→	they expanded outlets.

Some Happy Consequences (*WILLIAMS*)

We began with these two principles:

- Central characters as subjects.
- Actions as verbs.

When we revise sentences to observe those principles, we make other useful changes:

1. You may have been told to avoid too many prepositional phrases. It's not clear how many is "too many," but whenever you use nominalizations, you have to add prepositional phrases to keep the characters in the sentence. That's just the way the language works. You can eliminate most prepositions by using verbs:

A revision **of** the program will result **in** increases **in** efficiency **in** servicing clients.

- ✓ If we revise the program, we can serve clients more efficiently.

2. You may have been told to write more concretely. Your sentences will seem more concrete if you name characters in subjects and actions in verbs. Compare:

There was an affirmative **decision** for program **expansion**.

- ✓ *The Director* **decided** to **expand** the program.

3. You may have been told to order your ideas logically. When you string nominalizations through prepositional phrases, you can distort the logical sequence of your story. This next sequence of actions distorts the chronological sequence. (Actions are boldfaced, the numbers refer to the sequence in which the actions actually occur.) Compare:

Decisions⁴ in regard to **administration**⁵ of medication despite **inability**² of an irrational patient **appearing**¹ in Trauma Centers to provide legal **consent**³ rest with the attending physician alone.

- ✓ When a patient **appears**¹ in a Trauma Center and **behaves**² so irrationally that he cannot legally **consent**³ to treatment, only the attending physician can **decide**⁴ whether to **administer**⁵ medication.

When you use subjects to name characters and verbs to name their actions, you are more likely to match the logical grammar of your sentences to the chronological sequence of your story.

4. You may have been told to clarify logical relationships. When you nominalize verbs, you often have to use diffuse connectors like *as a result of* and *in regard to*. But when you use verbs, you must link the new clauses with more precise SUBORDINATING CONJUNCTIONS like *because*, *although*, and *if*:

Our effective presentation of our needs **resulted in** our success in acquiring federal funds, **despite** lobbying efforts by others.

- ✓ **Although** other agencies lobbied Congress, we acquired federal funds **because** we presented our needs more effectively.

Diagnose Your Prose (*WILLIAMS*)

At this point you can probably identify problems in the writing of others but have a harder time recognizing them in your own. It's entirely predictable.

Most of you recognize this experience: You write something you think is clear, but when you get it back from a reader, you are told that your ideas are confusing, your organization hard to follow. You wonder whether your critic is just being difficult, but you bite your tongue and try to fix what you are certain should have been clear to anyone who can read prose more complex than stories about My Dog Spot. When that happens to me, I almost always realize—eventually—that my critics were, in fact, right, that they recognized what was unclear better than I did.

How can we be right about other people's writing, and so often so wrong about our own? The answer lies in this paradoxical fact: We judge the writing of others more accurately than we do our own because we usually know less about their subject than they do. And we misjudge the clarity of our own writing, because we know more about our subject than do our readers.

This explains why you are your own worst editor: Who knows more about your subject than you do (or should)? In fact, as you reread your own writing, you usually aren't reading; you're just reminding yourself of what you wanted to mean when you wrote it. But since your readers lack your knowledge, they are likely to respond in ways that you cannot predict. This also explains why two readers can disagree about the quality of the same passage: Someone who understands its content is more likely to think the passage is clearly written than someone who knows less. Both are right. Since you can never read as your readers do, you have to look at your own writing in ways that sidestep your understanding of it, and to do that, you need a way to diagnose your prose that is almost formulaic:

1. The quickest method is to underline the first seven or eight words of every sentence. If you don't see a character as subject or a verb as an action, you have a candidate for revision:

Our analysis of the results of the experiment *did not provide* an explanation of its failure, because our data collection lacked the precision needed.

2. A method more demanding but more reliable is to look at the subject of *every* verb in *every* clause.

Our analysis of the results of the experiment *did not provide* an explanation of its failure, because our data collection *lacked* the precision needed.

3. The most demanding method is to start by looking for any nominalization that you can turn into a verb.

Our **analysis** of the results of the experiment did not provide an **explanation** of its **failure**, because our **data collection** lacked the **precision** needed.

Get the characters into subjects and actions into verbs, and you get a clearer, more concise sentence:

- ✓ When we **analyzed** the results of the experiment, we could not **explain** why it **failed**, because we did not **collect** data **precisely**.

Again, don't think about these principles as you draft. Apply them only after you have something, anything drafted.

Clarity: Actions (*WILLIAMS*)

Readers expect to see characters not just in a Subject, as in these two:

The **President's** veto of the bill_{subject} infuriated Congress.

The veto of the bill by the **President**_{subject} infuriated Congress.

Readers prefer to see the character *as* the subject, like this:

- ✓ When the **President**_{subject} vetoed the bill, he_{subject} infuriated Congress.

They also expect to see verbs express important actions that involve those characters. To the degree that you fail to meet those expectations, to that degree you make your readers work harder and encourage them to judge you an unclear, complex, difficult-to-read writer. So keep these principles in mind as you revise:

1. When appropriate, express actions and conditions in verbs:

The intention of the committee is improvement of morale.

- ✓ The committee intends to improve morale.

2. When appropriate, make subjects of verbs the agents of actions.

A decision by **the Dean** in regard to the funding by **the Department** of the program is necessary for there to be adequate **staff** preparation

- ✓ If **the staff** is to prepare adequately, **the Dean** must decide whether **the Department** will fund the program

Don't revise nominalizations that do the following:

1. Refer to a previous sentence:

- ✓ **These arguments** all depend on a single unproven claim.

2. Sum up an awkward "The fact that":

The fact that she strenuously objected impressed me

- ✓ **Her strenuous objections** impressed me

3. Name what would be the object of a verb:

I do not know **what she intends**.

- ✓ I do not know her **intentions**

4. Refer to a familiar and often repeated concept:

- ✓ The Equal Rights **Amendment** was an issue in past **elections**

5. Occur after *there is/are* introducing a topic that you develop in the next few sentences:

- ✓ *There are* three ways to explain our **successes**. First, we...

Finding and Relocating Characters (*WILLIAMS*)

Once you have a draft, do this:

1. First, look at the way your sentences begin: Your readers are likely to have a problem if they don't see a character as a subject in the first six or seven words (ignoring short introductory phrases).
2. Next, locate your characters. Start by looking for characters in POSSESSIVE PRONOUNS that modify a nominalization and in objects of prepositions, particularly *by* and *of*.

The Federalists' argument that the destabilization *of* government was the result *of* **popular democracy** was based on **their** belief in the tendency *of* **factions** to further **their** self-interest at the expense of the common good.

3. Then skim the passage for nominalizations and convert them to verbs with the characters as subjects:

<i>The Federalists'</i> argument	→	<i>The Federalists</i> argued
<i>their</i> belief	→	<i>they</i> believed
destabilization of government was the result	→	<i>popular democracy</i> destabilized government
tendency of factions to further	→	<i>factions</i> tended to further

4. Finally, the hardest task: You have to reassemble these propositions into a complete sentence. As you do this, keep in the front of your mind the words *if*, *although*, *because*, *that*, *when*, *how*, and *why*, words we use most often to stitch a new sentence together:

✓ The Federalists argued **that** popular democracy destabilized government, **because** they believed **that** factions tended to further their self-interest at the expense of the common good.

Note that sometimes characters hide out in ADJECTIVES:

Medieval **theological** debates often addressed issues that to modern **philosophical** thought are considered trivial.

When you find a character in an adjective, you can revise in the same way:

✓ Medieval **theologians** often debated issues that **philosophers** today consider trivial.

Reconstructing Missing Characters (*WILLIAMS*)

Readers have their biggest problem when they see no characters at all:

A decision was made in favor of conducting a study of the disagreements.

We typically write sentences like this in the context of other sentences that do name characters because we assume that a reader can infer characters from the context. That assumption is often a mistake, because readers usually need more help than we think they need. If you are revising your own prose, you rarely can get too specific:

✓ We decided that **I** should study why **they** disagreed.

We often omit characters in the first place to make general rather than specific statements, so when we revise, we face the problem of creating characters and then deciding what to call them. Unfortunately, English offers few good choices. This sentence lacks characters:

Multivariate strategies are of more use in understanding factors that contribute to psychiatric disorder than strategies based on the assumption that the presence or absence of psychopathology is dependent on a single major gene or on strategies in which a single biological variable is studied.

When we revise, do we use *one* or *we*, or name some generic "doer?"

Abstractions as Characters (*WILLIAMS*)

✓ No right is more fundamental than *freedom of speech*. *Free speech* was the weapon used by the far left in the 1960s to protest against the Vietnam War, and *it* is now the weapon of the far right when conservatives claim the federal government is conspiring with the United Nations to take over the country. *The doctrine of free speech* has been embraced by all sides of all questions to guard against those who would silence their unpopular views. *As a distinct concept, it* originated in....

The phrase *free speech* does not refer to any flesh-and-blood character, but we turn it into a *virtual* character when we use it as the subject in a series of sentences and assign to it actions such as *was used, has been embraced, and originated*.

So for our purposes from now on, *a character is whatever entity that you can tell a story about*, and you can tell a story about whatever you can make the subject of a sentence. Though typically, that's a flesh-and-blood character, you can also tell stories about abstractions like *free speech*.

When those abstract concepts are as familiar to your readers as *free speech* is to most of us, they respond to those words almost as they would to real characters. But when your readers are not familiar with them, they may find it difficult to distinguish those abstractions from others in the same sentence, and when that happens, the passage may seem to collapse into a muddle of abstractions and prepositional phrases.

For example, if you are unfamiliar with "intention" as a philosophical concept, you may find it difficult under the best of circumstances to understand a story whose main characters are two strange characters called "Prospective Intention" and "Immediate Intention". But you will find that story even more difficult to the degree that you have to cope with yet more nominalizations. Here is a story about those two virtual characters, Prospective and Immediate Intention. To a reader not familiar with such stories, this passage will seem difficult because those characters (boldfaced) are embedded in a field of other nominalizations (italicized).

The *argument* is this. The cognitive component of intention exhibits a high degree of *complexity*. **Intention** is temporally divisible into two: **prospective intention** and **immediate intention**. The cognitive *function* of prospective **intention** is the *representation* of a subject's similar past *actions*, his current situation, and his course of *future actions*. That is, the cognitive component of prospective **intention** is a *plan*. The cognitive *function* of immediate **intention** is the *monitoring* and *guidance* of ongoing bodily *movement*.. —Myles Brand, *Intending and Acting*

If we revise the peripheral nominalizations into verbs and introduce a few flesh-and-blood characters to accompany the abstract characters, the passage becomes clearer, especially to someone unfamiliar with such stories (the characters are italicized):

✓ I argue this about **intention**. It has a complex cognitive component of two temporal kinds: **prospective intention** and **immediate intention**. **Prospective intention** lets *us* represent how *we* have acted in the past, how *we* act in the present, and how *we* will act in the future. That is, *we* use the cognitive component of **prospective intention** to help *us* plan. **Immediate intention** lets *us* monitor and guide our bodies as *we* move them.

I have, of course, changed the writer's voice into my own, a presumptuousness he might well reject. But have I made him say something he did not mean? Some argue that any change in form changes content, but I doubt that it always does. In this case, only the author could say.

Here's the point: Most readers prefer flesh-and-blood characters as subjects. But when you write about concepts, you can treat them almost as if they were real characters by making them the subjects of verbs that seem to indicate an action:

Intention **has** a complex cognitive component.

Prospective intention **lets** us represent....

Immediate intention **lets** us monitor and guide....

When your readers are familiar with these abstractions, they have no serious problem understanding the sentences in which they appear. But when readers are not familiar with them, then you have to avoid using a lot of other nominalizations with them. If you do, your readers may well think your prose is a jumble of abstractions.

Passives and Characters (*WILLIAMS*)

Here's what happens when we go from active-verbal to passive-nominalized:

Active-verbal: We **investigated** why the employment office **interviewed** so few minority applicants.

Active-nominalized: We began an **investigation** into why the employment office did so few **interviews** of minority applicants.

Passive-nominalized: An **investigation** was *begun* into why so few **interviews** *were done*.

When we combine nominalizations with passives, we create that kind of prose that readers variously call *sociologicalese*, *educationese*, *legalese*, *bureaucratese*—the kind of prose written by those who confuse authority and objectivity with polysyllabic abstraction and remote impersonality, a style in which no one does anything, least of all claims responsibility.

Like some other terms we've looked at, though, the terms *active* and *passive* can be confusing, because we use them not only to name particular grammatical constructions but also to describe our stylistic impressions. We often call a sentence passive if it *feels* flaccid. Both of these sentences are in the active voice:

The success of the project depends on cost control.

The project will succeed if we can control costs.

But if that first sentence has no passive verbs in the grammatical sense of the term, it certainly feels less active than the second. It's a good idea to keep distinct the grammatical and impressionistic meanings of *active* and *passive*.

Choosing between Active and Passive (*WILLIAMS*)

Unreflective critics of style relentlessly urge us to avoid the passive, because it requires an extra word and because it encourages impersonality. In general, that's not bad advice, but like so many other bits of standard advice, it is often wrong: Often, the passive is the better choice.

1. Must your readers know who is acting?

Often, we don't say who is responsible for an action, because we don't know or because our readers don't care. For example, the passive is the natural choice in these:

- ✓ The president **was rumored** to have considered resigning.
- ✓ Those who **are found** guilty can **be fined**.
- ✓ Valuable records should always **be kept** in a fireproof safe.

If we do not know who rumored, we cannot say. And since we all know who finds criminals guilty, who fines them, and who should keep records in a safe, our readers wouldn't wonder. On those grounds, this next passive sentence would be more economical than its active version:

- Once *those who publicize things* **publicized** the design, *others* quickly **adopted** it.
- ✓ Once the design **was publicized**, it **was** widely **adopted**.

Some writers, of course, deliberately avoid naming names when they don't want their readers to know who was responsible for an action with bad consequences, especially when that person is the writer. In this next sentence, we might predict the passive, for reasons having less to do with style, more with avoiding responsibility:

- Because the safety inspection **was not monitored**, the mechanism **was left** unaligned, a fact that **was known** several months before it **was decided** to reveal that information.

2. Would the active or passive better help your readers move from one sentence to the next?

When we read, we depend on the beginning of a sentence to locate us in a context of what we know before we follow the sentence to what it tells us that is new. A sentence can confuse us if it starts with new and unexpected information.

For example in the second sentence of (2a), the subject (boldfaced) communicates new and complex information, while its object names a concept from the previous sentence, a concept that is therefore familiar to the reader:

- 2a. We must decide whether to focus on improving education in the sciences alone or to attempt to raise the level of education across the whole curriculum. [**The weight given to two factors, industrial competitiveness and the value we attach to the liberal arts,**] new information *will influence* active verb [this decision] familiar information.

That second sentence is in the active voice, but it would be more readable in the passive, because the familiar information would then be first and the new and complex information last:

- ✓ 2b. We must decide whether to focus on improving education in the sciences alone or to attempt to raise the level of education across the whole curriculum. [This decision] familiar information *will be influenced* passive verb by [**the weight we give to two factors, industrial competitiveness and the value we attach to the liberal arts**] new information.

Clarity: Characters (*WILLIAMS*)

1. Though there are exceptions, we judge prose clear when subjects of sentences are agents of actions and those actions are verbs.

fixed	SUBJECT	VERB	COMPLEMENT
variable	CHARACTER	ACTION	STRESS

2. When you tell stories in which abstract nominalizations function as main characters, use as few other nominalizations as you can:

A **nominalization** is a **transformation** of a verb into a noun, often resulting in **displacement** of characters from subjects by nouns.

✓When a **nominalization** *transforms* an action verb into a noun, that noun often *displaces* characters from subjects.

3. Don't hesitate to use a passive if the agent of an action is obvious:

The voters reelected the president with 54 percent of the vote.

✓The president **was reelected** with 54 percent of the vote.

4. Do not hesitate to use a passive if it lets you replace a long subject with a short one:

Research that demonstrated the soundness of our reasoning and the need for action **supported** this decision.

✓*This decision* **was supported by** research that demonstrated the soundness of our reasoning and the need for action.

5. Don't hesitate to use a passive if the passive gives you a coherent and appropriate sequence of subjects:

✓By early 1945, **the Axis nations** had been essentially defeated; all that remained was a bloody climax. **The German borders** had been breached, and **both Germany and Japan** were being bombed around the clock. **Neither country**, though, had been so devastated that **it** could not resist.

6. Don't avoid an active verb if it is a metadiscourse verb:

The terms of the analysis must first **be defined**.

✓We must first **define** the terms of the analysis.

7. When convenient, rewrite long compound noun phrases:

We discussed the board candidate review meetings schedule.

✓We discussed the schedule of meetings to review candidates for the board.

Subject-Verb Agreement (ASM)

WRONG: Synthesis and transport of this metabolite *has been* studied.

WRONG: The existence of the same restriction sites and the dependence on the recA function *suggests* the following hypothesis.

♦ In a sentence with alternative subjects joined by *or*, *not*, *either-or*, *neither-nor*, the verb agrees with the last subject.

RIGHT: The system, the reagents, or the machine *was* at fault.

RIGHT: The system, the machine, or the reagents *were* at fault.

♦ Forms of the verbs *to be* and *to become* agree with the subject, not the complement.

RIGHT: One important finding *was* the reactions of the subject.

Collective Nouns (ASM)

♦ A collective noun – a single noun denoting a group, such as *majority*, *total*, *range*, *variety* – takes a singular or plural verb according to whether the author thinks of it as one group or as many individuals. Treat it consistently as singular or plural within the same sentence.

A majority *agrees* on this. The majority *were* cured.

A total of five patients *were* treated. A total of five doses *was* given to each patient.

The group *was* pleased with *its* results. The group *were* pleased with *their* results.

♦ *Number* may be singular or plural; in many cases the correct usage can be determined by looking at the article modifying it: « A number of patients *were* colonized, but the number of infections *was* small. » *None* may be singular or plural.

♦ In the examples below, note that the subject and verb (italicized) in each sentence agree without regard for what comes between.

RIGHT: The *speed* of the transits *was* increased.

RIGHT: The *column* as well as the dishes *was* washed.

RIGHT: *All* of the patients except one *were* cured.

RIGHT: The *box*, including the packages inside, *was* damaged. (BUT: The *box* and the *packages* inside *were* damaged.)

Parallel Structure I (ASM)

WRONG: Two forms of transportation are walking and by plane (*gerund and prepositional phrase*).
RIGHT: Two forms of transportation are walking and flying (*both gerunds*); ...are by foot and by plane (*both prepositional phrases*).

WRONG: Enrichment may be particularly important when the number of organisms is small, for detection of asymptomatic carriers, or when specimens are delayed in transit (*subordinate clause, prepositional phrase, and subordinate clause*).

RIGHT: ...important for small numbers of organisms, for the detection of asymptomatic carriers, or for specimens delayed in transit (*all prepositional phrases*); ...important when the number of organisms is small, when asymptomatic carriers are to be detected, or when specimens are delayed in transit (*all subordinate clauses*).

WRONG: These proteins are important viral antigens for assaying human immunity and for development of an effective immunogen (*gerund and noun; since a gerund is a verbal noun, this construction is defensible, but closer parallelism is better and easier for the reader to follow*).

RIGHT: These proteins are important viral antigens for assaying human immunity and for developing an effective immunogen (*both gerunds*).

WRONG: These mice became dehydrated, lost weight, and four mice died.

RIGHT: These mice became dehydrated and lost weight, and four mice died.

WRONG: The mixture was heated, shaken, centrifuged, and the supernatant fluid frozen.

RIGHT: The mixture was heated, shaken, and centrifuged, and the supernatant fluid was frozen.

Parallel Structure II (ASM)

WRONG: Increased turnover has been shown both for rhesus monkeys and humans (*prepositional phrase after "both," noun after "and"*).

RIGHT: ...shown for both rhesus monkeys and humans (*one preposition covers both nouns*); ...shown both for rhesus monkeys and for humans (*preposition repeated after each conjunction; repetition is especially helpful in coordinating long, complex phrases*).

WRONG: The 110S structures were relatively labile either after centrifugation or various detergent treatments.

RIGHT: ...labile after either centrifugation or various detergent treatments; ...labile either after centrifugation or after various detergent treatments.

WRONG: Strain WL100 was not only competitive in vermiculite, but also in soil.

RIGHT: Strain WL100 was competitive not only in vermiculite but also in soil.

WRONG: This difference was not related either to the kinetics of induction of interferon or restricted to the amount of poly(I:C) administered.

RIGHT: This difference was neither related to the kinetics of induction of interferon nor restricted to the amount of poly(I:C) administered.

Comparisons (ASM)

WRONG: Suspensions prepared directly from colonies on an agar surface give viable counts comparable to other methods used more routinely for anaerobe inoculum preparation.

RIGHT: ...give viable counts comparable to *those obtained by* other methods...

WRONG: This mutant strain produces a similar protein to the wild-type *E. coli*.

RIGHT: This mutant strain produces a protein similar to *one produced by* the wild-type *E. coli*.

WRONG: This may be due to the smaller genome size of KV when compared with SV40.

RIGHT: This may be because the KV genome is smaller than *that of* SV40. (Note that including the word "when" implies that the comparison affects reality; i.e., when they are not compared, the KV genome is not smaller.)

WRONG: Strain BJ108 produces more of this enzyme compared with strain R45.

RIGHT: Strain BJ108 produces more of this enzyme than strain R45 *does*. (Adding "does" is optional if, as here, the sentence is clear without it.)

AMBIGUOUS: At lower salt concentrations, oligomers bind to DNA as well as monomers.

POSSIBLE: ...oligomers as well as monomers bind to DNA; ... oligomers bind to DNA as well as monomers *do*. (If the author's meaning is not clear, query.)

AMBIGUOUS: CELO virus is evolutionarily more removed from human adenovirus type 2 than bovine adenovirus type 7.

POSSIBLE: ... more removed from human adenovirus type 2 than bovine adenovirus type 7 *is*; ... more removed from human adenovirus type 2 than *from* bovine adenovirus type 7. (Query; the difference in meaning in comparisons like this is important.)

Revising for Sentence Effectiveness (*MARKEL*)

Words and Phrases

1. Have you used active and passive voice appropriately?
2. Have you used precise words?
3. Have you provided adequate detail?
4. Have you avoided ambiguity?
5. Have you avoided unnecessary jargon?
6. Have you used positive rather than negative constructions?
7. Have you avoided long noun strings?
8. Have you avoided clichés?
9. Have you avoided stating the obvious?
10. Have you avoided meaningless modifiers?
11. Have you avoided unnecessary prepositions?
12. Have you used the most concise phrases?
13. Have you avoided redundancy?
14. Have you avoided pompous words?
15. Have you avoided euphemisms?
16. Have you used nonsexist language?
17. Have you used people-first vocabulary in referring to people with disabilities?

Selecting Concrete Details (*BURNETT*)

Abstract Information

Concrete Details

important client	<i>Who?</i>	Jean Thompson, PPI president
a new development	<i>What?</i>	development of blight-resistant chestnut
schedule early	<i>When?</i>	schedule before 9 A.M.
ideal location	<i>Where?</i>	Southfield, MA
a substantial profit	<i>How Much?</i>	a 37-percent profit
a broken part	<i>Which One?</i>	a broken camshaft
limited leg mobility	<i>What percentage?</i>	lift her leg 40 percent of normal extension
operates in high-temperature environment	<i>What Degree?</i>	operates in temperatures up to 2,000°F
a small wingspan	<i>What Size?</i>	a 7.0-mm wingspan
few changes in the procedure	<i>How Many?</i>	three changes in the procedure
corrosion-resistant metal	<i>What Kind?</i>	stainless steel

Never-Say-Neversisms (*MARKEL*)

- Avoid run-on sentences they are hard to read.
- Don't use no double negatives.
- Use the semicolon properly, always use it where it is appropriate; and never where it isn't.
- Reserve the apostrophe for its proper use and omit it when its not needed.
- Do not put statements in the negative form.
- Verbs has to agree with their subjects.
- No sentence fragments.
- Proofread carefully to see if you any words out.
- Avoid commas, that are not necessary.
- If you reread your work, you will find on rereading that a great deal of repetition can be avoided by rereading and editing.
- A writer must not shift your point of view.
- Eschew dialect, irregardless.
- And don't start a sentence with a conjunction.
- Don't overuse exclamation marks!!!
- Place pronouns as close as possible, especially in long sentences, as of 10 or more words, to their antecedents.
- Hyphenate between syllables and avoid un-necessary hyphens.
- Write all adverbial forms correct.
- Don't use contractions in formal writing.
- Writing carefully, dangling participles must be avoided.
- It is incumbent on us to avoid archaisms.
- If any word is improper at the end of a sentence, a linking verb is.
- Steer clear of incorrect forms of verbs that have snuck in the language.
- Take the bull by the hand and avoid mixed metaphors.
- Avoid trendy locutions that sound flaky.
- Never, ever use repetitive redundancies.
- Everyone should be careful to use a singular pronoun with singular nouns in their writing.
- If I've told you once, I've told you a thousand times, resist hyperbole.
- Also, avoid awkward or affected alliterations.
- Don't string too many prepositional phrases together unless you are walking through the valley of the shadow of death.
- Always pick on the correct idiom.
- "Avoid overuse of 'quotation "marks." ' "
- The adverb always follows the verb.
- Last, but not least, avoid clichés like the plague; seek viable alternatives

Revising Paragraphs for Coherence (*MARKEL*)

Structure Paragraphs Clearly

If you draft quickly—as you should—your paragraphs will need a lot of revision before they are easy to read and understand. A hasty paragraph often starts off with a number of details: about who worked on the problem before and what equipment or procedure they used; about the ups and downs of the project, the successes and setbacks; about specifications, dimensions, and computations. The paragraph winds its way down the page until, finally, the writer concludes: "No problems were found."

This structure—moving from the particular details to the general statement—reflects the way we think: we accumulate the details and then draw conclusions from them. But the paragraph will be easier to read if the main point is presented first and then supported in the remainder of the paragraph.

The Topic Sentence

Help your readers. Put the point—the *topic sentence*—up front. Technical communication should be clear and easy to read, not full of suspense. If a paragraph describes a test you performed on a piece of equipment, include the result in your first sentence:

The point-to-point continuity test on Cabinet 3 revealed no problems.

Then go on to explain the details. If the paragraph describes a complicated idea, start with an overview:

Mitosis occurs in five stages: (1) interphase, (2) prophase, (3) metaphase, (4) anaphase, and (5) telophase.

Then describe each phase. In other words, put the "bottom line" on top.

Notice, for instance, how difficult the following paragraph is to read because the writer structured the discussion in the same order that she performed her calculations:

Our estimates are based on our generating power during eight months of the year and purchasing it the other four. Based on the 1995 purchased power rate of \$0.034/KW (January through April cost data) inflating at 8 percent annually and a constant coal cost of \$45-\$50, the projected 1996 savings resulting from a conversion to coal would be \$225,000.

Putting the bottom line on top makes the paragraph much easier to read. Notice how the writer adds a numbered list after the topic sentence:

✓The projected 1996 savings resulting from a conversion to coal are \$225,000. This estimate is based on three assumptions: (1) that we will be generating power during eight months of the year and purchasing it the other four, (2) that power rates inflate at 8 percent from the 1995 figure of \$0.034/KW (January through April cost data), and (3) that coal costs remain constant at \$45-\$50.

The topic sentence in technical communication functions just as it does in any other kind of writing: it summarizes or forecasts the main point of the paragraph.

Coherence Devices within and between Paragraphs (*MARKEL*)

After you have revised the main structure of the paragraph—the topic sentence and the support—make sure that the paragraph is coherent. In a coherent paragraph, thoughts are linked together logically and clearly. Parallel ideas are expressed in parallel grammatical constructions. Even if the paragraph already moves smoothly from sentence to sentence, emphasize the coherence in three ways, as shown below.

1. Transitional Words and Phrases

Transitional words and phrases help the reader understand a discussion by pointing out the direction the thoughts are following. The Table below lists the most common logical relationships between two thoughts and some of the common transitions that express those relationships:

In the following examples, the first versions contain no transitional words and phrases. Notice how much clearer the second versions are.

- WEAK** Neurons are not the only kind of cell in the brain. Blood cells supply oxygen and nutrients.
- IMPROVED** Neurons are not the only kind of cell in the brain. *For instance*, blood cells supply oxygen and nutrients.
- WEAK** The project was originally expected to cost \$300,000. The final cost was \$450,000.
- IMPROVED** The project was originally expected to cost \$300,000. *However*, the final cost was \$450,000.
- WEAK** The manatee population of Florida has been stricken by an unknown disease. Marine biologists from across the nation have come to Florida to assist in manatee-disease research.
- IMPROVED** The manatee population of Florida has been stricken by an unknown disease. *As a result*, marine biologists from across the nation have come to Florida to assist in manatee-disease research.

Transitional Words and Phrases

Relationship	Transitions
addition	also, and, finally first (second, etc.), furthermore, in addition, likewise, moreover, similarly
comparison	in the same way, likewise, similarly
contrast	although, but, however, in contrast, nevertheless, on the other hand, yet
illustration	for example, for instance, in other words, to illustrate
cause-effect	as a result, because, consequently, hence, so, therefore, thus
time or space	above, around, earlier, later, next, to the right (left, west, etc.), soon, then
summary or conclusion	at last, finally, in conclusion, to conclude, to summarize

Use transitional words to maintain coherence *between* paragraphs just as you use them to maintain coherence *within* paragraphs. Place the transitions as close as possible to the beginning of the second element. For example, the link between two sentences within a paragraph should be near the start of the second sentence:

The new embossing machine was found to be defective. *However*, the warranty on the machine will cover replacement costs.

The link between two paragraphs should be near the start of the second paragraph:

The complete system would be too expensive for us to purchase now_____.

In addition, a more advanced system is expected on the market within six months_____.

2. Key Words

Repeating key words—usually nouns—helps readers follow the discussion. Notice in the following example how the first version can be confusing:

UNCLEAR: For months the project leaders carefully planned their research. The cost of the work was estimated to be over \$200,000. (What is the work: the planning or the research?)

CLEAR: For months the project leaders carefully planned their research. The cost of the research was estimated to be over \$200,000.

Out of a misguided desire to be interesting, some writers keep changing their important terms. *Plankton* becomes *miniature seaweed*, then the *ocean's fast food*. Leave this kind of word game to TV sportscasters; technical communication must be clear and precise.

Of course, too much repetition can be boring. You can vary nonessential terms, so long as you don't sacrifice clarity.

HEAVY: The purpose of the new plan is to reduce the *problems* we are seeing in our accounting operations. We hope to see a *reduction* in the *problems* by early next quarter.

BETTER: The purpose of the new plan is to reduce the *problems* we are seeing in our accounting operations. We hope to see an *improvement* by early next quarter.

3. Demonstrative Pronouns Followed by Nouns

In addition to using transitional words and phrases and repeating key phrases, using demonstrative pronouns—*this*, *that*, *these* and *those*—can help you maintain the coherence of a discussion by linking ideas securely. In almost all cases, demonstrative pronouns should serve as adjectives rather than as pronouns; that is, they should be followed by nouns. In the following examples, notice that a demonstrative pronoun by itself can be confusing.

UNCLEAR: New screening techniques are being developed to combat viral infections. These are the subject of a new research effort in California. (What is being studied in California: new screening techniques or viral infections?)

CLEAR: New screening techniques are being developed to combat viral infections. *These techniques* are the subject of a new research effort in California.

UNCLEAR: The task force could not complete its study of the mine accident. This was the subject of an editorial in the union newsletter. (What was the subject of the editorial: the mine accident or the task force's inability to complete its study of the accident?)

CLEAR: The task force failed to complete its study of the mine accident. *This failure* was the subject of an editorial in the union newsletter.

Even when the context is clear, a demonstrative pronoun used without a noun refers readers backward to an earlier idea and therefore interrupts readers' progress.

INTERRUPTIVE: The law firm advised that the company initiate proceedings. This caused the company to search for a second legal opinion.

FLUID: The law firm advised that the company initiate proceedings. *This advice* caused the company to search for a second legal opinion.

Transitional words and phrases, the repetition of key words, and demonstratives cannot give your writing coherence: they can only help readers appreciate the coherence that already exists. Your job is, first, to make sure your writing is coherent and, second, to highlight that coherence.

Turning a "Writer's Paragraph" into a "Reader's Paragraph" (MARKEL)

To demonstrate the strategies that improve coherence, the following examples show how these techniques can improve a weak paragraph. The paragraph is from a status report written by a branch manager of a utility company. In it the writer explains how he decided on a method to increase the company's business within his particular branch. (The sentences are numbered to clarify the marginal comments.)

Sentence 1 focuses on the alternatives, not on the final decision the writer made. Sentences 2 and 3 describe one alternative, then the over.

Sentence 4 explains why the first alternative was undesirable.

Sentences 5 and 6 explain why he chose the second alternative. Throughout the paragraph, the focus is on the process of the study, not on the results.

(1) There were two principal alternatives considered for improving Montana Branch. (2) The first alternative was to drill and equip additional sources of supply with sufficient capacity to provide for the present and projected system deficiencies. (3) The second alternative was to provide for said deficiencies through a combination of additional sources of supply and a storage facility. (4) Unfortunately, groundwater studies which were conducted in the Southeast Montana area by the consulting firm of Smith and Jones indicated that although groundwater is available within this general area of our system, it is limited as to quantity, and there is considerable separation between said sources. (5) This being the case, it becomes necessary to utilize the sources that are available or that can be developed in the most efficient manner, which means operating them in conjunction with a storage facility. (6) In this way, the sources only have to be capable of providing for the average demand on a maximum day and the storage facility can be utilized to provide for the peaking requirements plus fire protection. (7) Consequently, the second alternative as mentioned hereinabove was determined to be the more desirable alternative.

Following is the writer's paragraph translated into a reader's paragraph. (The sentences are numbered to clarify the marginal comments.)

The topic sentence clearly states the main point of the paragraph. Sentence 2 justifies the assertion from sentence 1. Sentence 3 goes back to describe the other alternative they considered. Sentence 4 explains why that alternative was rejected.

✓ (1) We found that the best way to improve the Montana branch would be to add a storage facility to our existing supply sources. (2) Currently, we can handle the average demand on a maximum day; the storage facility will enable us to meet peaking requirements and fire-protection needs. (3) In conducting our investigation, we considered developing new supply sources with sufficient capacity to meet current and future needs. (4) This alternative was rejected, however, when our consultants (Smith and Jones) did groundwater studies that revealed that insufficient groundwater is available and that the new wells would have to be located too far apart if they were not to interfere with each other.

This revision is superior to the original in that it is shorter and more direct, and therefore easier to read and understand. Notice the use of transitional words ("currently" in sentence 2 and "however" in sentence 4); key words ("storage facility," "sources," and "needs"); and demonstrative pronouns with nouns ("this alternative").

The only possible objection to the streamlined version is that it is *too* clear that it leaves the writer vulnerable in case his decision turns out to have been wrong. But if the decision doesn't work out, the writer will be responsible anyway, and poor writing will not endear him to his supervisor. Good writing is the best bet under any circumstances.

Choice of Topic Strings (*BEENE & WHITE*)

Here are three versions of the same passage from a legal brief analyzing liability in regard to patients who develop unfavorable reactions to prescribed drugs. The first is unfocused; it has no consistent topic string. But if we rewrite it to make one of the cast of characters the topic, we have to choose *which* character, the doctor or the patient.

1a. *Unmonitored reactions* may also lead to physician's liability. 1b. In *M.v. L.*, Spandoline had been prescribed, which resulted in agranulocytosis. 1c. *The manufacturer's literature* indicated the need for frequent observations, and any sudden development of infection immediately reported. 1d. Furthermore, *no white cell counts* were made until after the development of a sore throat. 1e. Also, *evidence* indicated that *no instructions* had been given to report any signs of agranulocytosis. 1f. Even though *a laboratory* was the defendant, *the court* held for negligence on the part of the physician.

Before you read the next two versions, you might decide whether the patient or the doctor should be topicalized.

✓2a. If *a physician* fails to monitor a patient's reactions, *he* may also be found liable. 2b. In *M. v. L.*, *a physician* prescribed Spandoline, which resulted in the patient developing agranulocytosis. 2c. *The physician* had been cautioned by the manufacturer's literature that *he* should observe the patient frequently and immediately report any signs of infection. 2d. Furthermore, *the physician* made no white cell counts until the patient developed a sore throat. 2e. Also, *the physician* failed to provide evidence that *he* instructed the patient to report any signs of agranulocytosis. 2f. Even though *the physician* was not the defendant but rather a laboratory, *the physician* was held negligent.

✓3a. If *a patient* is not monitored by his physician, *he* may successfully charge the physician with negligence. 3b. In *M. v. L.*, *a patient* who had been taking the prescribed drug Spandoline developed agranulocytosis. 3c. According to the manufacturer's literature, *the patient* should undergo frequent observation and should report any sign of infection immediately. 3d. Furthermore, *the patient* had no white cell count taken until after *he* developed a sore throat. 3e. Also, *the patient* showed that *he* had never been instructed to report any signs of agranulocytosis. 3f. Even though *the patient* brought the action against a laboratory, *the court* held the physician to be negligent.

Topics (*WILLIAMS*)

Readers judge the clearest topic to be a short noun phrase that appears early in a sentence, usually as its subject. But readers decide what a passage is "about" not on the basis of a single word or two. They perceive that sense of aboutness in verbs and adjectives as well. Most readers would judge this paragraph to be out of focus because its sentences do not open from any consistent point of view:

In recent years, **many strides in identifying Alzheimer's disease have been made** in psychiatric medicine. Not too long ago, **senility in an older patient who seemed to be losing touch with reality** was often confused with Alzheimer's. In the past few years, however, **blood chemistry and genetic clues** have become tools to diagnose this condition. There is **the risk of human tragedy of another kind**, however, as a result of the increasing accuracy of these procedures: Long before the appearance of any of its overt symptoms, **physicians** may be able to predict Alzheimer's. At that point, **an otherwise apparently healthy person** could be devastated by such an early and accurate diagnosis.

In this next revised paragraph, the sentences that follow the first one open with concepts that readers would recognize, words that paraphrase the central concept of this passage: *identifying Alzheimer's disease*. But notice how this central topic is expressed in ways other than in just nouns in subjects:

✓ In recent years, **psychiatric medicine** has made strides in identifying Alzheimer's disease. Not too long ago, when **a physician examined an older patient who seemed out of touch with reality**, she had to guess whether that person had Alzheimer's or was senile, an entirely different syndrome. In the past few years, however, **new and more reliable tests** have focused on blood chemistry and genetic clues. In **the accuracy of these new tests**, however, lies the risk of human tragedy of another kind: **Physicians may be able to predict Alzheimer's** long before its overt appearance, **but such an early and accurate diagnosis** could psychologically devastate an otherwise healthy person.

In this revised passage, I expressed its topic, kinds of tests, in subject noun phrases: *new and more reliable tests*, *the accuracy of these new tests*, and *such an early and accurate diagnosis*. But I also expressed it in the object of a preposition: *in the accuracy of these new tests*, and in whole clauses: *a physician examined an older patient who seemed out-of-touch with reality*, *physicians may be able to predict Alzheimer's*, clauses that all mean or imply "test."

"Known-New" Analysis (*BURNETT*)

A problem arises when a writer presumes too much about the readers' prior knowledge. In these situations, a writer forgets (or neglects) background and connecting information that readers need. One way to ensure that you have provided readers with the cues they need is to apply the *known-new theory*, which states that new information should be connected to what readers already know, either from background knowledge or from immediately preceding reading. Three variations of known-new are possible, with A, B, C, and so on representing pieces of information:

Variation 1

sentence: known A tagged with new B

sentence: known A tagged with new C

sentence: known A tagged with new D

sentence: known A tagged with new E

Example

The ink of a squid [A] is brown or black viscous fluid [B], which is contained in a reservoir. The ink [A] is ejected through the siphon when a squid is alarmed [C]. This ink [A] not only forms an effective screen behind which the animal can escape [D], but it [A] contains alkaloids that paralyze the olfactory senses of the enemy [E].

Variation 2

sentence: known A tagged with new B (so now B is known)

sentence: known B tagged with new C (now C is known)

sentence: known C tagged with new D (now D is known)

sentence: known D tagged with new E (now E is known)

Example

All squids [A] propel themselves by taking in and forcibly expelling water from the mantle cavity through the siphon [B]. The force and direction of the water expelled [B], plus the undulation of the fins and body, determine the direction and rapid movement [C] of the animals. The rapid movement [C] is always in the opposite direction of the water ejected from the siphon [D]. The ejection of the water [D] also oxygenates the gills, located in the mantle cavity [E].

Variation 3 (a combination of 1 and 2)

sentence: known A tagged with new B

sentence: known B tagged with new C

sentence: known A tagged with new D

sentence: known B tagged with new E

sentence: known B tagged with new F

Example

The unusual coloration [A] of squid is caused by the presence of integumental pigment cells [B]. These cells [B], called chromatophores, contain red, blue, yellow, and black pigment [C]. Coloration [A] is specific to each species [D]. The chromatophores, color cells, [B] are controlled by muscles that expand or contract in relation to visual or olfactory stimuli, thus changing the color of the animal [E]. The pigment cells' [B] release of color into the flesh of a dead animal indicates the onset of spoilage [F].

Known-new analysis aids revision by giving you a quick, effective way to spotlight the new material that you have introduced. The following paragraph is technically accurate but difficult to read because the writer paid little attention to coherence; some of the new ideas that pop up do not connect to what readers already know. Too much new information in too short a space lessens readers' chances of understanding and retaining the information. The short, choppy sentences make the paragraph read like a poorly written elementary primer. Known-new analysis quickly illuminates why the paragraph seems difficult: the subject shifts too many times.

Example

(1)A:B (2) B:C
(3)D:E
(4)E:F
(5)E:A
(6)D:G

(7)H:I (two more new subjects) (8)A:J

(1) Hot Isostatic Processing [A] makes metal more dense [B]. (2) Dense metal [B] is more durable [C]. (3) Metal parts [D] cannot be cast without unavoidable small cracks and air pockets [E]. (4) Imperfections [E] lead to wear and breakage [F]. (5) These flaws [E] can be eliminated with Hot Isostatic Processing [A]. (6) The parts [D] are heated in special units, then pressurized with gas to minimize flaws [G]. (7) A controlled cooling process [H] ensures that the parts retain their original shape [I]. (8) Hot Isostatic Processing [A] produces stronger parts, able to withstand greater pressures for a longer span of time [J].

The first revision of this paragraph uses a consistent subject for all of the sentences. Because each sentence relates new information to what is already known, readers follow ideas more easily.

Revision 1

(1)A:B
(2)A:C
(3)A:C
(4)A:D
(5)A:E

✓ (1) *Cast metal parts* can be made more durable if they undergo Hot Isostatic Processing to eliminate flaws that occur during casting. (2) *Metal parts* cannot be cast without small cracks and air pockets, imperfections that lead to wear and breakage. (3) During the Hot Isostatic Process, *cast metal parts* are heated in special units, then pressurized with a gas to minimize these casting flaws. (4) *The parts* are able to retain their original shape because of a controlled cooling process. (5) Stronger *parts*, able to withstand greater pressures for longer periods, result from Hot Isostatic Processing.

The second revision also uses known-new analysis to help the writer improve the paragraph. In this version, rather than having each sentence begin with the same topic, the writer moves from topic A to B, from B to C, and so on, so that readers can follow the development of the idea.

Revision 2

(1)A:B
(2)B:C
(3)C:A
(4)B:D
(5)B:E
(6)A:F

✓ (1) *Hot Isostatic Processing* makes *cast metal parts* more dense and, thus, more durable. (2) *Metal parts* cannot be cast without *small cracks and air pockets*, imperfections that lead to wear and breakage. (3) These *flaws* can be eliminated with *Hot Isostatic Processing*. (4) The *cast metal parts* are heated in special units, then pressurized with gas to *minimize flaws*. (5) The parts retain their *shape* because of a controlled cooling process. (6) *Hot Isostatic Processing* produces *stronger parts*, able to withstand greater pressures for longer periods.

Functional Sentence Perspective (Known-New) (*BEENE & WHITE*)

Consider the following passage:

1a. Alteration of mucosal and vascular permeability through elaboration of a toxin by the vibrio is one current hypothesis in explanation of this kind of severe dehydration. 1b. Changes in small capillaries located near the basal surface of the epithelial cells and the appearance of numerous microvesicles in the cytoplasm of the mucosal cells is evidence in favor of this hypothesis. 1c. Hydrodynamic transport of fluid into the interstitial tissue and then through the mucosa into the lumen of the gut is believed to depend on capillary permeability alteration.

If we apply the familiar advice about editing abstract nominalizations into verbs, we can improve this passage considerably (Williams, 1984):

2a. More permeable mucosal and vascular tissue results when a toxin is elaborated by the vibrio, according to one current hypothesis that would explain this kind of severe dehydration. 2b. That small capillaries located near the basal surface of the epithelial cells change and that numerous microvesicles appear in the cytoplasm of the mucosal cells is evidence in favor of this hypothesis. 2c. Fluid hydrodynamically transported into the interstitial tissue through the mucosa into the lumen of the gut results when capillaries become more permeable.

We have changed all the abstract nominalizations to verbs, but the passage is still less than entirely readable. If we edit this passage one more time in some common sense ways, we create a version that is considerably more readable.

✓ 3a. We can explain this kind of severe dehydration by the hypothesis that the vibrio elaborates a toxin that makes mucosal and vascular tissue more permeable. 3b. In favor of this hypothesis are changes in the small capillaries located near the basal surface of the epithelial cells and the appearance of numerous microvesicles in the cytoplasm of the mucosal cells. 3c. We believe that when capillaries become more permeable, fluid is hydrodynamically transported into the interstitial tissue and then through the mucosa into the lumen of the gut.

Organizational Patterns (*MARKEL*)

Chronological and Spatial

1. Have you provided signposts, such as headings or transitional words or phrases?
2. Have you considered using graphics to complement the text?
3. Have you analyzed events where appropriate?

General to Specific

1. Have you provided signposts, such as headings or transitional words or phrases?
2. Have you considered using graphics to complement the text?

More Important to Less Important

1. Have you explained clearly that you are using this organizational pattern?
2. Has your discussion made clear why the first point is the most important, the second is the second most important, and so forth?
3. Have you considered using graphics to complement the text?

Comparison and Contrast

1. Have you included the necessary criteria?
2. Have you chosen a structure—whole-by-whole or part-by-part—that is appropriate for your audience and purpose?
3. Have you chosen appropriate organizational patterns for your second-level items?

Classification and Partition

1. Have you chosen a basis consistent with the audience and purpose of the document?
2. Have you used only one basis at a time?
3. Have you avoided overlap?
4. Have you included all the appropriate categories?
5. Have you arranged the categories in a logical sequence?

Problem-Methods-Solution

1. Have you described the problem clearly and specifically?
2. If appropriate, have you justified your methods?
3. Have you avoided overstating your solution?
4. Have you sequenced the discussion in a way that is consistent with the audience and purpose of the document?

Cause and Effect

1. Have you clearly expressed your assertion, your facts, and your reasoning?
2. Have you sequenced your assertion, your facts, and your reasoning appropriately for your audience and purpose?
3. Have you avoided inadequate sampling?
4. Have you avoided post-hoc reasoning?
5. Have you avoided oversimplifying?

Using Organizational Patterns (*BURNETT*)

Not only do organizational patterns reflect a writer's thought processes, but they also help organize information so readers interpret it accurately. The arrangement of material influences the way readers think about and react to the information. The following examples demonstrate that the same subject—integrated circuits—can be presented in different ways by using several organizational patterns.

Example A presents a straightforward *division* of integrated circuits. During her planning, the author charted the information and divided integrated circuits into three types: programmable devices, memory devices, and linear devices. In Example A the initial parts-whole analysis suffices; the writer doesn't have to use any additional organizational pattern.

Example A

Integrated circuits are divided into three categories, depending on their function and capability in the final product. The first type is a programmable integrated circuit, a multifunctional component designed to be programmed by the supplier or by in-house technicians. The second type of integrated circuit is the memory device, used to store memory in an end product. The third type is a linear device designed to do many specific predetermined functions and used in conjunction with other components to operate computers.

Example B explains the *chronology* of incoming inspection that integrated circuits go through. The reader easily follows the process because of the transitional phrases or words: "the first stage," "then," "next," "after this," "the final step." The chronological pattern highlights each step of the sequence.

Example B

Integrated circuits received at incoming inspection go through a five-step process. The first stage of inspection ensures that the parts have been purchased from a predetermined qualified vendor list. The parts are then prioritized according to daily back-order quantities and/or line shortages assigned by the production floor. Next the parts are moved into the test area where a determination is made as to which lots will be tested at 100 percent and which will be sample tested. After this, the parts are electrically tested for specific continuity and direct current parameters using MCT handlers. The final step of incoming inspection is distributing the parts according to need on the production floor.

Example C uses *spatial order* to describe the incoming inspection of an integrated circuit. Transitions such as "through the test area," "aligned," and "upper left" signal relative physical location.

Example C

The movement of the IC (integrated circuit) chip through the test area is very efficient. The chips arrive from the supplier, already set—24 at a time—into a removable channel within a clear tube. The chips are aligned in the same direction within the tube. This tube is inserted by the operator into the MCT handler so that pin 1 of the first chip, marked by a small dot, is in the upper left. The tube slides through a slot, into the testing compartment, where each chip is tested individually. Automatically, the good chips are placed in one channel, the rejects in another. The channels are moved so the operator can slip on the protective tubes. The good chips are sent to the manufacturing area; the rejects are sent to another engineering station for further testing.

Example D uses *descending order* to identify the priorities for testing circuits. Relative importance is shown by the transitional phrases: "most important," "further separated," "all other integrated circuits." Descending order is common in technical writing because readers often want to know the most important idea first.

Example D

Integrated circuits received at incoming inspection are processed according to priorities. The most important integrated circuits are those that fill line shortages on the production floor. These parts take first priority at incoming inspection and are handled according to frequency of use and critical demand. These priority parts are further separated according to how fast they can be accurately tested and sent to the production floor. All other integrated circuits are then prioritized by back-order demand and the availability of open test equipment.

The next two examples use *comparison and contrast* to differentiate the responsibilities of incoming inspection and in-process inspection of integrated circuits. Comparison and contrast can be organized in two different ways. The first pattern, in Example E, shifts back and forth between incoming inspection and in-process inspection, explaining how each deals with specific responsibilities.

Example E

<i>topic sentence</i>	Integrated circuits are inspected and/or tested by two separate quality control departments: incoming quality control and in-process quality control.
<i>incoming inspection</i>	Incoming quality control is responsible for ensuring that all integrated circuits sent to the production floor meet all electrical standards set by the Component Engineering Department. In-process quality control is only responsible for ensuring that the parts are properly mounted on the printed circuit board.
<i>in-process inspection</i>	Incoming quality control also has to verify the markings on the integrated circuits in order to do proper testing and make certain that the company has purchased a qualified product. In contrast, in-process quality control only has to do random inspections of the circuit markings to ensure that qualified parts are being used in the manufacturing process. Although incoming and in-process inspection are two different areas, they do share the same goal of building a quality product.
<i>incoming inspection</i>	
<i>in-process inspection</i>	
<i>mutual goal</i>	

Example F takes the same paragraph and rearranges the information to present all of the information about incoming inspection first and then discuss the in-process inspection.

Example F

<i>topic sentence</i>	Integrated circuits are inspected and/or tested by two separate quality control departments: incoming quality control and in-process quality control.
<i>incoming inspection</i>	Incoming quality control is responsible for ensuring that all integrated circuits sent to the production floor meet all electrical standards set by the Component Engineering Department.
<i>incoming inspection</i>	Incoming quality control also has to verify the markings on the integrated circuits in order to do proper testing and make certain that the company has purchased a qualified product.
<i>in-process inspection</i>	In-process quality control is only responsible for ensuring that the parts are properly mounted on the in-process inspection printed circuit board.
<i>in-process inspection</i>	In-process quality control only has to do random inspections of the circuit markings to ensure that qualified parts are being used in the manufacturing process.
<i>mutual goal</i>	Although incoming and in-process inspection are two different areas, they do share the same goal of building a quality product.

Example G uses *cause and effect* to organize information about IC testing. In this example, the cause-and-effect transitions indicate the descending order of the reasons an IC chip can be rejected.

Example G

Reasons for rejection of IC chips during incoming inspection fall into three categories. Most often, rejections occur because of some flaw in the chip itself. For example, a chip may have a short in the circuitry or fail to perform at the specified voltage or current. A second reason for rejection occurs when the supplier sends the wrong parts or a mixed batch of parts. The final reason, which happens infrequently, occurs when the automatic test equipment has the wrong program or a program with a bug, so the contacts for the electrical testing are misplaced.

Managing New Technical Terms (*WILLIAMS*)

Readers have a problem with a second kind of complexity: It has less to do with unpacking long complicated PHRASES and CLAUSES than with the added effort they need to understand new, information, regardless of its syntactic complexity. Compare these next two passages:

1a. The effects of calcium blockers in the control of cardiac irregularity can be seen through an understanding of the role of calcium in the activation of muscle groups. The regulatory proteins actin, myosin, tropomyosin, and troponin make up the sarcomere, the basic unit of MUSCLE contraction. The thick filament is made up of ATPase, an energy-producing protein myosin, while actin, tropomyosin, and troponin make up the thin filament.

✓1b. When muscles contract, they need calcium. We must therefore understand how calcium influences muscle contraction in order to understand how cardiac irregularity is controlled by drugs called calcium blockers. The basic unit of muscle contraction is the sarcomere. It has two filaments, one thin and one thick, consisting of proteins that regulate contraction. Muscles contract when a protein in the thin filament, actin, interacts with another protein in the thick filament, an energy-producing or ATPase protein called myosin.

Both passages have the same technical terms, but the novice in muscle chemistry can read (1b) more easily than (1a). They differ in two ways. First, information that is implicit in (1a) is explicit in (1b):

1a.... and troponin make up the sarcomere, the basic unit of muscle contraction. The thick filament is made up of....

✓1b. The basic unit of muscle contraction is the sarcomere. It has two....

In the same way, I also turned information that was indirectly stated in an ADJECTIVE in (1a) into direct statements with full subjects and verbs in (1b):

regulatory proteins > proteins that **regulate**.

But the more important way they differ is that I moved technical terms that might be unfamiliar to a reader away from the beginnings of sentences toward their ends:

2a. The effects of calcium blockers in the control of cardiac irregularity can be seen through an understanding of the role of calcium in the activation of muscle groups.

✓2b. When muscles contract, they need calcium. We must therefore understand how calcium influences muscle contraction in order to understand how cardiac irregularity is controlled by drugs called calcium blockers.

Here's the point: When readers see a technical term for the first time, particularly a term that they will not instantly recognize, they can best grasp that term if it appears not at the beginning of a sentence, in its topic, but at the end.

Before you conclude that these principles apply only to prose intended for rank novices in a field, I should note that writers introduce new technical terms in this way in even the most professional writing, as in this passage from the *New England Journal of Medicine*:

✓The incubation of peripheral blood lymphocytes with a lymphokine, interleukin-2, generates lymphoid cells that can lyse fresh, noncultured, natural-killer-resistant tumor cells but not normal cells. *We term these cells* **lymphokine-activated killer (LAK) cells**.

Even experts in a field find prose difficult when it goes against the grain of the principles offered here.

The Stress Position (*GOPEN & SWAN*)

The stress position can change in size from sentence to sentence. Sometimes it consists of a single word; sometimes it extends to several lines. The definitive factor is this: The stress position coincides with the moment of syntactic closure. A reader has reached the beginning of the stress position when she knows there is nothing left in the clause or sentence but the material presently being read. Thus a whole list, numbered and indented, can occupy the stress position of a sentence if it has been clearly announced as being all that remains of that sentence. Each member of that list, in turn, may have its own internal stress position, since each member may produce its own syntactic closure.

Within a sentence, secondary stress positions can be formed by the appearance of a properly used colon or semicolon; by grammatical convention, the material preceding these punctuation marks must be able to stand by itself as a complete sentence. Thus, sentences can be extended effortlessly to dozens of words, as long as there is a medial syntactic closure for every piece of new, stress-worthy information along the way. One of our revisions of the initial sentence can serve as an example:

The smallest of the URF's is URFA6L, a 207-nucleotide (nt) reading frame overlapping out of phase the NH₂-terminal portion of the adenosinetriphosphatase (ATPase) subunit 6 gene, which has been identified as the animal equivalent of the recently discovered yeast H⁺-ATPase subunit 8 gene.

✓The smallest of the URF's is URFA6L, a 207-nucleotide (nt) reading frame overlapping out of phase the NH₂-terminal portion of the adenosinetriphosphatase (ATPase) subunit 6 gene; it has been identified as the animal equivalent of the recently discovered yeast H⁺-ATPase subunit 8 gene.

By using a semicolon, we created a second stress position to accommodate a second piece of information that seemed to require emphasis.

Six Guidelines For Writing Technical Documents (*WILLIAMS*)

1. Identify the content and context.

- Content. Is the information accurate?
- Audience. Is the audience identified? Is the document adapted to that audience?
- Purpose. Can readers determine the document's purpose?

2. Anticipate readers' needs.

- Organization. Are common organizational patterns used to help readers?
- Definitions. Have unfamiliar terms been defined for readers?
- Support. Are the technical details, examples, and explanations appropriate for readers?

3. Establish connections.

- Unity. Is the information logically related to a central point?
- Coherence. Do the ideas follow logically, one after another?
- Analogies. Are analogies and other figures of speech used to help readers connect new information to what they already know?

4. Use design and visuals.

- Document Design. Does the design of the document make reading easier?
- Integration. Does the document effectively integrate verbal and visual information?
- Visuals. Are visuals used both to illustrate and clarify concepts?

5. Make the text accessible.

- Preview and Review. Are there preview and review sections (introductions and summaries) to help guide readers through the overall document as well as through individual sections?
- Mapping. Are there cues to help readers form a mental map of where they are in the document, of how the parts relate to the whole?
- Front Matter and End Matter. Are elements such as the abstract, table of contents, glossary, references, appendixes, and index designed to help readers?

6. Reflect professional standards.

- Style. Is the style of writing appealing and appropriate?
- Tone. Is the tone professional and persuasive?
- Correctness. Does the document meet standards of mechanical and grammatical correctness?

Specific Planning of Documents (*BURNETT*)

Scope and Content

- What do you already know?
- What do you need to learn to write this document?
- What information do you want to include and exclude?
- What's the scope of the document?
- What examples and explanations will help achieve the purpose?

Purpose

- Do you want to inform? Persuade? Instruct? Train?
- What is the best way to accomplish your purpose?

Task

- How do you define the task of producing this document?
- What support will you receive? Collaborators? Resources?
- What is the schedule?
- Who's in charge of the project?

Audience

- Who are the readers of your document?
- What are their characteristics? Their needs?
- How will the readers use the document?

Constraints

- What constraints exist? Time? Format? Audience? Organizational support? Data collection?
- How should you deal with these constraints?

Organization

- What is the most effective way to organize the information?
- Which information should be presented verbally and which should be presented visually?

Design

- How can the design reinforce the purpose of the document?
- What design features will appeal to the audience?

Questions To Help Collaborators Deal With Content and Other Concerns (*BURNETT*)

- Content*
- What critical information needs to be included in this document?
 - What additional information might you/we include?
 - Have you considered including _____?
 - What content can be omitted?
- Purpose and Key Point(s)*
- What do you see as your/our main purpose?
 - What main point(s) do you/we want to make?
 - How will the audience react to the purpose and points?
 - I see a conflict between _____ and _____.
 - How can you/we resolve it?
- Audience*
- Who is your/our intended audience?
 - What do the readers expect to learn?
 - How do you think the readers will react to _____?
 - What problems, conflicts, inconsistencies, or gaps might readers see?
- Organization and Support*
- How can you/we organize the content to achieve the purpose?
 - What evidence can you/we use to support the purpose and appeal to the audience?
 - What examples (anecdotal, statistical, visual, and so on) should you/we use?
 - How are you/we going to connect _____ and _____?
- Document Design Elements*
- How can design features be used to convey the main point(s)?
 - What design features will the audience expect? What will they respond to?
 - How can verbal and visual information be balanced?
 - How can the design be used to reflect the organization of the content?

Ways to Sabotage Excellence in Collaboration (*BURNETT*)

Miss meetings.

Show up late.

Don't bother to talk about what the group goal is.

Don't ever allow discussion of anything not on the agenda.

Don't establish an agenda.

Ignore established agendas and procedures.

Disagree with everything just because you don't want to be there.

Agree with everything just because you don't want to be there.

Keep quiet, even when you have another idea.

Hoard your information.

Give up on your idea without even explaining it.

Make yourself responsible for everything.

Don't take responsibility for anything.

Plan to get everything done in one big work session.

Expect that many hands make quick work.

Keep meetings going for over two hours.

Compete for individual recognition.

Elevate personal success above group success.

Don't bother to keep track of what is discussed.

Don't establish ways of communicating outside of scheduled meetings.

Rely solely on guesses to make decisions.

Don't establish any way to assess individual progress.

Attempt to include everything anyone ever said.

Expect the worse from your group members.

Don't let the group get to know you.

Strive for quick consensus on every issue.

Believe that everything runs smoothly in good collaboration.

Never laugh.

Responses to Requests or Inquiries (*BURNETT*)

Positive Responses

1. Acknowledge the request or inquiry.
2. Say "yes".
3. Include the information or identify an accessible source for the information
4. Offer additional helpful suggestions if appropriate.
5. Build goodwill.
6. Conclude in a friendly manner.

Negative Responses

1. Acknowledge the request or inquiry.
2. Explain what makes a refusal necessary.
3. Say "no" directly to avoid misunderstanding.
4. Offer an alternative.
5. Build goodwill.
6. Conclude in a friendly manner.

The You Attitude (*MARKEL*)

Following are examples of thoughtless sentences, each followed by an improved version that exhibits the *you attitude*:

- EGOTISTICAL:** Only our award-winning research and development department could have devised this revolutionary new pump.
- BETTER:** Our new pump features significant innovations that you may appreciate.
- BLUNT:** You wrote to the wrong department. We don't handle complaints.
- BETTER:** Your letter has been forwarded to the Customer Service Division.
- ACCUSING:** You must have dropped the engine. The housing is badly cracked.
- BETTER:** The badly cracked housing suggests that your engine must have fallen onto a hard surface from some height.
- SARCASTIC:** You'll need two months to deliver these parts? Who do you think you are, the Post Office?
- BETTER:** Surely you would find a two-month delay for the delivery of parts unacceptable in your business. That's how I feel too.
- BELLIGERENT:** I'm sure you have a boss, and I doubt if he'd like to hear about how you've mishandled our account.
- BETTER:** I'm sure you would prefer to settle the account between ourselves rather than having it brought to your supervisor's attention.
- CONDESCENDING:** Haven't you ever dealt with a major corporation before? A 60-day payment period happens to be standard.
- BETTER:** Perhaps you were not aware of the standard 60-day payment period.
- OVERSTATED:** Your air-filter bags are awful. They're all torn. We want our money back.
- BETTER:** You will doubtless be surprised to learn that 19 of the 100 air-filter bags we purchased are torn. We hope you agree that refunding the purchase price of the 19 bags—\$190.00—is the fair thing to do.

Reasons Proposals are Disapproved (*BURNETT*)

- lack of new or original ideas
- diffuse, superficial, or unfocused research plan
- lack of knowledge of published relevant work
- lack of experience in the essential methodology
- uncertainty concerning the future directions
- questionable reasoning in the experimental approach
- absence of an acceptable scientific rationale
- unrealistically large amount of work
- lack of sufficient experimental detail
- uncritical approach

Arguments to Amplify Proposals (*MARKEL*)

- The old way doing things is totally wrong. I am offering a new way.
- The old way is incomplete. My way fills in the gaps.
- The problem has been handled in many ways before. I will combine several of the best ways.
- The old way is good but has never been tried in this area. I will apply it in a new way.
- There are X number of solutions, but only mine will work.
- There are X number of solutions, but only mine is feasible (economically, socially environmentally etc).

Proposals (*MARKEL*)

The following checklist covers the basic elements of a proposal. Any guidelines established by the recipient of the proposal should of course take precedence over these general suggestions.

1. Does the summary provide an overview of
 - the problem or the opportunity?
 - the proposed program?
 - your qualifications and experience?

2. Does the introduction indicate
 - the problem or opportunity?
 - the purpose of the proposal?
 - the background of the problem or opportunity?
 - the scope of the proposal?
 - the organization of the proposal?
 - the key terms that will be used in the proposal?

3. Does the description of the proposed program
 - cite the relevant professional literature?
 - provide a clear and specific plan of action?

4. Does the description of qualifications and experience clearly outline
 - your relevant skills and past work?
 - the skills and background of the other participants?
 - your department's (or organization's) relevant equipment, facilities, and experience?

5. Is the budget
 - complete?
 - correct?

6. Do the appendices include the relevant supporting materials, such as a task schedule, a description of evaluation techniques, and evidence of other successful projects?

Generic Form for Proposals and Feasibility Reports (*BURNETT*)

- Define and substantiate the problem and provide an overview of the solution or plan.
- Situate the problem, summarizing previous attempts to deal with the problem.
- Present a technical solution, including details of the plan.
- Explain how the plan will be implemented.
- Provide specific cost information.
- Schedule the implementation, the milestones, the evaluation.
- Evaluate how progress will be monitored and how success will be determined.
- Describe your organization's capabilities and those of the key personnel who will implement the proposal.

Components for Formal, Less Formal and Informal Proposals (BURNETT)

	Formal	Less Formal	Informal
<i>Title Page</i>	■	■	
<i>Table of Contents</i>	■	■	
<i>List of Figures</i>	■		
<i>Abstract/Executive Summary</i>	■	■	■
<i>Introduction</i> state problem recommend solution present scope and plan of report	■		
<i>Background</i> discuss relevant background identify state-of- the-art work	■		
<i>Technical Solution</i> define and discuss proposed plan discuss in relation to standards/ specifications	■	■	■
<i>Management</i> explain how, who, when of management organization personnel	■	■	
<i>Budget</i> labor materials support services	■	■	
<i>Schedule</i> planning implementation evaluation	■	■	■
<i>Evaluation</i> measure objectives monitor progress	■	■	
<i>Organization Capabilities</i> facilities experience personnel proof of capabilities	■	■	
<i>Conclusion</i>	■	■	
<i>Summary</i>	■		
<i>Appendix</i>	■	■	

Content Differences in Various Types of Proposals

Differences in Content	Proposal to Solve a Problem	Proposal to Investigate a Subject	Proposal to Sell a Service or Product
<i>Introduction</i>	identify and define the problem	identify and define the subject	identify and define the need
<i>Technical Solution</i>	<p>explain a workable solution that has clear benefits</p> <p>establish a connection between the problem and the solution</p> <p>provide a plan for implementing the solution</p>	<p>justify the importance and benefits of the inquiry</p> <p>establish the limits of the inquiry</p> <p>provide a plan for pursuing the inquiry</p>	<p>explain a service or product that meets the need</p> <p>establish a connection between the need and service or product</p> <p>provide a plan to deliver the service or product</p>

The Structure of Rogerian Argument (*BEENE & WHITE*)

Step 1

- State the facts of the situation in as neutral a context as possible.
- Avoid evaluating the situation.
- Use third-person, passive voice verb constructions to focus the reader's attention impersonally on the situation itself, on the action(s), not on the actor(s) involved.

Step 2

- Demonstrate understanding of the reader's point of view by discussing the document's subject in the context of the reader's interests.
- Use active voice, second- or third-person verb constructions that portray the audience as the actor.
- Focus attention on the reader's action and on your perception of the reader's role. Then, shifting from second-person to first-person plural verb constructions, unite your action(s) and perception(s) with the reader's, establishing a common ground of mutual understanding and concern.

Step 3

- Finally, state your aims or goals or analysis of the situation boldly and straightforwardly in the context of mutual understanding and concern established in steps 1 and 2.
- Make value judgments and ask for what you want.
- Use first-person singular and plural verb constructions.

Example of Rogerian Argument

First proposal

Oilco cannot afford to ignore the accompanying abstract. It should prove to be of great interest to our company because of its application to both mineral processing and oil production technology. Indeed, it is probable that the proposed program could only be undertaken by a company of our size and diversity. Thus the competition is minimized. The program involves research and development of the largest Red Sea geothermal deposit, the Atlantis II Deep. This deposit consists of unconsolidated sediments in several mineralogical facies of varying metallic content. These sediments would be recovered by fluidization of the facies. The material would then be pumped to a surface platform. Oilco now has the great opportunity to develop and patent fluidization technology. This will enable us to become the sole purveyor of this technology, which must be used to profitably extract ores from various marine deposits. Our position astride the oil and mineral extraction fields puts us in the best position to exploit such marine deposits. I feel that this abstract deserves the most serious consideration by you and your staff.

Revised proposal

The accompanying abstract proposes research and development of the largest geothermal mineral deposit in the Red Sea, the Atlantis II Deep. This deposit consists of unconsolidated sediments in several mineralogical facies of varying metallic content. These sediments would be recovered by fluidization of the facies. The material would then be pumped to a surface platform.

Oilco's position astride both the oil and the mineral extraction fields puts us in a good position to develop and apply the necessary mineral processing and oil production technology.

Because the proposed program probably can be undertaken only by a company of Oilco's size and diversity, our competition would be minimal. We could possibly become the sole purveyor of a new extraction technology and the world leader in marine mining.

Oilco cannot afford to ignore the accompanying abstract. I feel that it deserves the most serious consideration by you and your staff. May I begin researching the project as soon as I have your approval?

Proposal Checklist (*GEORGE J. WILKERSON*)

<http://www.drwrite.com/lab/proposals/cheklist.shtml> in <http://www.drwrite.com/>

EXECUTIVE SUMMARY

- one (1) page long
- not more than 250 words
- Begins with "This is a project intended for the *Education, Culture, and Lifelong Learning primary application area.*"
- Defines the goal(s) of the project
- Specifies the anticipated outcomes
- Tells how the proposed solution will make a difference in the community
- Tells how many sites there are and where they are
- Tells how/who the communities are to be served
- Tells how/what organizations are participating as project partners
- Tells what technologies are to be employed
- Tells what users will do with the technology

PROJECT NARRATIVE

- succinct and clear
- Proofed for
 - stylistic inconsistencies
 - redundancies
 - factual omissions
 - unexplained assumptions

PURPOSE AND EFFECTS

- Project Purpose defined
- importance of project
- how it will make a real difference
- project's impact on the community and users
- proposed project is both reasonable and achievable
- specific need or problem is defined
- how information infrastructure services and technologies will provide the community with a realistic and effective mechanism
- logical link between the problem and the solution.
- what we expect to change in the community
- who will be impacted
- specific, realistic outcomes expected within the grant award period
- expected longer term effects beyond the grant award period

INNOVATIONS AND ALTERNATIVES

- all innovations defined and explained
- project is placed in a national/international context
- insight provided on the use of network technology that can be shared
- aspects of the project that can be replicated
- technology that we will employ described in detail
- rationale for selecting this technology is clear
- all necessary diagrams and pictorial materials included

- ___ how it would operate with other systems is explained
- ___ how it can grow to accommodate additional users is explained
- ___ technological alternatives discussed and why our approach is superior explained
- ___ plans for maintaining and/or upgrading the system discussed

INTERACTIVITY AND EXPANSION

- ___ how our system will work with other relevant networks or services described as concretely as possible
- ___ our use of standards justified
- ___ how the system can accommodate growth beyond the grant period is explained
- ___ Show not only that our technical approach best meets our goals, but that, to the greatest degree possible, our project can take advantage of existing infrastructure and commercially available telecommunications services
- ___ plans for maintaining the system and for upgrading explained

TEAM MEMBERS, BUDGET, AND RESOURCES

- ___ evidence provided that the applicant team can deal with both the technical complexity and the organizational challenges associated with managing the project
- ___ qualifications of the project team are described
- ___ budget is appropriate
- ___ budget is clearly related to the tasks in the Project Narrative
- ___ resources outlined in the budget are sufficient to accomplish the tasks and objectives
- ___ proposed implementation schedule identifies major project tasks and milestones
- ___ schedule allows enough time for the project to be developed, implemented, and fully evaluated during the grant period.
- ___ A clear timeline sets out the milestones you expect to reach at various stages
- ___ project exhibits economic and organizational viability beyond the grant period
- ___ anticipated ongoing expenses and potential sources of non-federal funds to sustain the project economically and operationally are discussed
- ___ start-up partners and their responsibilities are discussed
- ___ communities to be served by the project support it
- ___ communities will participate in project's development
- ___ steps taken and to be taken to involve the community are discussed
- ___ plans for involving and supporting the project's end users are discussed
- ___ how we intend to protect the privacy of individuals affected by the project is discussed
- ___ needs of all potential end users, including those with disabilities, are addressed
- ___ benefits for partners and their specific contributions (financial support, equipment, personnel, etc.)
- ___ plans for maintaining the partnerships
- ___ partners' commitments documented to the project. (letters of commitment)
- ___ past work with partners addressed (nature and results of projects and the project responsibilities)
- ___ why the partner is joining with us

STAKEHOLDERS AND END USERS

- steps taken to include a wide variety of community stakeholders in the planning of development of the project ideas.
- open meetings?
- surveys?
- focus groups?
- Met with representatives
- Developed a steering committee?
- Developed an advisory panel?
- benefits that stakeholders envision are described
- needs, skills, working conditions, and living environments of end users identified
- end users identified and described
- end users involvement in the design of the project
- end user recruitment
- end user training
- end user ongoing technical support
- end user interaction with the technology
- plans for protecting privacy of end users and beneficiaries
- privacy and confidentiality discussed
- disparities within the population(s) described and documented
- profile of the community and beneficiaries
- strategies for overcoming barriers to access

EVALUATION AND DISSEMINATION

- a clearly defined evaluation plan
- specific criteria for assessing success are included
- specific criteria for evaluating the degree to which the project achieved its goals and objectives are included
- well articulated documentation plan enhances evaluation and aids in information dissemination
- an appropriate dissemination plan ensures the results of our efforts
- dissemination plan ensures that results are as broadly distributed as possible.
- each element (i.e., evaluation, documentation, and dissemination) is closely aligned, resulting in the systematic acquisition and assessment of information to provide useful feedback to the project team, and others interested in our project.
- an appropriate dissemination plan assured
- evaluation plan is consistent with the objectives and goals
- evaluation plan is coupled with a program implementation plan and schedule.
- clear goals and precise quantitative expressions of the conditions, circumstances, or populations to be addressed lead to the formulation of specific and measurable objectives in the evaluation plan.
- questions evaluation will answer are defined
- project goals and objectives, implementation plan, and anticipated consequences provide the basis for formulating evaluation questions.
- relation between expected outcomes, efforts, and what is important to evaluate is clear
- approach to be taken to find answers to the evaluation questions is specified
- criteria to use to assess lessons learned from the project are defined
- technology assessment and defined populations are included in the evaluation
- data and method of data collection defined
- how project staff will collect data is explained

- ___ allocation of resources are sufficient to conduct the proposed data collection techniques
- ___ proposed method for analyzing data is defined
- ___ techniques for analysis are appropriate for the types of data to be collected
- ___ individuals or groups involved in conducting the evaluation are identified
- ___ qualifications of latter are defined
- ___ responsibilities of key personnel are defined
- ___ budget reflects sufficient funds to carry out a thorough and useful evaluation
- ___ documentation plan has potential to be replicated and serve as a demonstration
- ___ accurate and complete documentation of implementation process and project operation
- ___ sustainability and diffusion of innovative applications of telecommunications and information technologies is assured
- ___ documentation provides the data for external evaluation of project impacts by other practitioners
- ___ documentation provides answers to questions these innovative projects draw from all interested parties
- ___ documentation techniques include
 - ___ project logs
 - ___ visitor reports
 - ___ databases
 - ___ videotapes of events
 - ___ unanticipated events
- ___ plan for disseminating information included
 - ___ description of who we intend to target for dissemination
 - ___ description of how and when evaluation feedback will be made available.
 - ___ details on how we will disseminate information:
 - ___ descriptions of the types of reports and other by-products we will produce

Words for Relationships (*ANDREYEV*)

Cause & Effect

thus, hence	<i>donc</i>
since	<i>puisque</i>
therefore, thus	<i>donc</i>
thanks to (only positive)	<i>grâce à</i>
consequently, as a result	<i>par conséquent</i>
for that reason, on that account	<i>pour cette raison</i>
owing to, due to, on account of, because of	<i>à cause de</i>
otherwise	<i>sinon</i>

Purpose

in order to, so as to, for the purpose of	<i>afin de</i>
so that, in order that (+can/could, shall/should, may/might)	<i>afin que</i>

Opposition

even if	<i>même si</i>
however, yet	<i>cependant</i>
whereas, while	<i>alors que</i>
despite, in spite of	<i>malgré</i>
nonetheless, nevertheless	<i>néanmoins</i>
as opposed to, contrary to, in contrast with	<i>contrairement à</i>
though, even though, although	<i>quoique, bien que</i>
on one hand... on the other hand...	<i>d'un côté... de l'autre...</i>
at first glance, on further examination	<i>à première vue, de + près</i>
it is doubtful that	<i>il est douteux que</i>
one is reluctant to say that	<i>on hésite à dire que</i>
there is little evidence that	<i>il est difficile de prouver que</i>

Conditions

provided that, so long as	<i>pourvu que</i>
depending on whether...(or not)	<i>ce qui dépend de...</i>

Certainty

doubtless, of course	<i>bien entendu</i>
obviously, evidently	<i>évidemment</i>

Proof

this is evidenced, supported, proved by the fact that	<i>ceci est prouvé, soutenu par le fait que</i>
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Time

with time
afterwards
from now on
from then on
sooner or later
eventually, in the end
in the future, in the past
retrospectively, looking back
at the present time, at present, currently
after (+ Noun or Present Participle)

avec le temps
ensuite (adv.)
désormais, dorénavant
dès lors, (passé)
tôt ou tard
à la fin, en fin de compte
à l'avenir, dans le passé
rétrospectivement
à présent, actuellement
après

Added Information

even so, still (and all)
moreover, besides, furthermore, in addition

tout de même, quand même
du reste, de plus

Degree

to the extent (degree) that...
to a certain extent (degree)
to a great, slight extent

dans la mesure où...
dans une certaine mesure
dans une grande (faible) mesure

Judgment

from this point of view (viewpoint)
on the basis of these arguments
judging from these examples

de ce point de vue
à partir de ces arguments
à en juger par ces exemples

General

in fact, actually
according to
all in all, on the whole
and so forth, and so on
as a general rule, generally speaking
as a whole, globally
as concerns, concerning
as regards, regarding, with regard to
at first
finally
first, firstly
formerly
if need be
in any case, in any event
in short, briefly
in terms of, in function of

en fait, effectivement
selon
dans l'ensemble
et ainsi de suite
en règle générale
en bloc, globalement
en ce qui concerne
à propos de
au premier abord, à première vue
en dernier lieu
d'abord
jadis, autrefois
le cas échéant
en tous cas, dans tous les cas
bref
en fonction de

in this regard, regarding
insofar as X is concerned
lastly, in conclusion
later (on)
lately, recently
notably, especially
previously, previous to X
principally, largely
so to speak
so, thus

so-called
that is to say ..., i.e.,...
the former, the latter
thereby

à ce propos
à propos de X
en dernier, en conclusion
plus tard
récemment
notamment
auparavant, avant X
dans une grande mesure, pour la plupart
pour ainsi dire
par conséquent (use "so" preferably in mid-sentence)
soi-disant
c'est-à-dire
celui (ceux)-ci, celui (ceux)-là
de cette manière

Gallicisms

Just won't work...

Television takes an important part in our lives.

Unemployment touches all parts of society.
The population doesn't stop increasing.

This is an important fact of our society.

We meet problems...

We are knowing a period of...

We can profit from different kinds of training.

They practice many jobs in their life...

Is it X or Y on which are based all relationships?

In a first time, I am going to study...

An important number of people were killed as a result of...

The rate of change is very important in our society.

People should take more care of the news.

People don't take care of the importance of human relations.

We have always to remember that...

We haven't to think that...

We have to notice that...

In the past years, science has increased...

They did a scientific experience where...

In the economic area...

It is important to consider problems as X, Y, Z...

Drugs can be dangerous. So we have to be informed.

Just won't work...

We could find many examples of...

In the today society...

The society is improving very fast.

Say it with style !

Television **plays** an important role (part) in our lives.

Unemployment **affects** all **levels** of society.

...**keeps on** increasing.

...**continues to** increase.

...an **important feature in** ...

...an important **factor in** ...

(He mentioned the fact that...)

We **encounter, run into, meet up with** problems.

We are **undergoing, experiencing, going through** a period of

But: We have known a period of...

General: We take advantage of ...

Material: He profited from the high rate of the dollar.

They **do a lot of jobs** in their lives.

(*Plural Subject, Plural Object*)

Is it X or Y **on which all relationships are based?** (*no inversion in English*)

First of all, ...

Secondly, ...

A large number of people...

A great many people...

The rate of change is **very high**...

(*"important" is not quantitative*)

People should **be more interested in** the news.

People aren't **interested in** ...

People don't **pay attention to**...

People don't **take into account**...

But: He took care of the office while I was out.

We **always should** (have to)...

(*adv. of frequency before verb*)

We **shouldn't think** that...

We **should note,** observe that...

Science **advances, progresses, makes strides**...

They did a **scientific experiment in which**...

(*where = places only*)

In the **economic sector**...

...problems **such as** X, Y, Z.

Therefore we have to...

(*use "so" in mid-sentence*)

Say it with style!

We **can** find...

Many examples can be found...

(*could = conditional or past*)

In **today's society**...

Society is **progressing rapidly**.

The 80's way of life...

People have always known to deal with this problem.

In big cities, people are strangers to themselves.

They are boring with life...

This shows an evolution in mentalities.
We evolve today in a changing world.

People must get rid of their car. They are dissatisfied with their life.

In this way, they could cure more efficiently babies with that disease.

They can't any more cope with the problem.

They could make advance medical research more rapidly.

All the book is based on social problems.

This is a big phenomenon in today's society.

...to integrate in society...

This appears like a contradiction.

This is a very worrying problem for the future.

In future, ...

It's up to the consumer to choice.

Today we have no time to relax; it's something new in society.

It's the reason why we're ending our list.

Just won't work...

As for cars, the Americans' ones are bigger.

The nowadays problems
The today's problems
paradoxal, paradoxally
a pacific

The way of life of the 80's...

People have always known how...
(to know how to do sthg)

... people are strangers **to each other**.
(reciprocal, not reflexive)

They **are bored** with life.

But: This is not **a boring** book. *(adj.)*

This shows a **change** in mentality
We **are living** in a changing world.

*(evolution implies progress:
Air travel has evolved since...)*

People **should get rid** of their cars.

They are **unhappy** with their **lives**
(Plural Subject, Plural Object)

...they **can cure** babies with that disease **more efficiently**.

*Word order: don't separate verb and object,
adverbs at the end.*

...**can't cope** ...**any more** (longer)

...**can cope** ... **no longer**.

...**can no longer cope**...

Word order: (would) be able to make **medical research advance**...

The **whole / entire** book is based ...

All the books are based ...

This is an **important** phenomenon in today's society.

...to **integrate into** society...

This **appears to be** ...

This **seems to be** ...

This is a **worrisome, disquieting, unsettling** problem for the future.

In **the** future...

It's up to the consumer **to choose** (a choice).

Today we have no time to relax; **this** is something new... *(use this to refer to ideas, it to refer to things)*

This is the reason (why) we're ending our list.

Say it with style!

... American cars / the Americans' cars / the Americans' ...

(No "one" with possessive)

Today's problems...

Nowadays, ...*(adverb)*...

paradoxical, paradoxically

a **pacifist** *(noun)*

a pacific demonstration
a critic
a scientific

communistic
Sovietic
totalitarianist
totalitarianism

The important is to know...

They didn't think to do it.
They don't know to solve it.
Why to increase subsidies?
What to do to solve the problem?
the nuclear

energetic resources

in USSR
in United States
in United Kingdom

the Prime Minister Thatcher's policy
the President Reagan's speech

It is a problem who...
The government says his policy ...
I saw a program at the TV...
They want that people understand.
Without to know...
Before to summarize...
The idea had a big success...
They didn't success to do it ...

Just won't work...

The U.S. faces to the task of ...
In front of this situation ...
the consumption society
multinational societies
an increase of production

The writer doesn't precise...

a **pacifist** demonstration (*adj.*)
a **criticism** (a critic = a person)
a **scientist** (*noun*),
But: a scientific research (*adj.*)

communist (*noun and adj.*)
Soviet (*noun and adj.*)
totalitarian (*adj.*)
totalitarianism (*noun*)
*But: a pessimist, an optimist (noun),
pessimistic, optimistic (adj.)*

What is important is to know...
The important thing is to know...

They didn't **think of doing** it...
They don't **know how to** solve it ...

Why increase... ?
What can be done... ?

nuclear energy, nuclear policy
(*adjective only*)

energy resources, problems, **energy-giving**,
energetic substances / an energetic person,
energetic steps, measures...

in **the** USSR
in **the** United States
in **the** United Kingdom
(*"the" with unions, federations*)

Prime Minister Thatcher's policy
President Reagan's speech
(*No "the" with title + name*)
But: the Prime Minister's policy ...

It is a problem **that, which**...
The government says **its** policy ...
I saw a program **on** (the) **TV**...
They **want / expect** people **to** understand.

Without knowing...
Before **summarizing** ...(*prep. + -ing*)
The idea has **a lot of success**, was successful
They didn't **succeed in** doing it.

Say it with style!

The U.S. **faces, is faced with** the task of ...
Faced with, in face of, facing this situation...
the consumer society
multinational **companies, firms, corporations**
an increase in price, production
an increase of 10% in ...
X has increased by 10%.

The writer doesn't **explain, specify**...

I speak very well German.
I liked very much the film.

I have gone in England twice.

It's maybe the solution to create more jobs.

I don't know what is the answer.
I don't know where is the answer.
I don't know why is the problem.
We don't know what will we do.

We can say ...
We can wonder...
We can notice...
We can be surprised...

DON'T SAY

What means X?

I will now explain you X ...
I will now describe you X ...

This will allow to ...
 permit to...
 enable to ...

They suggest (him) to do ...
They propose (him) to do ...
They don't mind to go...
I'm not used to speak English...
They didn't stop, finish to talk.

People is ...
Every people...
Most of people...

There is two ways...

I would like to say you ...

They ask to him...
They obey to him...
They satisfy to needs ...

They succeeded to do X.
They participated to X.
They had difficulties to do X.

It depends of ...
It is different of ...
People are responsible of ...
Two millions of people ...

I speak German very well.
I liked the film very much.
(*Word order: S+V+cd+adv*)

I have **gone to** England twice...
(use "to" with movement, direction)
But: I lived in England last year.

The solution may be to create ...

I don't know **what the answer is**.
I don't know **where the answer is**.
I don't know **why the problem has arisen**.
We don't know **what we will** (be able to) **do**.
(*No mid-sentence inversion S & V*)
Of course: what will we do? etc.

It can be said that...
We wonder whether, why ...
We note, it can be noted that...
It is surprising that...

DO SAY!

What does X mean?

But: I don't know what X means.

I will now **explain** (describe) **X to you**...
I will now **explain** (describe) **to you X** ...
(*c.d. obligatory*)

This will allow, permit, enable **X to** ...
(*c.d. obligatory*)
Or: make it possible to ...

They **suggest, propose** (his) **doing** that he
(should) do ...

They don't **mind going**...
I'm not **used to speaking** English.
They didn't **stop, finish talking**.

People **are** ... (people = plural)
All people...
Most people ... (most of **the** people)

There are two ways / is one way
...to tell you ... (+person) say that...

They **ask him**...
They **obey him** ...
They **satisfy needs**...

They **succeeded in doing** X.
They **participated in doing** X.
They had **difficulties** (in) **doing** X.

It **depends on** ...
It is **different from**...
People **are responsible for** ...

Two million people (number = no **S**)
A million people (sing. = no **S**)
Millions of people (no number + **S**)

Uncountable Nouns

It's a difficult work.

He gives a good advice.

Researches have been done.

The news are discouraging.

Many progress have been made.

I read an interesting information.

They spend many money.

They have few time.

It's a difficult **job**

My work is difficult.

He gives (**some**) good advice.

He gives **a good piece of advice**.

Research has been done.

The news is discouraging.

Much progress has been made.

I read **some** interesting **information**

(Or: **an interesting piece of...**).

A lot of money...(*uncountable*)

A little time ... (*uncountable*)

DON'T SAY !

They have much friends.

They have less friends.

A political man

The new educational politic

An economical crisis

They did an agreement.

Excuse-me, I did a mistake.

According to me...

Despite of this...

On one side..., on the other, ...

Be especially careful!

He have a good idea...

He make a good study of...

He say it is a good idea...

They have make a study...

They have say it is important...

I'm agree with...

I'm disagree with...

DO SAY !

Many friends... (*countable*)

Few friends ... (*countable*)

A politician, head of state

The new educational **policy**

An **economic** crisis

(*And*: an economical car)

They **made (came to)** an agreement.

Excuse-me, I **made a mistake**.

As I see it, in my opinion...

Despite this...or In spite of this...

On one hand..., on the other (hand)...

DON'T FORGET!

He **haS** a good idea

He **makeS** a good study of...

He **sayS** it is a good idea...

They **have made** a study...

They **have said** it is important...

I agree with...

I disagree with...

Interview

I show you my identity card?

Here is it.

Do I begin?

Do you want I begin?

Would you like I begin?

Do I make a summary?

Would you mind I speak about ... ?

Do I give my opinion?

Please, what means ... ?

Please, I don't understand what you say.

Please, I haven't understand your question.

Can you repeat please?

What you mean by "implications»?

Do I finish now?

Do I say the next person to come in?

Do you want to, would you like to see my identity card?

Here it is.

Shall I begin?

Do you want me to begin now?

Would you like me to begin now?

Shall I summarize the article?

Would you mind if I spoke about... ?

Shall / may I give my opinion?

Would you mind if I gave my opinion about ... ?

Excuse-me, what does X mean?

Would you mind telling me what X means?

Sorry, I don't understand **what you just said.**

Sorry, **I'm not quite sure** I understood what you said.

Sorry, **I didn't understand** your question.

Would you mind repeating what you just said please?

Could you please repeat what you just said?

What do you mean by "implications»?

Shall I end, finish up, conclude now?

Shall I tell the next person to come in?

Les Faux-Amis

A

ability = *capacité* ♦ *habileté* = skill
to abuse = *injurier* ♦ *abuser de* = to misuse, take advantage of
actual = *vrai* ♦ *actuel* = present, current
actually = *vraiment, en fait* ♦ *actuellement* = now, at present
an advertisement = *une réclame, une publicité* ♦ *avertissement* = warning
advice (*indénombrable*) = *conseil* ; a piece of advice = *un conseil* ♦ *avis* = opinion
affluence = *richesse* ♦ *affluence* = crowd
to affront = *insulter* ♦ *affronter* = to face
agenda = *ordre du jour* ♦ *agenda* = diary
alien = *étranger* ♦ *aliéné* = lunatic, mental patient
to alter = *changer* ♦ *altérer* = to impair
a.m. (ante meridiem) = *matin* ♦ *a.m. (après-midi)* = p.m. (post-meridiem)
ancient = *très vieux, très âgé* ♦ *ancien* = former, old
to arrive = *arriver (quelque part)* ♦ *arriver à faire* = to manage to do
aspect = *côté (d'une question ou d'un problème)* ♦ *aspect* = appearance
to assist = *aider* ♦ *assister à* = to attend, to see
assistance = *aide* ♦ *assistance* = audience
to attend = *assister à* ♦ *attendre* = to wait (for)
axe = *hache* ♦ *axe* = axis

B

bachelor = *homme célibataire* ♦ *bachelier* = person with GCE (GB), High School Graduate (US)
balance = *équilibre* ♦ *balance* = scales, weighing machine
barracks = *caserne* ♦ *baraque* = hut, shed
benefit = *avantage* ♦ *bénéfice* = profit
blouse = *chemisier* ♦ *blouse* = overall
brigadier = *général de brigade* ♦ *brigadier* = corporal

C

camera = *appareil photo* ♦ *caméra* = cine-camera
capacity = *capacité (volume)* ♦ *capacité (intellectuelle, etc.)* = ability
car = *voiture* ♦ *un car* = a coach
caution = *prudence, précaution* ♦ *caution* = deposit
cave = *grotte* ♦ *cave* = cellar
chance = *possibilité / hasard* ♦ *chance* = (piece of) luck
character = *caractère (disposition), personnage (littéraire)* ♦ *caractère (trait, aspect)* = characteristic ; *mauvais caractère* = bad temper
to charge = *accuser* ♦ *charger (un camion, etc.)* = to load

chimney = *cheminée (sur le toit)* ♦ *cheminée (foyer)* = fireplace
 chips = *pommes frites* ♦ *chips* = crisps (anglais américain : *chips* = chips ; *pommes frites* = French fries)
 circulation = *circulation (en général)* ♦ *circulation routière* = traffic
 college = *faculté, grande école, etc.* ♦ *collège (CES)* = school, junior high school (US)
 to command = *commander (dans l'armée, etc.)* ♦ *commander (dans un restaurant)* = to order
 complete = *entier* ♦ *complet (plein)* = full
 comprehensive = *complet (qui comprend l'ensemble)* ♦ *compréhensif* = understanding
 concurrence = *accord (to concurer = être d'accord)* ♦ *concurrence* = competition ♦
un concours = a competition
 to conduct = *diriger (un orchestre), être conducteur de (chaleur, électricité)* ♦
conduire = to drive, to lead
 conductor = *chef d'orchestre, chef de train (US), receveur d'autobus (GB)* ♦ *conducteur* = driver
 conference = *congrès, réunion de travail, séminaire* ♦ *conférence* = lecture
 confident = *sûr* ♦ *un confident* = a confidant
 confidence = *confiance* ♦ *une confidence* = a confidence
 confused = *pas clair, embrouillé (idées, explications, etc.)* ♦ *confus* = embarrassed
 conscience = *conscience (morale)* ♦ *conscience (intellectuelle et physique)* = consciousness
 to control = *diriger, maîtriser* ♦ *contrôler* = to check
 corpse = *cadavre* ♦ *corps* = body, corps
 course = *stage, série de conférences ou champ de courses* ♦ *course* = race ♦ *cours* = class, lesson
 a critic = *un critique* ♦ *une critique* = a criticism, a review
 to cross = *traverser* ♦ *croiser* = to pass, to meet
 to cry = *pleurer* ♦ *crier* = to shout, to scream

D

to deceive = *tromper* ♦ *décevoir* = to disappoint
 deception = *tromperie* ♦ *déception* = disappointment
 to defend = *défendre (contre une agression)* ♦ *défendre (interdire)* = to forbid, to prohibit
 definite(ly) = *certain(ement)* ♦ *définitif* = permanent ; *définitivement* = for ever, for good
 delay = *retard* ♦ *délai* = time, time-limit
 to deliver = *livrer* ♦ *délivrer* = to free, to liberate
 to demand = *exiger* ♦ *demander* = to ask
 deputy = *adjoint* ♦ *député* = Member of Parliament
 to deserve = *mériter* ♦ *desservir (train, etc.)* = to stop at ; *desservir (la table)* = to clear (the table)
 to design = *établir le plan (d'un bâtiment, etc.), créer (une robe, etc.)* ♦ *dessiner* = to draw
 desire = *désir très fort (souvent sexuel)* ♦ *désir* = wish ; *désirer* = to want
 diploma = *diplôme (en général)* ♦ *diplôme universitaire* = degree
 distraction = *le fait d'être distrait* ♦ *distraktion (divertissement)* = entertainment
 dramatic = *théâtral / frappant / spectaculaire* (ex : dramatic progress) ♦ *dramatique* = terrible, disastrous
 drug = *médicament* ♦ *drogue* = narcotic, hard or soft drug

E

editor = *rédacteur en chef, ou personne qui prépare un manuscrit pour l'imprimeur* ♦ *éditeur (maison d'édition)* = publisher
education = *instruction, éducation à l'école* ♦ *éducation à la maison* = upbringing
emergency = *urgence (médicale, etc.)* ♦ *émergence* = emergence, appearance
encore ! = *bis !* ♦ *encore* = still, again ♦ *pas encore* = not yet
engaged = *occupé / fiancé* ♦ *engagé* = politically committed, involved
to envy = *envier, convoiter* ♦ *avoir envie de* = to want
essence = *essence, extrait* ♦ *essence (pour voitures, etc.)* = petrol
to evade = *éviter* ♦ *s'évader* = to escape
eventual = *final* ♦ *éventuel* = possible
eventually = *finalement* ♦ *éventuellement* = perhaps, possibly
evidence = *preuves / témoignages* ♦ *évidence* = something obvious
evolution = *évolution de l'espèce* ♦ *évolution (autres sens)* = development
excited = *animé, excité (en général)* ♦ *excité (sexuellement)* = aroused
experience = *expérience(s) vécue(s)* (to experience = *éprouver, vivre*) ♦ *une expérience scientifique* = an experiment
to expose = *exposer (en général)* ♦ *exposer (peinture, etc.)* = to exhibit ; *exposition* = exhibition

F

to fail (to do something) = *ne pas réussir* ♦ *j'ai failli faire quelque chose* = I nearly did something
fantasy = *fantasme* ♦ *fantaisie* = imagination
fault = *défaut* (it's my fault = *c'est de ma faute*) ♦ *une faute* = a mistake
figure = *chiffre / silhouette* ♦ *figure* = face
front = *front (partie antérieure)* ♦ *front (partie du visage)* = forehead
to furnish = *meubler* ♦ *fournir* = to supply

G

genial = *joyial* ♦ *génial* = brilliant (*c'est génial !* = it's great !)
gentle = *doux* ♦ *gentil* = nice, kind
grief = *chagrin* ♦ *grief* = grievance

H

herb = *herbe aromatique* ♦ *herbe (gazon)* = grass
humane = *humanitaire* ♦ *humain* = human

I

idiom = *idiotisme* ♦ *idiome* = language
to ignore = *ne pas faire attention à* ♦ *ignorer* = not to know
important *ne s'emploie pas au sens de "grand"* ♦ *des travaux importants* = extensive building work
inconvenient = *gênant, pas pratique* ♦ *un inconvénient* = a disadvantage
indignant = *indigné* ♦ *indigne* = unworthy ♦ *une mère indigne* = a bad mother

infancy = *petite enfance* ♦ *enfance* = childhood
information = *renseignements* ♦ *une information* = a piece of information, a piece of news ♦ *les informations* = the news
inhabited = *habité* ♦ *inhabité* = uninhabited
to injure = *blesser* ♦ *injurier* = to insult, to abuse
an instruction = *un ordre, une consigne* ; instructions = *mode d'emploi* ♦ *instruction* = education
interesting *ne s'emploie pas au sens commercial ou économique* ♦ *une affaire intéressante* = a profitable deal ♦ *un prix intéressant* = a good price
to intoxicate = *enivrer* ♦ *intoxiquer* = to poison
to introduce = *présenter* ♦ *introduire* = to put in
issue = *numéro (d'un magazine), sujet de débat* ♦ *issue* = exit

J

journey = *voyage* ♦ *journée* = day

L

to labor = *travailler* ♦ *labourer* = to plough
lard = *saindoux* ♦ *lard* = fat, bacon
large = *grand* ♦ *large* = wide, broad
lecture = *conférence* ♦ *lecture* = reading
library = *bibliothèque* ♦ *librairie* = bookshop
license = *permis (de conduire)* ♦ *licence (diplôme)* = degree
location = *endroit, lieu, emplacement* ♦ *location* = hire
lunatic = *malade mental* ♦ *lunatique* = changeable, impulsive
luxury = *luxe* ♦ *luxure* = debauchery

M

a marine = *un soldat de l'infanterie de marine* ♦ *la marine* = the navy
to march = *marcher au pas, défilé* ♦ *marcher* = to walk
marriage = *mariage (vie conjugale)* ♦ *mariage (cérémonie)* = wedding
medicine = *médecine / médicament* ♦ *médecin* = doctor
miserable = *triste* ♦ *misérable* = very poor
misery = *tristesse profonde* ♦ *misère* = extreme poverty
monument *s'emploie uniquement pour un édifice destiné à la commémoration d'un événement ou d'une personne* ♦ *monument (au sens plus large)* = historic building, castle, etc.
moral = *morale (d'une histoire)* ♦ *la morale (mœurs)* = morals, morality ♦ *le moral* = morale

N

nervous = *anxieux, nerveux* ♦ *nerveux* = irritable, nervy

O

occasion = *jour ou moment spécial* ♦ *occasion* = bargain, opportunity
to offer = *proposer* ♦ *offrir (cadeau, etc.)* = to give

P

parent = *mère ou père* ♦ (*autres*) *parents* = relatives

particular = *particulier, spécial* ♦ *un particulier* = a private individual ♦ *cours particuliers* = private lessons

to pass (an exam) = *réussir un examen* ♦ *passer un examen* = to take / sit / do an exam ♦ *passer du temps* = to spend time

pension = *retraite (argent versé)* ♦ *pension* = boarding house *ou* boarding school

petrol = *essence* ♦ *pétrole* = oil

photograph = *photographie* ♦ *photographe* = photographer

phrase = *groupe de mots, expression* ♦ *phrase* = sentence

politics = *politique (manière de gouverner)* ♦ (*ligne*) *politique* = policy

precise (adj.) = *précis, exact* ♦ *préciser* = to define, specify, make clear

prejudice = *préjugé(s)* ♦ *préjudice* = damage

presently = *bientôt, tout à l'heure (GB), maintenant (US)* ♦ *à présent* = at present

preservative = *agent conservateur* ♦ *préservatif* = sheath, condom

to pretend = *faire semblant* ♦ *prétendre* = to claim

price = *prix (valeur)* ♦ *prix (récompense)* = prize

process = *procédé, processus* ♦ *procès* = trial

professor = *professeur d'université (titulaire d'une chaire)* ♦ *professeur* = teacher

proper(ly) = *correct(ement), comme il faut* ♦ *propre(ment)* = clearly

property = *propriété* ♦ *propreté* = cleanness

prune = *pruneau* ♦ *prune* = plum

purple = *violet* ♦ *pourpre* = dark red

R

raisin = *raisin sec* ♦ *du raisin* = grapes (*grappe de raisin* = bunch of grapes)

to realize = *réaliser (se rendre compte de)* ♦ *réaliser (un projet, etc.)* = to carry out, perform, achieve

to receive = *recevoir (lettre, cadeau, argent, etc.)* ♦ *recevoir des gens* = to entertain, to see people, to have visitors

to recommend = *recommander (film, restaurant, etc.)* ♦ *lettre recommandée* = registered letter

to recover = *regagner quelque chose, se remettre (d'une maladie)* ♦ *recouvrir* = to cover

to recuperate = *se remettre (d'une maladie)* ♦ *recupérer* = to recover, to get back

refuse = *ordures* ♦ *refus* = refusal

to regard as = *considérer (comme)* ♦ *regarder* = to look (at)

to regret = *regretter une chose désagréable* ♦ *regretter (ce qui vous manque)* = to miss

to remark = *mentionner* ♦ *remarquer* = to notice

to resent = *trouver injuste* ♦ *ressentir* = to feel, to be conscious of

resignation = *démission / résignation*

to resolve = *prendre une résolution* ♦ *résoudre* = to solve

to respond = *réagir* ♦ *répondre* = to answer

rest = *repos / reste*

to resume = *recommencer, reprendre une activité qu'on avait arrêtée* ♦
résumer = to summarize, to sum up
to retire = *prendre sa retraite* ♦ *se retirer* = to withdraw
retreat = *retraite (d'une armée)* ♦ *retraite (à la fin de la vie active)* = retirement
reunion = *retrouvailles* ♦ *réunion* = meeting, party
Roman = *romain* ♦ *un roman* = a novel ♦ *le style roman* = the romanesque style
to ruin = *abîmer, gâcher / ruiner*

S

saloon = *sorte de bar* ♦ *salon* = sitting-room, living-room
savage = *féroce* ♦ *sauvage* = wild
scene = *scène (dans une pièce de théâtre)* ♦ *scène (dans un théâtre)* = stage
sensible = *sensé, raisonnable* ♦ *sensible* = sensitive
sentiment = *emotion* ♦ *sentiment* = feeling
sentimental = *larmoyant, à l'eau de rose* ♦ *sentimental* = sentimental, romantic
serious = *graves / sérieux*
service = *service (en général)* ♦ *service (division d'une entreprise, bureau)* = department
society = *la société (en général), association* ♦ *société (commerciale)* = company, firm
souvenir = *souvenir (objet, cadeau, etc.)* ♦ *souvenir (dans la mémoire)* = memory
stage = *étape, scène (d'un théâtre)* ♦ *stage* = course
station = *gare* ♦ *station de métro* = stop, station ♦ *station de tourisme* = resort
to support = *soutenir, entretenir financièrement* ♦ *supporter* = to stand, bear, put up with
support = *soutien* ♦ *support* = prop
starter = *démarreur* ♦ *starter* = choke
surname = *nom de famille* ♦ *surnom* = nickname
sympathetic = *compatissant* ♦ *sympathique* = pleasant, nice
syndicate = *groupement commercial* ♦ *syndicat* = trade union

T

technique = *technique (procédé, manière de faire)* ♦ *technique (technologie)* = technology
title = *titre (en général)* ♦ *titre de journal* = headline
traffic = *circulation routière, trafic* ♦ *trafic (commercial)* = trade
trivial = *banal, sans importance* ♦ *trivial* = bad-mannered, vulgar
to trouble = *déranger* ♦ *troubler* = to upset, to disturb

U

unique = *inimitable, seul* ♦ *unique (seul exemplaire)* = only

V

vacancy = *poste vacant* ♦ *vacances* = holiday(s)
verse = *strophe* ♦ *vers* = line
voyage = *voyage en bateau* ♦ *voyage* = journey, trip

Keep It Short and Simple

Avoid

a considerable amount of
a considerable number of
a great number of times
a majority of
a number of
a small number of
absolutely essential
accompany
accounted for by the fact that
additionally
adjacent to
admonish
afford an opportunity
afterwards
along the lines of
an example of this is the fact that
an order of magnitude faster
apparent
approximately
are of the same opinion
as a consequence of
as a matter of fact
as a means of
as already stated
as is the case
as of this date
as to
as to whether
ascertain
at a rapid rate
at an early date
at an earlier date
at some future time
at the conclusion of
at the present time
at this point in time

based on the fact that
be advised that
bring to a conclusion

Use Instead

much
many
often
most
some
a few
essential
go with
because
also
near
warn
let
afterward
like
for example
10 times faster
clear
about
agree
because
in fact (or leave out)
to
(leave out)
as happens
today
about (or leave out)
whether
find out
rapidly
soon
previously
later
after
now
now

because
(leave out)
end, conclude

by means of

capability
causal factor
caveat
completely full
component
compunction
consensus of opinion
considerable amount of
contiguous
control groups

deem
definitely proved
despite the fact that
disease process
due to the fact that
during the course of
during the time that

echelons
elucidate
employ
enclosed herewith
encounter
end result
endeavor
entirely eliminate
equivalent
etiology
eventuate
evidenced
exhibit a tendency to

fabricate
facilitate
fatal outcome
fewer in number
finalize
first of all
firstly
following
for a period of

by, with

ability
cause
warning
full
part
regret
consensus
much
touching
controls

think
proved
although
disease
because
during, while
while

levels
explain
use
enclosed
meet
result
try
eliminate
equal
cause
happen
showed
tend

make
ease, help
death
fewer
end
first
first
after
for

for the purpose of
for the reason that
from the point of view of
future plans

give an account of
give consideration to
give rise to

has been engaged in a study of
has the capability of
have the appearance of
having regard to
higher in comparison to
impact(v.)
important essentials
in a number of cases
in a position to
in a satisfactory manner
in a timely manner
in a very real sense
in almost all instances
in case
in close proximity to
in connection with
in lieu of
in many cases
in my opinion it is not an unjustifiable
 assumption that
in order to
in relation to
in respect to
in some cases
in spite of the fact that
in terms of
in the absence of
in the amount of
in the event that
in the first place
in the not-too-distant future
in the possession of
in the vast majority of cases
in this day and age
in view of the fact that

for
since, because
for
plans

describe
consider
cause

has studied
can
look like
about
higher than
affect
essentials
some
can, may
satisfactorily
promptly
in a sense (or leave out)
nearly always
if
close, near
about, concerning
instead of
often

I think
to
toward, to
about
sometimes
although
about
without
for
if
first
soon
has, have
usually
now
because, since

in as much as	because
inception	start
incline to the view	think
including but not limited to	including
incumbent upon	must
initiate	begin, start
interface	boundary , frontier
is defined as	is
is knowledgeable of	knows
it goes without saying that I	I
it has been reported by Smith	Smith reported (I haven't bothered to look up the reference)
it has long been known that	apparently
it is apparent that	I think
it is believed that	clearly
it is clear that	
it is clear that much additional work will be required before a complete understanding	(I don't understand it)
it is doubtful that	possibly
it is evident that <i>a</i> produced <i>b</i>	<i>a</i> produced <i>b</i>
it is generally believed	many think
it is important to note that	(leave out)
it is my understanding that	I understand that
it is of interest to note that	(leave out)
it is often the case that	often
it is recommended that consideration be given to	we recommend
it is worth pointing out in this context that	note that
it may be that	I think
it may, however, be noted that	but
it should be noted that	note that (or leave out)
it was observed in the course of these experiments that	we observed
join together	join
lacked the ability to	could not
large in size	large
let me make one thing perfectly clear	(a snow job is coming)
liaise with	coordinate with
majority of	most

make an assumption that	assume
make preparations for	prepare
make reference to	refer to
methodology	method
militate against	prohibit
month of	(leave out)
needless to say	(leave out, and consider leaving out whatever follows it)
new initiatives	initiatives
not later than	by
of great theoretical and practical importance	useful
of insufficient magnitude	too small
of long standing	old
of the opinion that	think that
on a daily basis	daily
on account of	because
on behalf of	for
on no occasion	never
on the basis of	by
on the grounds that	since, because
on the part of	by, among, for
optimum	best
our attention has been called to the fact that	(we belatedly discovered)
owing to the fact that	since, because
parameters	limits
penultimate	next to last
perform	do
permit	let
place a major emphasis on	stress
pooled together	pooled
practicable	practical
presents a picture similar to	resembles
prior to	before
prioritize	rank
protein determinations were performed	proteins were determined
provided that	if
quantify	measure
quite	(leave out)

quite a large quantity of
quite unique

much
unique

rather interesting
red in color
referred to as
relative to
remuneration
rendered completely inoperative
reported in the literature
resultant effect
root cause

interesting
red
called
about
pay, payment
broken
reported
result
cause

serious crisis
serves the function of being
shortfall
smaller in size
so as to
subject matter
subsequent to
sufficient
surreptitiously

crisis
is
shortage
smaller
to
subject
after
enough
secretly

take into consideration
terminate
the great majority of
the opinion is advanced that
the predominant number of
the question as to whether
the reason is because
the vast majority of
there is reason to believe
this result would seem to indicate
through the use of
time period
to the extent that
to the fullest possible extent
towards
transmit

consider
end
most
I think
most
whether
because
most
I think
this result indicates
by, with
time, period (not both)
if
fully
toward
send

ultimate
unanimity of opinion
until such time as
utilize

last
agreement
until
use

validate
very necessary
very unique

confirm
necessary
unique

was of the opinion that
ways and means
we have insufficient knowledge
we wish to thank
what is the explanation of
whether or not
with a view to
with reference to
with regard to
with respect to
with the possible exception of
with the result that
within the realm of possibility
witnessed

believed
ways, means (not both)
we do not know
we thank
why
whether
to
about
concerning, about
about
except
so that
possible
saw

Documentation

General Writing:

Andreyev, J. (1992). *Say it with style*

Williams, Joseph M. *Style: Lessons in Clarity and Grace* (12th Ed.)

Strunk, W., White, E. B. (1999). *Elements of Style* (4th Ed.)

University of Chicago Press (2003). *The Chicago Manual of style* (16th Ed.)

Scientific and Medical Writing:

American Chemical Society (2006). *The ACS Style Guide: Effective Communication of Scientific Information* (3rd Ed.)

American Medical Association (2007). *Manual of style: A guide for authors and editors* (10th Ed.)
Uniform requirements for manuscripts submitted to biomedical journals <http://www.icmje.org>

American Physical Society. <http://forms.aps.org/author/styleguide.pdf>

American Society of Agronomy, Crop Science Society of America, Soil Science Society of America.
<https://dl.sciencesocieties.org/publications/style/>

American Society for Microbiology. *ASM style manual*

Council of Science Editors. *Scientific style and format: the CBE manual for authors, editors, and publishers* (8th Ed.)

IEEE. <http://www.computer.org/portal/web/publications/styleguide>

Modern Language Association. *MLA Style Manual*

Beene, Lynn and White, Peter (1988). *Solving Problems in Technical Writing* (1st Ed.)

Burnett, Rebecca (2004). *Technical Communication* (6th Ed.)

Day, Robert A. (2006). *How to write and publish a scientific paper* (8th Ed.)

Docherty, Michael. *The case for structuring the discussion of scientific papers: Much the same as that for structuring abstracts*. *BMJ*, Volume 318 (7193). May 8, 1999.1224-1225

Huth, EJ (1990). *How to write and publish papers in the medical sciences* (2nd Ed.)

Mike Markel (2014). *Technical Communication* (11th Ed.)

O'Connor, Maeve (1999). *Writing successfully in science*

Zeiger, Mimi (1999). *Essentials of writing biomedical research papers*

Web Resources

See links in www.garyburkhart.fr